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ABSTRACTS

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ELEVATING GYNECOLOGIC SURGERY WORLDWIDE

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ABSTRACT AND VIDEO REVIEW COMMITTEE

Abstracts that were submitted for consideration for presentation and received as of May 4, 2022, are published as submitted and are provided to the members of the AAGL for use at the 51ST AAGL Global Congress on Minimally Invasive Gynecology. The abstracts will be presented in Oral, Video and Virtual Poster Sessions. Published by: Elsevier on behalf of AAGL.

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ELSEVIER

JMIG The Journal of Minimally Invasive Gynecology

AAGL ELEVATING GYNECOLOGIC SURGERY

Didactic Presentations

FRIDAY, DECEMBER 2, 2022 ORAL SESSION 1 - FIBROIDS (11:30 AM — 12:35 PM)

11:33 AM

Relugolix Combination Therapy Improves Uterine Fibroid Symptoms Independent of Fibroid Location over 24 Weeks

Stewart E.A.,[*,1] *Al-Hendy A.,*[2] *Venturella R.,*[3] *Lukes A.S.,*[4] *Proehl S.,*[5] *Zhao X.*[5]. [1]*Mayo Clinic, Rochester, MN;* [2]*Department of Obstetrics and Gynecology, University of Illinois at Chicago, Chicago, IL;* [3]*Magna Graecia University of Catanzaro, Catanzaro, CZ, Italy;* [4]*Carolina Women's Research and Wellness Center, Chapel Hill, NC;* [5]*Myovant Sciences Inc., Brisbane, CA*
*Corresponding author.

Study Objective: To evaluate the impact of fibroid location (submucosal, intramural, or subserosal) on treatment outcomes with relugolix combination therapy (Relugolix-CT) in women with uterine fibroid (UF)-associated heavy menstrual bleeding (HMB) in the LIBERTY 1 (L1) and LIBERTY 2 (L2) studies.
Design: L1 and L2 were replicate, Phase 3, double-blind, 24-week trials.
Setting: 80 (L1) and 99 (L2) research centers globally.
Patients or Participants: Premenopausal women (age 18−50 years) with diagnosed UF (confirmed on ultrasonography) and HMB (assessed by the alkaline hematin method).
Interventions: Participants were randomized to once-daily Relugolix-CT (relugolix 40 mg, estradiol 1 mg, norethindrone acetate 0.5 mg) or placebo for 24 weeks.
Measurements and Main Results: Fibroid location was investigator-defined using ultrasound; FIGO type 0/1 fibroids were excluded. Menstrual blood loss (MBL) volume was measured by alkaline hematin method (responders: MBL volume <80mL and ≥50% reduction from baseline over last 35 days of treatment). Pain and other UF-associated symptoms were evaluated using the Numerical Rating Scale and Uterine Fibroid Symptom and Health-Related Quality of Life Questionnaire (Symptom Severity scale) in this *post-hoc* analysis. Pooled L1 and L2 data were used. In the Relugolix-CT (N=253) and placebo (N=256) groups, fibroid location was categorized as subserous (N=50 and N=58), intramural (N=115 and N=130), submucosal (N=46 and N=43) or "other/unknown" (N=119 and N=106). Overall, 136 women had >1 type of fibroid and were therefore included in >1 subgroup. Baseline characteristics, including MBL volume, pain and quality of life scores, were similar between subgroups. For each fibroid subgroup, respectively, women randomized to Relugolix-CT had comparable responder rates: 76.0%, 79.1%, 80.4%, and 65.6% at Week 24, which were higher than with placebo: 24.1%, 16.2%, 14.0%, and 16.0% (all nominal p<0.0001). Across all subgroups, Relugolix-CT resulted in significant reductions in MBL volume, UF-associated pain and Symptom Severity versus placebo.
Conclusion: Relugolix-CT improved HMB and other UF-associated symptoms through 24 weeks independent of fibroid location.

ORAL SESSION 1 - FIBROIDS (11:30 AM — 12:35 PM)

11:40 AM

Racial Disparities in Abdominal and Laparoscopic Myomectomies: A NSQIP Study

Moore C.,[*,1] *Kazma J.,*[1] *Acosta Diaz D.A.,*[2] *Wu C.Z.,*[2] *Marfori C.Q.,*[1,3] *Wang S.*[1]. [1]*George Washington University, Washington, DC;* [2]*Minimally Invasive Gynecologic Surgery, George Washington University, Washington, DC;* [3]*Minimally Invasive Gynecologic Surgery, Inova Health Systems, Falls Church, VA*
*Corresponding author.

Study Objective: Identify disparities in myomectomy approach and outcomes for black and non-black patients.
Design: Retrospective analysis of benign myomectomy procedures, categorized into "abdominal" and "laparoscopic" based on Current Procedural Terminology (CPT) codes. Patient race, comorbid conditions, and postoperative outcomes were compared using univariate and multivariate analyses.
Setting: Analysis of American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database.
Patients or Participants: Patients undergoing abdominal or laparoscopic myomectomy from 2018 to 2020.
Interventions: N/A.
Measurements and Main Results: A total of 12,370 cases were identified as abdominal or laparoscopic myomectomies. 56% were abdominal and the remaining 44% were laparoscopic. Black patients accounted for 40% of all myomectomies, while white patients accounted for 29%. Black patients had a 65% increased odds of an abdominal approach compared to white patients (OR 1.65, 95% CI 1.51-1.81), and a 27% increased odds compared to all non-black patients (OR 1.27, 95% CI 1.18-1.36). Black patients were more likely to have BMI ≥ 25 (p<0.001), 5 or more fibroids/size > 250g (p<0.001), hypertension requiring medications (p<0.001), need inpatient admission (p<0.001), have preoperative anemia (p<0.001), and receive a preoperative transfusion (p<0.001). After controlling for fibroid size and number, black patients were still 40% more likely to undergo an abdominal approach than non-black patients. Additionally, although overall rare, black patients were more likely to experience postoperative complications. They were more likely to require postoperative transfusion, even after adjusting for preoperative anemia, myomectomy route, and number/size of fibroids removed (OR 1.6, 95% CI 1.3-1.8). They were also more likely to have a pulmonary embolism (p=0.03) and hospital stays greater than 1 day (p=0.06) after an abdominal myomectomy, though these differences were not present for laparoscopy.
Conclusion: Black patients are more likely to undergo abdominal myomectomies and have postoperative complications than non-black patients. These disparities persist after controlling for preoperative risk factors and are not solely attributable to surgical route.

1553-4650/$ — see front matter
https://doi.org/

ORAL SESSION 1 - FIBROIDS
(11:30 AM — 12:35 PM)

11:47 AM

Healthcare Cost and Utilization of Uterus-Sparing Interventions in Women with Uterine Fibroids: A Retrospective Claims Analysis

Lim S.L.,[*,1] *Sobolewski C.J.,*[2] *Pohlman S.,*[3] *Rane A.,*[4] *Currigan S.*[5].
[1]*Department of Obstetrics and Gynecology, Duke University, Durham, NC;* [2]*Obstetrics and Gynecology, Duke University Medical Center, Durham, NC;* [3]*Outcomes Research, Hologic Inc, Marlborough, MA;* [4]*Health Policy and Reimbursement, Hologic, Inc., Marlborough, MA;* [5]*Clinical Research & Scientific Affairs, Hologic Inc., Baltimore, MD*
*Corresponding author.

Study Objective: To describe peri-operative costs and healthcare utilization of four uterus-sparing interventions used to treat women with intramural and/or subserosal uterine fibroids.
Design: Retrospective US insurance claims analysis.
Setting: N/A.
Patients or Participants: The IBM MarketScan® Commercial Database was queried to identify 37,730 women with no history of gynecology cancer who underwent a uterus sparing procedure for fibroids between 1/2014-7/2021. Of those, 15,557 patients underwent abdominal myomectomy (AM), 11,896 underwent laparoscopic myomectomy (LM), 9,158 underwent uterine artery embolization (UAE), and 270 underwent laparoscopic radiofrequency ablation (LAP-RFA). The mean age was 36.6 for women undergoing AM, 37.4 for LM, 41.2 for LAP-RFA, and 44.7 for UAE.
Interventions: Abdominal and laparoscopic myomectomy, UAE, LAP-RFA.
Measurements and Main Results: Median perioperative costs, defined as patient out-of-pocket cost and insurance payments, were $11,710 (IQR $7,907, $18,762) for LAP-RFA, $13,774 (IQR $9,132, $21,890) for LM, $15,830 (IQR $11,265, $21,915) for AM and $15,877 (IQR $10,398, $24,193) for UAE patients.
Eighty-one percent of AM patients required hospital admission post-operatively, compared with 7% of UAE, 6% of LM, and 1% LAP-RFA patients. Less than 10% of patients had an ER visit within 30 days after the procedure (8% for UAE, 6% for all other interventions).
The 1-year re-intervention rate of any subsequent procedure (AM, LM, LAP-RFA, UAE, or hysterectomy) was lowest in AM group (3%) followed by LM (8%), LAP-RFA (9%), and UAE (9%). The 2-year re-intervention rate was 5% for AM, 10% for LM (10%), 12% for UAE and 13% for LAP-RFA.
Conclusion: The 3 minimally invasive approaches had similar rates of re-intervention at 2 years (10-13%). AM was associated with the lowest re-intervention rate (5%) but also the highest rate of post-operative admissions. LAP-RFA was associated with the lowest peri-operative cost, and UAE was associated with the highest peri-operative cost. Further studies are needed to assess the cost, effectiveness, and patient satisfaction with each procedure.

ORAL SESSION 1 - FIBROIDS
(11:30 AM — 12:35 PM)

11:54 AM

Association between Surgical Fibroid Removal and Blood Pressure: A Retrospective Case-Control and Prospective Cohort Study

Kischen G.W.,[*,1] *Yanek L.,*[2] *Borahay M.A.*[3]. [1]*Gynecology & Obstetrics, Johns Hopkins Hospital, Baltimore, MD;* [2]*Internal Medicine, Johns Hopkins Hospital, Baltimore, MD;* [3]*Department of Gynecology and Obstetrics, Johns Hopkins University, Baltimore, MD*
*Corresponding author.

Study Objective: Fibroids, monoclonal proliferations of uterine smooth muscle cells, are common in women and have recently been associated with cardiometabolic risk factors including hypertension. The objective of this study is to determine whether fibroids are biomarker of systemic hypertension, and whether they may contribute to elevation in blood pressure.
Design: IRB-approved retrospective case-control study and prospective cohort study.
Setting: Single academic institution.
Patients or Participants: Retrospective chart review of 313 patients undergoing hysterectomy or myomectomy for fibroids and patients undergoing other surgical procedures for benign gynecological indications with similar demographic characteristics (control). Prospective cohort of 9 women undergoing myomectomy or hysterectomy for fibroids.
Interventions: Hysteroscopy, laparoscopy, open myomectomy or hysterectomy for fibroids (or non-fibroid indications as control).
Measurements and Main Results: In our retrospective cohort (n=294; mean age 41.9±10.6, 43.5% Black, 50% with fibroids), we found consistently that compared to patients without fibroids, patients with fibroids had significantly elevated systolic BP (pre-op 128 vs 122mmHg, p=0.0005; post-op 126 vs 122mmHg, p=0.02) but not diastolic BP (pre-op 77.6 vs 75.9mmHg, p=0.17; post-op 76.7 vs 75.0, p=0.19). Among patients with fibroids, surgical fibroid removal was associated with a small but not statistically or clinically significant drop in systolic (Δ=-2.21mmHg, p=0.062) but not diastolic BP (Δ=-0.93mmHg, p=0.39). The direction and magnitude of effect for change in systolic BP remained consistent after adjustment for age, race, and presence of diagnosed hypertension (β=-2.45, p=0.17). In our prospective cohort, there was a significant decrease in SBP of 9.9mmHg (pre- versus post-operatively), but no change in DBP following fibroid removal (p=0.03, p=0.14, respectively). Serum levels of Ang-II and ACE were not significantly altered following surgical fibroid removal (p=0.39, p=0.80, respectively).
Conclusion: Altogether, these findings demonstrate that fibroids are associated with hypertension and suggest that fibroid removal may lead to a clinically significant decrease in systolic blood pressure. These changes may occur by a mechanism independent of the renin-angiotensin-aldosterone system.

ORAL SESSION 1 - FIBROIDS
(11:30 AM — 12:35 PM)

12:01 PM

Perioperative Venous Thromboembolism in Patients Undergoing Hysterectomy for Fibroids: A Nationwide Sample

Orlando M.S.,[*,1] *Sinha A.,*[2] *Yao M.,*[3] *Shippey E.,*[4] *Kho R.M.*[5]. [1]*Women's Health Institute, Cleveland Clinic, Cleveland, OH;* [2]*Obstetrics and Gynecology, Cleveland Clinic, Cleveland, OH;* [3]*Department of Quantitative Health Sciences, Section of Biostatistics, Cleveland Clinic, Cleveland, OH;* [4]*Vizient Inc, Irving, TX;* [5]*Cleveland Clinic, Cleveland, OH*
*Corresponding author.

Study Objective: Venous thromboembolism (VTE) occurs in 0.4-0.7% of benign hysterectomies. Pelvic vascular compression secondary to fibroids may represent a mechanism for elevated VTE risk. We aimed to evaluate the incidence and timing of VTE among women undergoing hysterectomy for fibroids and other benign indications.
Design: Retrospective cohort.
Setting: Vizient clinical database.
Patients or Participants: Adult women without thrombophilias who underwent benign hysterectomy between January 2015-December 2021.
Interventions: VTE included pulmonary embolism or deep venous thrombosis diagnosed during four time periods: 1) preoperative remote (6 weeks to 1 year before surgery), 2) preoperative acute (6 weeks before surgery), 3) perioperative (6 weeks after surgery), and 4) postoperative remote (6 weeks to 1 year after surgery). Demographics, comorbidities,

surgical characteristics, and VTE rates were compared by surgical indication.
Measurements and Main Results: A total of 439,705 patients were identified (248,744 with fibroids and 190,961 without), and 0.98% (4,293) experienced VTE during the study period. On univariate analysis, individuals with fibroids were more likely than those without fibroids to have VTE during the preoperative remote (0.27% vs 0.22%, p<0.001), preoperative acute (0.27% vs. 0.19%, p<0.001), and perioperative periods (0.39% vs. 0.32%, p<0.001). On multivariable logistic regression adjusting for demographics, comorbidities, uterine weight < or ≥250g, and VTE prophylaxis, the presence of fibroids was associated with increased odds of VTE in the preoperative acute period (aOR 1.29, 95% CI 1.13 - 1.49, p<0.001). In contrast, the presence of fibroids was associated with reduced odds of VTE in the postoperative remote period (aOR 0.87, 95% CI 0.78-0.96, p=0.008).
Conclusion: In a nationwide database, patients with fibroids undergoing hysterectomy were more likely than those with other indications to have VTE diagnosed before surgery. VTE risk was not increased postoperatively and may reflect appropriate use of prophylactic VTE measures in this patient population.

ORAL SESSION 1 - FIBROIDS
(11:30 AM — 12:35 PM)

12:08 PM

Attitudes and Beliefs about Hysterectomy in Patients with Uterine Fibroids

Duyar S.,[*1] Tsai S.C.,[2] Milad M.P.,[3] Chaudhari A.[3]. [1]Gynecologic Oncology, Medical College of Wisconsin, Milwaukee, WI; [2]Department of Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Northwestern University Feinberg School of Medicine, Chicago, IL; [3]Department of Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Northwestern Medicine, Chicago, IL*
*Corresponding author.

Study Objective: To investigate the attitudes toward and beliefs about hysterectomy that may influence the decision-making of women with symptomatic uterine fibroids.
Design: Prospective survey study.
Setting: Outpatient clinic.
Patients or Participants: Patients in a single complex gynecology outpatient clinic, age 35 or older, with uterine fibroids and without prior hysterectomy were invited to participate. A total of 67 participants were surveyed between December 2020 and February 2022.
Interventions: Data was collected on demographics, Uterine Fibroid Symptom Health-Related Quality of Life Questionnaire (UFS-QOL) scores, and beliefs regarding hysterectomy via a web-based survey. Participants were posed with clinical scenarios and asked to indicate a preference for hysterectomy or myomectomy and stratified into groups by acceptability of hysterectomy as a treatment option for fibroids.
Measurements and Main Results: Data were analyzed using Chi-square or Fisher exact tests, t-tests, or Wilcoxon tests as appropriate. The mean age of participants was 46.2 (SD 7.5) years, 57% of participants self-identified as white/Caucasian. The mean UFS-QOL symptoms score was 50 (SD 26) and the mean overall health-related quality of life score was 52 (SD 28). 34% of participants preferred hysterectomy while 54% preferred myomectomy. There were no differences observed in UFS-QOL scores. Participants opting for a hysterectomy believed that it would improve their: mood, relationship with partner, general quality of life, sense of femininity, feeling whole, identity and body image, sexuality, and relationships. Those who opted for a myomectomy believed that hysterectomy would instead worsen all of the above factors, as well as, worsen their partner's experience.
Conclusion: Many factors impact patient's decisions regarding hysterectomy for uterine fibroids beyond those related to fertility, including factors related to body image, sexuality, and relationships. Physicians should consider these factors when counseling patients and recognize their importance to facilitate improved shared decision-making.

ORAL SESSION 1 - FIBROIDS
(11:30 AM — 12:35 PM)

12:15 PM

Pre-Surgical Transcervical Tru Cut Biopsy of Myometrial Lesions with Abnormal Ultrasonographic Appearance

Richtarova A., Mara M., Hlinecka K., Lisa Z., Boudova B.. Center for Reproductive Surgery, Department of Gynecology and Obstetrics, General University Hospital in Prague, Prague, Czech Republic*
*Corresponding author.

Study Objective: Determining safety, feasibility, and validity of transcervical Tru-cut biopsy (TCB) as complementary method in the management of uterine mass with abnormal ultrasound (US) features.
Design: Prospective pilot study.
Setting: Out-patient procedure without the need for anesthesia performed in lithotomic position with 18-gauge disposable core tissue biopsy needle under transvaginal US guidance.
Patients or Participants: Ten premenopausal women with atypical myometrial mass on transvaginal US examination indicated for laparoscopic myomectomy (LM) were included. The myometrial lesion was described using MUSA (Morphological Uterus Sonographic Assessment) criteria.
Interventions: All patients underwent transcervical TCB. Transcervical approach without disruption of the perimetrium was chosen to ensure the oncological safety and exclude dissemination of potentially malignant cells. Three tissue samples of the tumor were collected for histopathological analysis from each patient 2 to 4 weeks prior to the surgery. In case of benign TCB histology result, LM with the use of enclosed morcellation was performed as planned. Acquired specimen was analyzed and both histological results were compared.
Measurements and Main Results: In all 10 cases TCB was feasible and without any peri- or post-procedural complications. The histology results from TCB and LM were identical and non-malignant in all cases. Following histological findings were recorded: conventional leiomyoma in 7 cases, cellular leiomyoma in 1 case, epithelioid leiomyoma in 1 case, leiomyoma with bizarre nuclei in 1 case.
Conclusion: Although small, our pilot data suggest that TCB using the transcervical approach is feasible and safe for patients with planned myomectomy and abnormal US appearance of the uterine mass. TCB can thus provide reliable and precise histopathological data and may allow the surgeon to set up an adequate, mini-invasive, and still maximally safe treatment plan.

ORAL SESSION 2 - ENDOMETRIOSIS
(11:30 AM — 12:35 PM)

11:33 AM

Diagnosis of Endometriosis: The Surgeon's Eye Compared to Histopathology

McKee D.C.,[*,1] Wasson M.N.*[2]. [1]*Department of Medical and Surgical Gynecology, Mayo Clinic Arizona, Phoenix, AZ;* [2]*Department of Medical and Surgical Gynecology, Mayo Clinic in Arizona, Phoenix, AZ*
*Corresponding author.

Study Objective: Evaluate the intraoperative visual detection of endometriosis compared to final histopathologic diagnosis based on lesion type.
Design: Prospective clinical study.
Setting: Tertiary-care, academic medical center.
Patients or Participants: Seventy-seven patients underwent surgical evaluation for suspected endometriosis by high-volume endometriosis surgeons.
Interventions: Minimally invasive complete pelvic peritonectomy with documentation of visual presence or absence of endometriosis and lesion type. Powder burn lesions were defined as typical lesions. White scarring, clear vesicles, red flame, and peritoneal pockets were defined as atypical lesions.
Measurements and Main Results: A total of 1,069 peritoneal specimens were obtained with visual detection of endometriosis reported for 352 specimens (32.93%). Endometriosis was confirmed on histopathologic evaluation in 65.8% powder burn lesions, 51.6% white scarring, 45.7% clear vesicles, 39.1% red flame, and 28.9% peritoneal pockets (p=0.003). Additionally, 11.3% of specimens with no visible endometriosis demonstrated a positive histopathologic diagnosis. Overall sensitivity was 68.36%, specificity was 78.15%, positive predictive value was 49.72%, and negative predictive value was 88.66% for visual detection of endometriosis. White scarring was the lesion type with the highest sensitivity at 44.14% while the lowest sensitivity was for red flame lesions at 10.0%. All lesion types had a high specificity (powder burn 96.20%, white scarring 91.34%, clear vesicles 92.54%, red flame 97.84%, peritoneal pocket 95.91%). The positive predictive value varied depending on lesion type (powder burn 65.75%, white scarring 51.61 %, clear vesicles 45.74%, red flame 39.13%, peritoneal pocket 28.95%).
Conclusion: There is poor reliability for the visual detection of endometriosis at the time of surgical evaluation for endometriosis. Typical and atypical lesions have similar sensitivity, specificity, and positive predictive value for accurate visual detection of endometriosis. Specimens with no visible endometriosis are found to have histopathologic disease in 11.3% of specimens. This potential for atypical appearance and disease not macroscopically visible suggests a role for complete pelvic peritonectomy.

ORAL SESSION 2 - ENDOMETRIOSIS
(11:30 AM — 12:35 PM)

11:40 AM

Issa Score: An Innovative Tool for Predicting Lateral Parametrial Involvement at Preoperative Ultrasound in Deep Endometriosis

Barra F.,[*,1,2] *Zorzi C.,*[1] *Albanese M.,*[1] *Deromemaj X.,*[1] *Stepniewska A.K.,*[1] *De Mitri P.,*[1] *Roviglione G.,*[1] *Clarizia R.,*[1] *Ceccaroni M.*[1]. [1]*Gynecology and Obstetrics, Gynecologic Oncology, Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, IRCCS Sacro Cuore Don Calabria Hospital, Negrar di Valpolicella, Verona, Italy;* [2]*Academic Unit of Obstetrics and Gynecology, IRCCS San Martino Polyclinic Hospital, Genoa, Italy*
*Corresponding author.

Study Objective: to build a preoperative predictive model based on indirect ultrasonographic markers for estimating the presence of lateral parametrial endometriosis (LPE) at surgery in women with deep endometriosis (DE).
Design: retrospective analysis of a prospectively collected database (NCT05239871).
Setting: referral center for endometriosis.
Patients or Participants: consecutive patients undergoing preoperative ultrasound (ULS) for suspected DE.
Interventions: preoperative ULS was done according to the IDEA criteria. A stepwise forward regression analysis was performed considering the presence of concomitant DE (hard markers) and the following ULS soft markers: diffuse adenomyosis, endometriomas, ovary fixity to the lateral pelvic wall/uterine wall, absence of anterior/posterior sliding sign, and hydronephrosis. The gold standard for the presence of LPE was surgical confirmation of endometriosis. Beta-coefficients of variables in the derivation set were used to generate a nomogram (0-35 points; ISSA score); its predictive performance was measured by concordance index (C index) by calibration with 1000 bootstrap samples to decrease the overfit bias.
Measurements and Main Results: 198 out of 523 patients enrolled had a surgical diagnosis of LPE. A significant predictive model (χ2=141.069; p<0.001) for LPE (any side) was built, including (OR; 95%CI), as soft markers, presence of hydronephrosis (11.3; 1.3-98.6; p=0.028), complete absence of posterior sliding sign (3.0; 1.8-4.9; p<0.001), presence of ovary fixity to uterine wall (2.5; 1.6-4.0; p=0.001), and presence of multiple endometriomas per ovary (2.4; 1.1-5.8; p=0.04); as hard markers, presence of rectal endometriosis with largest diameter >25 mm (3.1; 1.4-7.0; p=0.007), presence of uterosacral nodules with largest diameter >10 mm (2.7; 1.5 - 4.8; p=0.001), and presence of rectovaginal septum infiltration (2.1; 1.0-4.3; p=0.046). The nomogram deriving from these variables showed an AUC of 0.79 (0.72-0.83) with an elevate C index (mean absolute error=0.054) for predicting LPE.
Conclusion: ISSA score is a reliable tool based on specific ultrasonographic markers that estimates the likelihood of LPE at preoperative assessment for DE.

ORAL SESSION 2 - ENDOMETRIOSIS
(11:30 AM — 12:35 PM)

11:47 AM

AI-Derived Threshold Score of Intraabdominal Myoelectrical Activity Predicts Presence and Stage of Endometriosis with 100% Accuracy

Noar M.. *Neurogastroenterology Institute, Sparks Glencoe, MD*
*Corresponding author.

Study Objective: 1) Demonstrate non-invasive cutaneous Electroviscerography (EVG)-detected abnormal gastrointestinal myoelectrical activity (GMA) has 100% accuracy diagnosing endometriosis. 2) Demonstrate GMA-based artificial intelligence (AI)-derived formulae detects endometriosis regardless of hormonal suppression, surgical stage or symptoms.
Design: Prospective open-labeled study.
Setting: Clinical center for women's healthcare.
Patients or Participants: 50 women ages 17-45 with chronic abdominal pain, negative CT or MRI, and gastrointestinal endoscopy, scheduled for laparoscopy.
Interventions: Baseline EVG w/water load satiety test(WLST) and pain scores, followed by diagnostic laparoscopic surgery w/biopsy.
Measurements and Main Results: Response to EVG WLST identified specifically elevated GMA frequencies of 15-20(9.5 vs 2.2, p<0.001), 30-40 (3.1 vs 0.8, p<0.001) and 50-60(1.1 vs 0.5,p<0.05) compared to known population normals and disease free subjects with abdominal pain. GMA-derived 2 stage Ai-determined threshold (AIET) was calculated to be >0.5, using linear regression of area under curve on first pass and age and pain scores in the second pass, demonstrated 100% selectivity and 100% specificity, respectively. All subjects exceeded AIET and had ASRM stages 1-4 at laparoscopy. AIET scores ranged 0.52 to 8.9, and escalated according to advancing surgical grade. Hormonal suppression did not affect diagnosis.
Conclusion: Endometriosis-specific abnormalities of GMA post-WLST predicts surgically detected endometriosis w/100% accuracy. AI GMA-derived threshold detects endometriosis with 100% sensitivity and specificity. Hormonal suppression, symptoms and surgical grade of

endometriosis did not affect test accuracy. Variations in Ai-derived threshold scores may predict surgical stage of endometriosis. EVG represents an ideal test for the detection and screening of endometriosis.

ORAL SESSION 2 - ENDOMETRIOSIS
(11:30 AM — 12:35 PM)

11:54 AM

Can AAGL 2021 Endometriosis Classification be Adopted at Preoperative Ultrasound for Reliably Predicting Surgical Complexity?

Zorzi C.,[1] Barra F.,[1,2] Albanese M.,[1] Tosi M.,[1] Dal Pozzolo C.,[1] Stepniewska A.K.,[1] De Mitri P.,[1] Roviglione G.,[1] Clarizia R.,[1] Ceccaroni M.[1]. [1]Gynecology and Obstetrics, Gynecologic Oncology, Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, IRCCS Sacro Cuore Don Calabria Hospital, Negrar di Valpolicella, Verona, Italy; [2]Academic Unit of Obstetrics and Gynecology, IRCCS San Martino Polyclinic Hospital, Genoa, Italy*
*Corresponding author.

Study Objective: to evaluate the use of new AAGL2021 Endometriosis classification (AAGL2021-EC) for staging at ultrasound (ULS) women undergoing surgical approach for deep endometriosis (DE).
Design: single-center retrospective analysis of a prospectively collected database (NCT05291624).
Setting: referral center for endometriosis.
Patients or Participants: consecutive women undergoing surgical approach for DE.
Interventions: at preoperative ULS, the presence of endometriosis was staged by using the AAGL2021-EC (ULS score). Laparoscopic surgical approach was performed within 15 days from the ultrasonographic evaluation. During surgery, the presence of endometriosis was staged by using the AAGL2021-EC (surgical score); the surgeons were blinded to the results of the preoperative ULS staging. All the women were treated by full radical resection of all visible endometriotic lesions.
Measurements and Main Results: 198 patients were enrolled. The mean ULS score was significantly lower than the surgical score (24.6 ± 12.3 vs 35.9 ± 19.6; p<0.001). In 53.5% (n=106) of patients, the severity stage predicted by ULS score coincided exactly with that described at surgery; in 32.8% (n=65) cases, ULS predicted a higher surgical severity stage; in 13.7% (n=27) cases, ULS predicted a lower severity stage. There was a moderate agreement between ULS severity stage and surgical procedures performed according to the distinguished severity stages expected by the AAGL2021-EC (V=0.520; p=0.0003); in particular, the agreement was worse when predicting surgical procedures related to lower (V=0.172; p=0.327) than higher (V=0.412; p=0.005) severity stages (p<0.001). The maximum percentages of exact concordances between ULS and surgical specific localization scores were observed for bladder (83.1%) and vagina (77.2%); the minimum percentage for peritoneum (41.2%). The most relevant underestimation and overestimation in specific localization scores were reported, respectively, for left ureter (46.5%) and right ovary (31.5%).
Conclusion: the ultrasonographic use of AAGL2021-EC moderately predicts surgical complexity; in particular, it tends to be worse when predicting easier surgical procedures expected by AAGL2021-EC severity stages.

ORAL SESSION 2 - ENDOMETRIOSIS
(11:30 AM — 12:35 PM)

12:01 PM

Comparison of the Recently Published "AAGL Endometriosis Classification" with Other Staging Systems to Predict Surgical Complexity

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Study Objective: We aim to assess the performance of the "2021 AAGL Endometriosis Classification" compared with revised American Society of Reproductive Medicine (rASRM), Ultrasound Based Endometriosis Staging System (UBESS) and modified Ultrasound Based Endometriosis Staging System (mUBESS) to predict AAGL levels of surgical complexity.
Design: Multicenter retrospective diagnostic accuracy study.
Setting: 2 gyneacology units in metropolitan Sydney, Australia.
Patients or Participants: Patients with suspected endometriosis who underwent laparoscopy between January 2016 and October 2021 (n=272).
Interventions: Database of patients with comprehensive surgical data including location & severity of endometriosis & surgical procedure performed was analysed. AAGL surgical complexity level (A to D) was predetermined by consensus between three observers. For the three stage UBESS to be compared with the four levels of AAGL surgical complexity, levels B and C were merged. rASRM stage 1, 2, 3 and 4 predicted AAGL level A, B, C and D, respectively. UBESS stage 1, 2 and 3 predicted AAGL level A, B/C and D, respectively. mUBESS stage 1, 2, 3 and 4 predicted AAGL level A, B, C and D, respectively. The performance of all staging systems was assessed using kappa, accuracy, sensitivity, specificity, positive predictive value (PPV,) negative predictive value (NPV) and likelihood ratios.
Measurements and Main Results: Across all diagnostic accuracy measurements there was no clear difference between the four staging tools. For overall comparison, kappa/weighted kappa scores respectively were: For AAGL 0.42 & 0.55, for rASRM 0.41 & 0.55, for UBESS 0.44 & 0.57 and for mUBESS 0.47 & 0.58.
Conclusion: Across all tools, there was good concordance for mild and severe disease to predict surgical skill level. For intermediate disease there was weak concordance. There was no clearly superior tool.

ORAL SESSION 2 - ENDOMETRIOSIS
(11:30 AM — 12:35 PM)

12:08 PM

Minimizing Repeat Surgeries for Endometrioma: Impact of Surgical Intervention by Minimally Invasive Gynecologic Surgeons

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Study Objective: The objective of this study is to determine whether patients who are diagnosed with ovarian endometrioma(s) on imaging

undergo fewer total surgeries for treatment of their endometrioma and endometriosis if the initial surgery is performed a minimally invasive gynecologic surgery (MIGS) specialists compared to a general obstetrician-gynecologist.
Design: Single center, IRB-approved retrospective chart review.
Setting: Academic, tertiary care institution in the United States.
Patients or Participants: Records of 383 females age 18 with endometrioma(s) diagnosed on pelvic imaging who underwent surgical treatment were included in this study. Patients without endometrioma on final pathology or with diagnosis of malignancy were excluded.
Interventions: N/A.
Measurements and Main Results: Patients who underwent primary surgery by MIGS specialists were significantly less likely to undergo a second and third surgery than if initially performed by a general Ob/Gyn (second surgery n=19, 10.4% vs. n=24, 18.2%, third surgery n=2, 1.1% vs. n= 9, 6.8%; p<0.01). A higher proportion of patients whose first surgery was performed by MIGS had only 1 surgery than patients whose first surgery was performed by a general Ob/Gyn (n=162, 88.5% vs. n=99, 75.0%). MIGS specialists were more likely to use a laparoscopic approach compared to general Ob/Gyn for all cases (first surgery n=183, 54.8% vs. n= 106, 31.7%, second surgery n= 41, 73.2% vs. n=9, 16.1%, third surgery n=11, 84.6% vs. n= 1, 7.7%; p<0.01).
Conclusion: Patients diagnosed with endometriomas on imaging who undergo surgical management are less likely to undergo subsequent surgery if their initial surgery was performed by a MIGS specialist as compared to a general obstetrician-gynecologist. These findings have important implications for surgical referral patterns of patients with endometriomas on preoperative imaging.

ORAL SESSION 2 - ENDOMETRIOSIS (11:30 AM — 12:35 PM)

12:15 PM

Location Matters: Likelihood of Superficial Endometriosis by Anatomic Site

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Study Objective: Compare anatomic site of visual and histopathologic endometriosis.
Design: Prospective clinical study.
Setting: Tertiary-care, academic medical center.
Patients or Participants: Surgical evaluation of 77 patients for suspected endometriosis by high-volume endometriosis surgeons.
Interventions: Documentation of visually present or absent endometriosis by anatomic site (left pelvic sidewall, left uterosacral ligament, right pelvic sidewall, right uterosacral ligament, posterior cul-de-sac, and bladder) followed by complete pelvic peritonectomy and pathologic evaluation.
Measurements and Main Results: Among all specimens with histopathology of endometriosis, the rates by anatomic site were 33.6% posterior cul-de-sac, 24.2% left pelvic sidewall, 18.4% right pelvic sidewall, 9.8% bladder, 7.4% left uterosacral ligament, and 6.6% right uterosacral ligament. For anatomic sites with visually suspected endometriosis, histopathologic diagnosis was confirmed in 53.4% posterior cul-de-sac, 49.4% left pelvic sidewall, 41.4% right pelvic sidewall, 60.9% bladder, 50% left uterosacral ligament, and 46.2% right uterosacral ligament (p<0.001). Sensitivity by anatomic site was 72.1% posterior cul-de-sac, 67.7% left pelvic sidewall, 61.7% right pelvic sidewall, 56.0% bladder, 84.2% left uterosacral ligament, and 70.6% right uterosacral ligament. Bladder had the highest positive predictive value (60.9%) while right pelvic sidewall had the lowest (41.4%). Specificity was consistent between anatomic sites (74.8% posterior cul-de-sac, 74.6% left pelvic sidewall, 77.7% right pelvic sidewall, 92.8% bladder, 72.4% left uterosacral ligament, 76.7% right uterosacral ligament). Negative predictive value was also consistent between anatomic sites with the highest for left uterosacral ligament (93.3%) and lowest for left pelvic sidewall (86.3%).
Conclusion: Endometriosis was most frequently found in the posterior cul-de-sac and least frequently on the uterosacral ligaments. Correlation between visual and histopathologic diagnosis was 41.4%-60.9%, indicating that visually detecting endometriosis intraoperatively is frequently inaccurate and normal-appearing peritoneum does not rule out disease. Complete peritonectomy may be warranted to prevent missing disease, but if not preferred, removal of the posterior cul-de-sac and left pelvic sidewall should be considered given these locations had the highest rates of endometriosis.

ORAL SESSION 2 - ENDOMETRIOSIS (11:30 AM — 12:35 PM)

12:22 PM

The Role of Endometriosis-Specific MRI Protocol in the Diagnosis and Management of Patients with Endometriosis-Related Pain

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Study Objective: Preoperative MRI is helpful in the surgical planning of patients with bowel endometriosis. As yet, there is no comparative study evaluating the significance of imaging on diagnosis, patient management and surgical outcomes. The primary goal of this study was to evaluate the impact of the endometriosis-specific MRI protocol (EsMRIp) established at the Cleveland Clinic on the diagnosis and management of new patients who present with endometriosis-related pelvic pain.
Design: Retrospective Cohort.
Setting: Academic Referral Center.
Patients or Participants: New patients >18yoa who presented with endometriosis-related pelvic from 2015-2019 were included. Pregnant patients, with known cancer or previous endometriosis diagnosis were excluded. Patient demographics, frequency of diagnostic laparoscopies (defined as absence of preoperative imaging and a surgery performed for the primary purpose of diagnosing endometriosis), treatment modality, operative time, EBL, intra- and postoperative complications, reoperation rates, and hospital length of stay were evaluated.
Interventions: To evaluate the impact of EsMRIp.
Measurements and Main Results: A total of 1,228 new patients were identified and 361 met study criteria. There were no significant differences in patient demographics. EsMRIp has 60.7% specificity and 80% specificity. Diagnostic laparoscopies were performed more often before EsMRIp (41.9% before vs 27.0% after, p = 0.036; OR 0.51, 95% CI 0.28-0.96). After EsMRIp, patients were more likely to receive medical therapy alone (50.4% vs. 25.5%) or combined surgical/medical therapy (17.9% vs. 7.3%) and less likely to be treated with surgery alone (16.1% vs. 24.4%) (p<0.001). There were no differences in rates of intraoperative non-gynecologic consultations, postoperative complications, readmissions, or reoperations before and after EsMRIp.
Conclusion: Our preliminary study revealed that institutional implementation of a preoperative EsMRIp was associated with fewer diagnostic laparoscopies and treatment of patients with surgery alone. More patients received medical alone and combined medical and surgical treatments after EsMRIp use. Further prospective studies to validate the above-mentioned trends and evaluate pain and fertility outcomes would be helpful.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

2:03 PM

The Effect of Patient Positioning on Ureteral Efflux during Intraoperative Cystoscopy: A Randomized Controlled Trial

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Study Objective: To identify the relationship between patient position during surgery and time to confirmation of ureteral patency on cystoscopy.
Design: Randomized controlled trial.
Setting: Academic tertiary care medical center.
Patients or Participants: A total of 91 adult women undergoing laparoscopic (either conventional or robotic) hysterectomy between February 2021 and February 2022 were randomized to control (n=46) or intervention (n=45). Exclusion criteria included known kidney disease or anomaly, current ureteral stent, pregnancy, malignancy, and recognized intraoperative urinary tract injury.
Interventions: Subjects in the control group were placed in a 0-degree supine position during cystoscopy. Subjects in the intervention group were placed in a 10−20-degree angle in reverse Trendelenburg (RT) during cystoscopy.
Measurements and Main Results: The primary outcome, the time to confirmation of bilateral ureteral patency, was measured at the time the second ureteral jet was viewed during intraoperative cystoscopy. There was no significant difference in mean time to confirmation (66.5 seconds in supine vs 67 seconds in RT, p=0.2), nor in total cystoscopy time (111 seconds in supine vs 104.5 seconds in RT, p=0.39). There were no significant differences in need for alternative modalities to aid in ureteral efflux visualization, delayed diagnosis of ureteric injury, and operative time. RT position seemed to have reduced the time to confirmation for the small group of patients with high confirmation time (>120 seconds).
Conclusion: Reverse Trendelenburg position does not change time to confirmation of bilateral ureteral patency compared to supine position. However, there may be benefit in position change if time to confirmation is >120 seconds.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

2:10 PM

Transition to Universal Same Day Discharge (SDD) in Times of Corona Virus Disease-19 (COVID): A Success Story

Cameo T.,[*,1] Jenkins J.,[2] Okuagu C.,[3] Huang R.,[3] Biest S.W.,[4] Ross W.T.,[5] Bardawil E.[1]. [1]Obstetrics and Gynecology, Washington University, St. Louis/Barnes-Jewish Hospital, St. Louis, MO; [2]Obstetrics and Gynecology, Mercy Hospital, St. Louis, MO; [3]Division of Clinical Research, Washington University in St. Louis, St Louis; [4]Obstetrics and Gynecology, Washington University, St. Louis/Barnes-Jewish Hospital, Saint Louis, MO; [5]Obstetrics and Gynecology, Washington University in St. Louis, St. Louis, MO*
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Study Objective: To evaluate success of universal SDD after minimally invasive hysterectomy. The COVID pandemic presented a unique scenario in which universal SDD was implemented abruptly across study institutions. This allowed for evaluation of patients with characteristics underrepresented in SDD literature: large uteri due to leiomyoma, obesity defined as body mass index (BMI) ≥30, and later surgical end time.
Design: Retrospective chart review with before/after study design comparing pre-COVID to COVID cohorts.
Setting: High-volume, academic and academic-affiliated medical centers. Due to COVID, in the after-cohort, surgery could only be scheduled if SDD was planned.
Patients or Participants: Patients undergoing benign, laparoscopic or robotic-assisted hysterectomy during two 11-month periods: September 2018-July 2019 and May 2020-March 2021.
Interventions: Minimally invasive hysterectomy performed by three Minimally Invasive Gynecologic Surgeons.
Measurements and Main Results: 320 patients met inclusion criteria, 107 pre-COVID and 213 COVID. Mean age for both groups was 44.9. Patients were predominately non-Hispanic Black (40.2% pre- vs. 34.7% COVID) and non-Hispanic White (55.1% pre- vs. 63.4% COVID). Mean BMI was 33 for both groups. Pre-COVID, 2% of patients were discharged same day, whereas COVID 92% were discharged same day. Mean specimen weight was 478.2gm vs. 436.3gm for the two periods.
In the COVID cohort, there was no difference in SDD success based on BMI (p 0.678), BMI <30 (49.5%), 30-39.9 (29.1%), 40-49.9 (15.3%), and ≥50 (6.1%). There was no difference in SDD success by specimen weight (p 0.077) stratified as <250gm (48.5%), 250-499gm (15.3%), or ≥500gm (36.2%). SDD success was not dependent on surgical end time (p 0.678) with end time stratified into ≤12:00 (45.4%), 12:01-14:59 (35.7%), and ≥15:00 (18.9%). There were no re-admissions in either cohort.
Conclusion: Abrupt transition to SDD is safe and feasible, including for patients with obese BMI and enlarged uterus. SDD success was not affected by later surgical end time.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

2:17 PM

Increase in Complications Following Vaginal Hysterectomy Compared to Laparoscopic Hysterectomy Using the ACS-NSQIP 2016 − 2019 Database

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Study Objective: We compare postoperative outcomes following laparoscopic hysterectomy (LH) and vaginal hysterectomy (VH) between 2016 and 2019 before and after controlling for obesity.
Design: A retrospective cohort study.
Setting: A national database study using ACS-NSQIP data from 2016 to 2019.
Patients or Participants: Women undergoing laparoscopic or vaginal hysterectomy between 2016 and 2019.
Interventions: Laparoscopic and vaginal hysterectomy.
Measurements and Main Results: Patient undergoing hysterectomy were identified by current procedural terminology (CPT) code. Cases with additional procedure of lymph node dissection were excluded to eliminate perioperative complications from surgeries for late-stage malignancy. Our primary outcome was a composite primary morbidity score including wound infection, sepsis, cardiovascular, thrombotic, pulmonary, and renal complications, readmission, return to the operating room, and death. Patient's undergoing LH and VH underwent propensity matching.

Comparisons were made with and without matching for BMI. Multivariable logistic regression analysis was performed.
After propensity matching that included BMI, we found that LH had a lower relative risk of 0.845 when compared to VH. After propensity matching that excluded BMI, we found that women with class III obesity had an increased relative risk of our composite primary morbidity of RR 1.153 (p = 0.044) and transfusion RR 1.484 (p = 0.001) when undergoing VH compared to LH.
We found that these results also held true for women without class III obesity. In women with BMI <40 (non-class III obesity), there was an increased relative risk of composite primary morbidity (RR 1.178; p = 0.001), return to OR (RR 1.634; p = 0.009), and transfusion (RR 1.646; 0.004) were all significantly higher when undergoing VH compared to LH.
Conclusion: We found an increase in perioperative complications following VH compared to LH, regardless of BMI. To our knowledge, this is the first large database study that suggests superiority of laparoscopic approach over vaginal approach to hysterectomy. This data highlights the progress and advancements of LH.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

2:24 PM

Institutional Trends in Hysterectomy Volume and Route of Surgery

Boone R.M.,[*,1] Polin M.,[1] Lim F.,[1] Hur C.,[2] May B.L.,[3] Arora C.,[1] Kim J.H.,[1] Hur H.C.[1]. [1]Obstetrics and Gynecology, Columbia University Irving Medical Center - New York Presbyterian Hospital, New York, NY; [2]Medicine, Columbia University Irving Medical Center - New York Presbyterian Hospital, New York, NY; [3]Herbert Irving Comprehensive Cancer Center, Columbia University Irving Medical Center - New York Presbyterian Hospital, New York, NY*
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Study Objective: To report the trends in hysterectomy volume and route of surgery at a single tertiary-care institution as the overall surgical landscape has shifted towards minimally invasive surgery.
Design: Retrospective cohort study.
Setting: Large academic medical center and affiliated community hospital.
Patients or Participants: All patients who underwent hysterectomy for benign and malignant indications between January 2010 and August 2021.
Interventions: N/A.
Measurements and Main Results: During the study period, there were 4722 hysterectomies performed at our institution: 4059 total (86%) and 663 supracervical (14%). Hysterectomy volume rose steadily from 2010 (306 annual cases), peaked in 2016 (483 annual cases), and remained relatively stable through 2021. The laparoscopic approach (conventional laparoscopic, robotic, and laparoscopic-assisted vaginal hysterectomy) was the most common route of hysterectomy overall (59.3%, n= 2799), followed by abdominal (30.2%, n= 1425) and vaginal (10.5%, n= 498) (P < .0001). Among the laparoscopic hysterectomies, there were 1546 robot-assisted laparoscopic hysterectomies (32.7%), 1097 conventional laparoscopic hysterectomies (23.2%), and 156 laparoscopic-assisted vaginal hysterectomies (3.3%). The distribution of route of hysterectomy changed from 2010 (44.8% abdominal, 41.2% laparoscopic, 14.1% vaginal) to 2021 (22.6% abdominal, 66.1% laparoscopic, 11.3% vaginal) (P < .0001). While abdominal hysterectomies constituted the largest proportion of cases in the beginning of our study period, the proportion dropped substantially by the end. Most notably, robot-assisted hysterectomies had the greatest increase from 6.2% of cases in 2010 to 41.1% of cases in 2021, while conventional laparoscopic hysterectomies slightly increased from 21.6% of cases to 24.3%, and vaginal hysterectomies slightly decreased from 14.1% to 11.3%.
Conclusion: There has been a large shift towards laparoscopic hysterectomies in the last 10 years, with the most substantial increase in robot-assisted laparoscopy. This trend reflects the increasing popularity of minimally invasive surgery in the gynecology field as a whole.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

2:31 PM

Vaginal Cuff Dehiscence Rates by Mode of Hysterectomy: An Update

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Study Objective: To report vaginal cuff dehiscence rates by mode of hysterectomy as the surgical landscape has shifted towards minimally invasive approaches.
Design: Retrospective cohort study.
Setting: Large academic medical center and affiliated community hospital.
Patients or Participants: 4722 patients who underwent hysterectomy for benign and malignant indications between January 2010 and August 2021.
Interventions: Hysterectomy patients and vaginal cuff dehiscences were identified by ICD and CPT codes.
Measurements and Main Results: There were 663 supracervical hysterectomies and 4059 total hysterectomies identified (1360 robot-assisted total laparoscopic hysterectomies [RA-TLH, 28.8%], 1107 total abdominal hysterectomies [TAH, 23.4%], 938 total laparoscopic hysterectomies [TLH, 19.9%], 498 total vaginal hysterectomies [TVH, 10.5%], and 156 laparoscopic-assisted vaginal hysterectomies [LAVH, 3.3%]). Supracervical hysterectomies were excluded from analysis. Among 4059 total hysterectomies, there were 15 vaginal dehiscences (0.37%). The dehiscence rate was highest after RA-TLH at 0.66% (n=9), followed by TLH at 0.32% (n=3), and TAH at 0.27% (n=3), with no dehiscences after TVH or LAVH; these differences were not statistically significant (p=0.31). Compared to TAH, the relative risk for dehiscence after RA-TLH was 2.44 (95% CI 0.66 − 9.00), and after TLH was 1.18 (95% CI 0.24 − 5.83), which were also not statistically significant. Patient characteristics were reviewed including age, hysterectomy indication, colpotomy type, suture type, medical comorbidities, and presentation. The mean time to dehiscence was 39 days (range 8 − 145). The most common trigger event was coitus (41%). Most dehiscences followed benign hysterectomies (88%).
Conclusion: Our study offers the largest representation of robotic hysterectomies to date. Although dehiscence rates were higher after laparoscopic hysterectomy (RA-TLH 0.66%, TLH 0.32%) compared to abdominal hysterectomy (TAH 0.27%), the differences were not significant. Our 0.66% RA-TLH dehiscence rate is much lower than previously reported in large studies (1.6 − 4.1%). While broad conclusions are limited, dehiscences are overall rare (0.37%). More research is needed to evaluate factors responsible for increased risk.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

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Vasopressin Injection Purse-String Ectopic Resection (VIPER) Technique for Laparoscopic Management of Cornual Ectopic

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Study Objective: To describe the VIPER technique for the laparoscopic management of cornual ectopic pregnancy; a technique that minimizes blood loss and mitigates risk of conversion to laparotomy.
Design: Case series.
Setting: High-volume, academic and academic-affiliated medical centers.
Patients or Participants: All patients presenting with cornual ectopic pregnancy managed surgically.
Interventions: Laparoscopic cornual resection by five Minimally Invasive Gynecologic Surgeons. The VIPER technique utilizes four ports (umbilical, left lower quadrant, and ipsilateral right sided) and a 30-degree laparoscope. After obtaining visualization, dilute vasopressin is injected into the myometrium adjacent to the pregnancy. The affected fallopian tube is disconnected distally. A purse-string stitch with unidirectional barbed suture is placed circumferentially around the pregnancy and cinched. This stitch achieves hemostasis regardless of rupture status. The needle is left attached, and a wedge resection of the cornua is performed with an ultrasonic device. The myometrial defect is repaired with the remaining suture.
Measurements and Main Results: 17 patients underwent laparoscopic cornuectomy between 2012 to 2022, with 7 found to be ruptured. The mean patient age was 30 years (range 20-41), mean body mass index was 31.4kg/m^2 (range 22-52), and mean gestational age was 8 weeks 6 days (range 5 weeks 6 days to 11 weeks 1 day). Patient risk factors included history of prior sexually transmitted infection (3 patients), in vitro fertilization (1 patient), and prior ectopic pregnancy (1 patient). The other twelve patients had no risk factors. The mean operative time was 107 minutes (range 50-229), with mean estimated blood loss of 41mL for non-ruptured and 412mL for ruptured ectopic pregnancies. The mean hemoperitoneum identified was 1117mL, (range 50mL to 3325mL). There were no conversions to laparotomy. 70.6% of patients were discharged on the day of surgery.
Conclusion: The VIPER technique is feasible and effective for the management of both non-ruptured and ruptured cornual ectopic pregnancy.

ORAL SESSION 3 - LAPAROSCOPY
(2:00 PM — 3:05 PM)

2:45 PM

Surgical Outcomes for Laparoscopic Hysterectomy Based on Surgeon Gender

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Study Objective: To compare surgical outcomes for laparoscopic hysterectomy between male and female gynecologic surgeons.
Design: Retrospective comparative cohort study.
Setting: Single-site academic tertiary care medical center.
Patients or Participants: A total of 494 women age >18 years old who underwent laparoscopic (either conventional or robotic) hysterectomy for benign indications between January 2019 and December 2020.
Interventions: A total of 560 laparoscopic hysterectomies were performed by 24 surgeons, which included 244 cases by 14 female surgeons and 316 cases by 10 male surgeons. Surgical outcomes were analyzed between the two genders.
Measurements and Main Results: Female surgeons performed significantly more traditional laparoscopic hysterectomies, while male surgeons performed more robotic hysterectomies. No statistically significant differences in the primary outcomes of hospital readmission rates, surgical complications, and postoperative complications were noted between the two groups. Also, no significant differences were noted in length of surgery, length of hospital stay, estimated blood loss, conversion to other surgical approach, emergency department visits in first 60 days, and 30-day mortality. Surgeon characteristics, such as sub-specialty, surgical volume, years since residency, and practice setting were obtained and controlled for.
Conclusion: Female and male gynecologic surgeons have equivalent surgical outcomes, suggesting they are equally capable of providing patients with high-quality surgical management. This is the first study to analyze the impact of surgeon gender on patient outcomes in gynecologic surgery.

ORAL SESSION 4 - RESEARCH
(2:00 PM — 3:05 PM)

2:03 PM

The Role of Resilience Among Women with Chronic Pelvic Pain

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Study Objective: In other chronic pain syndromes resilience has correlated with reduced disease severity and better overall function among chronic pain patients. Our objective was to investigate the impact of resilience on the number of missed days of work, days spent in bed and quality of life for women with chronic pelvic pain.
Design: Retrospective cross-sectional study of new patients presenting to tertiary care chronic pelvic pain consultative clinic.
Setting: A tertiary care teaching hospital.
Patients or Participants: Consecutive new patients (n=1143) at a tertiary care, outpatient chronic pelvic pain clinic between 2019 and 2021.
Interventions: All patients completed validated self-report measures of resilience, physical function, social role satisfaction, pain interference, pain severity, average pain rating, purpose and meaning before their first appointment.
Measurements and Main Results: Patient population was self-reported 78% white, 8.75% Black/African American, 3.14% Asian, and 0.87% Native American/Alaskan Native. Twenty eight percent were married, 31% single, 1.8% divorced, 2.9% partnered. The average age was 35.6 y.o. (SD, 9.8), average pain days per month was 19.0 (SD,9.6), average Brief Pain Inventory (BPI) severity was 19.6 (SD, 8.9) and average BPI interference 33.43 (SD, 20.6).
In a multivariate linear regression model controlling for age and average reported pain, a higher degree of resilience was positively correlated with Patient-Reported Outcomes Measurement Information System (PROMIS) physical function (Beta 0.205; p<.001), PROMIS social role satisfaction (Beta 0.223; p<.001) and PROMIS purpose and meaning (Beta 0.610; p<.001). However, resilience was negatively correlated with missed days of work (Beta -0.141; p<.001) and days spent in bed (Beta -0.183;p<.001).
Conclusion: Resilience appears to have a protective effect on patients' physical function, satisfaction and feeling of purpose, and engagement in work, irrespective of the severity of their pelvic pain. This offers a novel target for future research to investigate the effect of interventions to modify resilience would impact patient quality of life.

ORAL SESSION 4 - RESEARCH
(2:00 PM — 3:05 PM)

2:10 PM

The Impact of Surgeon Volume on Hysterectomy Risk: A Concentration Curve Analysis

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Study Objective: To evaluate the relationship between surgeon volume and the outcomes of hospital readmission and return to the operating room in women who underwent hysterectomy.
Design: Retrospective cohort study
Setting: Multicenter community healthcare system
Patients or Participants: 2,730 women who underwent hysterectomy from July 1, 2015, to June 30, 2019. Patients of the resident practice and hysterectomies for obstetric indications were excluded.
Interventions: Surgeon volume greater than 25 hysterectomies per year.
Measurements and Main Results: A concentration curve was used to evaluate the impact of annual surgeon hysterectomy volume on 30-day all-cause readmission or return to the operating room. The concentration curve suggested a disproportionate number of complications attributed to lower volume surgeons. The peak difference between the curve and the line of equality was used to identify a surgeon volume of 25 hysterectomies per year as the cutoff between low- and high-volume surgeons. Demographics and outcomes were compared using Chi-squared and Mann-Whitney U tests where appropriate. Logistic regression was used to correct for confounders. Low-volume surgeons had a higher rate of reoperation or readmission within 30 days compared to those who underwent surgery by high-volume surgeons (4.9% vs 2.9%, *P*=0.02). After adjusting for confounders, the adjusted odds ratio was 1.67 (95% CI: 1.03 - 2.81). High-volume surgeons performed a greater percentage of laparoscopic hysterectomies (75% vs 45%), had a shorter length of stay (0.4 days vs 1.2 days, *P*<0.00001), and a greater total operating room cost ($9,827 vs $9,551, *P*=0.005).
Conclusion: High-volume surgeons performing more than 25 hysterectomies per year had lower rates of reoperation or readmission within 30 days compared to low-volume surgeons. Concentration curve analysis can be useful in determining if outcome differences can be seen based on volume, and helpful in selecting potential cutoffs to analyze surgeon groups by volume. Surgeon grouping is likely not bimodal, and differences are likely to be detectable at many different volume levels.

ORAL SESSION 4 - RESEARCH
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Incidence and Risk Factors for 30 Day Reoperation in Benign Hysterectomy

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Study Objective: To determine the incidence and risk factors of 30-day reoperation in benign hysterectomy.
Design: The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database from 2014 to 2020 was queried for all patients who underwent hysterectomy for benign indication. Our primary outcome was incidence of 30-day reoperation. Secondary outcomes included risk factors for reoperation such as route of surgery, body mass index (BMI), infection present at time of surgery, surgeon specialty, and preoperative comorbidities.
Setting: Hospitals participating in the NSQIP program.
Patients or Participants: Patients were identified in the ACS-NSQIP database using Current Procedural Terminology (CPT) codes.
Interventions: N/A.
Measurements and Main Results: 334,756 hysterectomies were analyzed after incorporating inclusion and exclusion criteria. 4,988 patients (1.5%) underwent reoperation or died within 30 days of index procedure. The most common CPT codes for reoperation included exploratory laparotomy (12.3%), gynecologic repair (12.5%) and wound debridement/repair (9.2%). On multivariable analysis, ASA class 3 or higher (Class 3 vs. 2 OR 1.31, p<0.0001; Class 4 vs. 2 OR 2.49, p<0.0001), smoking (OR 1.17, p=.0006), hypertension requiring medication (OR 1.17, p=.0001), insulin dependent diabetes (OR 1.74, p=.0001), and surgical site infection present at the time of surgery (OR 8.39,p<.0001) were associated with an increased risk of the primary outcome. Vaginal approach to surgery was associated with an increased risk of 30-day reoperation when compared to laparoscopic approach (OR 1.47, p=.0001). Preoperative hematocrit, BMI, race, and surgeon specialty were not significant risk factors for 30-day reoperation.
Conclusion: This is the largest study in gynecologic surgery investigating the incidence and risk factors for 30-day reoperation in benign

hysterectomy. The overall incidence of 30-day reoperation in benign hysterectomy is low. Certain preoperative comorbidities, infection present at time of surgery, and route of surgery are associated with increased risk of 30-day reoperation.

ORAL SESSION 4 - RESEARCH
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2:24 PM

Venous Thromboembolism after Abdominal and Minimally Invasive Large Specimen Hysterectomy

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Study Objective: To investigate the incidence of venous thromboembolism (VTE) in patients undergoing large specimen hysterectomy for benign indications. To evaluate the impact of route of surgery and operative time in the development of VTE in this population.
Design: Cohort study of targeted hysterectomy data prospectively collected from the American College of Surgeons National Surgical Quality Improvement Program involving over 500 hospitals across the United States.
Setting: National Surgical Quality Improvement Program Database.
Patients or Participants: Women aged 18 years or older undergoing hysterectomy for benign indications between 2014 and 2019. Patients were further classified into four groups according to uterine weight: <100g, 100-249g, 250g-499g, and specimens >500g.
Interventions: Current Procedural Terminology codes were used to identify cases. Variables including age, ethnicity, body mass index (BMI), smoking status, diabetes, hypertension, blood transfusion, and American Society of Anesthesiologists (ASA) classification system scores were collected. Cases were stratified by route of surgery, operative time, and uterine weight.
Measurements and Main Results: A total of 122,408 patients were included in the study, of which 28,397 (23%) underwent abdominal, 75,490 (62%) laparoscopic, and 18,521 (15%) vaginal hysterectomy. The VTE rate for large specimen hysterectomy (>500g) was 0.64%. After adjusting for confounders, patients who underwent minimally invasive hysterectomy had a lower rate of VTE for the laparoscopic (aOR 0.62; CI:0.47-0.81) and vaginal (aOR 0.46; CI:0.31-0.68) routes when compared to open surgery. Total operative time was independently associated with postoperative VTE (>120min, aOR 1.85; CI:1.5-2.27). Uterine weight even for specimens >500g was not significantly associated with the rate of VTE. Interestingly, only 30% of the surgeries with uterine weight above 500g were done with a minimally invasive route.
Conclusion: The occurrence of VTE after benign large specimen hysterectomy is rare. The rate of VTE is higher with longer operative times and is lower with minimally invasive approaches even for markedly enlarged uteri.

ORAL SESSION 4 - RESEARCH
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Trends in the Gender of First and Senior Authors of Original Research Publications in the Journal of Minimally Invasive Gynecology

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Study Objective: To assess the trend in the proportion of female first and senior authors in the Journal of Minimally Invasive Gynecology (JMIG) over time.
Design: Retrospective cohort study.
Setting: Original research publications in JMIG in 2005, 2010, 2015, and 2020.
Patients or Participants: First and senior (last) authors of publications.
Interventions: The likely gender of first and senior authors were determined through a validated algorithm used widely in medical publishing (genderize.io) and, when necessary, follow-up internet search.
Measurements and Main Results: We confirmed the likely gender of first and senior authors from 316/355 publications. Five articles had one author (all male).
The percentage of articles with female first authors increased over time, with 7%, 30%, 43%, and 53% articles having female first authors in 2005, 2010, 2015, and 2020. When compared to 2005, the odds of female first authorship were significantly higher at the latter two timepoints (2010: OR 2.6, p=0.06; 2015: OR 4.7, p=0.001; 2020 OR 6.8, p<0.001).
The percentage of articles with female senior authors also increased over time, with 20%, 24%, 22%, and 36% of articles having female senior authors. However, when compared to 2005, the odds of female senior authorship were not significantly higher at each time point (2010: OR 1.2, p=0.67; 2015: OR 1.1, p=0.91; 2020: OR 2.1, p=0.08).
Overall, 43 (14%) of articles had female-female, 42 (14%) had male-female, 83 (27%) had female-male, and 143 (46%) had male-male coauthors. Articles with female senior authors were significantly more likely to have female first authors (43/85, 51%) than articles with male senior authors (83/226, 37%, p=0.02).
Conclusion: Women have made significant gains as first but not senior authors in Original Research publications in JMIG. Future exploration of this phenomenon will correlate gender of authors with the gender breakdown of the field. Intentional monitoring of the gender diversity of authors may contribute to increased equity in medical publishing.

ORAL SESSION 4 - RESEARCH
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2:38 PM

Racial and Ethnic Disparities in Utilization of Minimally-Invasive Hysterectomy

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Study Objective: Minimally-invasive hysterectomy has significant advantages over laparotomy, including decreased complications, faster recovery time, and improved patient satisfaction. Studies have reported an increased risk of open surgery among Black patients compared with white patients. Some have proposed that patient factors, such as BMI, fibroids, and uterine weight, may explain this difference. We sought to explore these influences using a large national data set.
Design: Retrospective cohort.
Setting: 722 academic or community-based hospitals participating in the American College of Surgeons National Surgical Quality Improvement Program.
Patients or Participants: Patients undergoing hysterectomy from 2014-2020.
Interventions: Patients undergoing benign hysterectomy were identified by CPT code; 48.7% had a precise uterine weight. We used log-binomial regression to estimate risk ratios (RR) and 95% confidence intervals (CI).

Measurements and Main Results: Among 360,460 patients who underwent benign hysterectomy, 56.4% were white, 14.1% Black, 10.6% Hispanic and 18.9% other or unknown race or ethnicity. Black patients were twice as likely as white patients to undergo open hysterectomy than minimally-invasive (RR 2.19 [95% CI 2.16-2.23]). Hispanic patients and patients with other/unknown race or ethnicity also were more likely than white patients to undergo open hysterectomy (Hispanic RR 1.48 [95% CI 1.45-1.51], other/unknown RR 1.75 [95% CI 1.73-1.78]). These estimates were unchanged when controlling for age, BMI, diabetes and smoking. When controlling for uterine weight among 175,388 patients, the RRs were attenuated, though still significantly higher for all racial and ethnic groups compared to white patients (Black RR 1.29 [95% CI 1.26-1.31], other/unknown RR 1.33 [95% CI 1.31-1.36], Hispanic RR 1.29 [95% CI 1.26-1.32]).
Conclusion: Race and ethnicity appear to influence route of hysterectomy independent of factors such as BMI and uterine weight. Possible other influences include differing access to skilled surgeons who can provide complex minimally-invasive surgery, and racial discrimination by providers or health systems.

ORAL SESSION 4 - RESEARCH
(2:00 PM — 3:05 PM)

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A Comparison Study Quantifying Environmental Impact of All Surgical Modalities of Hysterectomies

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Study Objective: Compare carbon dioxide emissions generated from operating room waste from all types of hysterectomies. Improving provider awareness on the environmental impact of hysterectomies may facilitate interventions to minimize our carbon footprint.
Design: A prospective cohort study was conducted, including patients who had a hysterectomy for any indication. Surgical waste in pounds (lbs), procedure data, and patient demographics was collected for each case. The formula below was used to identify the emissions generated for each procedure:
CO2 emissions = Waste in pounds (lbs) x 1 short ton/2000 lbs x EPA emission factor (kg CO2 per short ton) x global warming potential
Setting: A 305-bed Level II Trauma center and academic teaching hospital, 11/2021 − present.
Patients or Participants: A total of 81 women ≥ 18 years of age underwent a scheduled hysterectomy (robotic assisted, laparoscopic, vaginal, abdominal) for benign or malignant indications at one institution. We excluded women < 18 years of age and emergent hysterectomies (i.e., postpartum hysterectomy). Data collection is ongoing with the goal of reaching a sample size of 100.
Interventions: Waste that was generated for every hysterectomy was weighed by the Primary Investigator.
Measurements and Main Results: Among the 81 cases analyzed, there was no significant difference between groups in age, ethnicity, and BMI. The total waste generated by each type of hysterectomy ranges from lowest (vaginal, 3 lbs.) to highest (robotic, 46 lbs.). CO2 emissions was significantly higher for robotic hysterectomies (57%, <0.0001) when compared to the other types. 100% of robotic hysterectomy waste contributed more than the mean CO2 emission of our sample. There was no significant association between duration of surgical case and amount of waste generated. Additional analysis in progress.
Conclusion: Robotic hysterectomies were found to generate a statistically significant majority of CO2 emissions. Additional studies are needed to determine the environmental impact and strategies to reduce our carbon footprint.

ORAL SESSION 4 - RESEARCH
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Differences in Route of Benign Hysterectomy in Black Patients for Abnormal Uterine Bleeding with Exclusion of Fibroid Diagnosis

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Study Objective: To investigate whether racial disparities still exist in rates of minimally invasive hysterectomy (MIH) performed for abnormal uterine bleeding (AUB) when fibroid diagnosis is excluded.
Design: Cross-sectional survey with a target population of all ambulatory discharges in the United States.
Setting: 2019 Nationwide Ambulatory Surgery Sample (NASS) and National Inpatient Sample (NIS).
Patients or Participants: Female patients age ≥18 years undergoing hysterectomy for primary indication of abnormal uterine bleeding (AUB), excluding malignancy and uterine fibroids.
Interventions: N/A.
Measurements and Main Results: A multivariate logistic regression model with appropriate weighting, primary sampling units and strata was utilized. Primary outcome was odds ratio (OR) of abdominal hysterectomy (AH) vs MIH (vaginal/endoscopic) in Black patients compared to white patients. Of 487,008 (SE=11,530) hysterectomies performed for benign indications, 64,681 (SE=1,483) were AH (13.3%), 422,327 (SE=10,047) were MIH (86.7%). After filtering the survey design dataset for hysterectomies performed primarily for AUB using the international classification of diseases 10th edition, and further excluding those with an associated code for uterine fibroids, the sample size was 75,838 (SE=2,103). Of these, MIH: 68,206 (SE=1,812) (89.9%) and AH: 7,632 (SE=291) (10.1%). After controlling for comorbidities, demographic data, hospital, regional and payer factors, the OR for a Black patient to undergo AH vs MIH for all benign diagnoses was 2.7 (CI-2.44,2.98; p<0.001). For Black patients undergoing benign hysterectomy for AUB excluding fibroids, this trend persisted though was less extreme with OR=1.38 (CI-1.12,1.70; p<0.001).
Conclusion: For the primary indication of AUB excluding malignancy and fibroids, Black patients were still 38% more likely than white patients to undergo AH. It has previously been proposed that rates of MIH are lower in Black patients due to a larger prevalence of fibroids, and by extension, larger uterine sizes. Given that we excluded fibroids and still found a difference in MIH rates, our study suggests there may be other factors leading to disparity in surgical route.

ORAL SESSION 5 - NEW INSTRUMENTATION
(3:15 PM — 4:20 PM)

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Artificial Intelligence Vision Based Analysis and Key Steps Identification Feasibility Study in Laparoscopic Hysterectomies

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Study Objective: The analysis of surgical videos and key steps identification using artificial intelligence (AI) holds great promise for the future of healthcare. In this paper, we present a novel computer vision algorithm for surgical steps identification in laparoscopic hysterectomy.
Design: A retrospective analysis of surgical videos of laparoscopic hysterectomies.
Setting: Gynecological department in a tertiary hospital with an average of 6500 procedures a year.
Patients or Participants: 190 laparoscopic hysterectomies from September 2020 to April 2022.
Interventions: Artificial intelligence-driven surgical platform that uses advanced computer vision technology to capture video data during all surgeries, de-identify it, and upload it to a secure cloud infrastructure.
Measurements and Main Results: A total of 190 full-length hysterectomies videos were manually annotated with sequential steps of surgery. Of these, 115 cases served as a training dataset for algorithm development, 28 cases were used for internal validation, and 47 were used as a separate testing cohort for evaluating algorithm accuracy. Concordance between AI-enabled automated video analysis and manual human video annotation was 92%. Algorithm accuracy was highest for the vaginal vault closure step (97%) and lowest for the adhesiolysis step (71%).
Conclusion: A variety of AI applications are expanding in clinical systems, from databases to intraoperative video analysis. The unique nature of surgical practice puts surgeons in a strong position to contribute to the next phase of AI, focused on real-time clinical decision support designed to optimize surgeon workflow and patient care. This work validates the ability to annotate the different steps of hysterectomy using an AI vision-based algorithm. Automated surgical video analysis has immediate impact in this field and the implementation of such a system holds enormous promise for future surgical education and improvement.

ORAL SESSION 5 - NEW INSTRUMENTATION
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Preoperative Modeling of the Rectovesicle Space and Pelvis in the Surgical Treatment of Patients with Uterine and Vaginal Aplasia

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Study Objective: To develop a differentiated approach to the choice of the method of peritoneal colpopoiesis based on anatomical features using three-dimensional computer-assisted technologies.
Design: Prospective Level II study.
Setting: Department of Operative Gynecology, National Medical Research Center for Obstetrics,
Gynecology and Perinatology, Moscow, Russia.
Patients or Participants: 32 patients with utero-vaginal aplasia (MRKH), who were hospitalized in the Department of Operative Gynecology for surgical treatment in 2021.
Interventions: We performed an MRI of the pelvis following a newly developed protocol and obtained three-dimensional (3D) images of the pelvis for each patient with uterine and vaginal aplasia. Layer-by-layer thin-slice modeling and segmentation of the anatomical structures of the pelvis were then conducted using the appropriate software. All patients underwent laparoscopic or laparo-vaginal peritoneal colpopoesis, and the intraoperative data were compared with a previously created, personalized three-dimensional model.
Measurements and Main Results: The detail obtained with thin-slice 3D computer modeling correlated precisely with intraoperative findings and allowed for additional detail. The average layered thickness of the rectourethral and rectovesical spaces was 5.5 mm ± 3.2 mm; in two patients (6.3%) the thickness was less than 2 mm. Data on topographic positioning of the single ureters (4 patients) resulted in precise preoperative planning. The exact position of 2-layered Denonvilliers' fascia in relation to the rectum and other structures was clearly seen in all patients. Precise preoperative modeling of vascular, muscular, and neurologic elements in the lateral aspects of the recto-vesicular allowed for effective data-based intraoperative navigation.
Conclusion: The findings of 3-D thin-slice computer modeling of the pelvis in patients with the uterine and vaginal aplasia correlated precisely with the intraoperative findings. Its use enhances the precision of preoperative evaluation, optimizes surgical planning, and allows for data-based intraoperative navigation during colpopoesis. This modeling is especially useful in surgical planning in patients with complex pelvic anatomy.

ORAL SESSION 5 - NEW INSTRUMENTATION
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The Minitouch Office Endometrial Ablation Procedure: Results from a Prospective, Multicenter, Pivotal Clinical Trial

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Study Objective: To evaluate safety and effectiveness of the Minitouch Office Procedure for treatment of heavy menstrual bleeding.
Design: Prospective, multicenter, single-arm, open label, pivotal clinical trial. Follow-up assessments were conducted at 24 hours, 2 weeks, 3-, 6-, and 12-months post-procedure.
Setting: Physician's Office - 5 US sites.
Patients or Participants: 114 premenopausal women with a history of heavy menstrual bleeding and a Pictorial Blood Loss Assessment (PBLAC) score >150. The demographics were as follows - mean ± SD (range): age 41.6 ± 4.6 (30-50) years, parity 2.3 ± 1.1 (0-5), sounding depth 8.6 ± 1.1 (7.0-11.0) cm, uterine cavity length 5.2 ± 0.8 (4.0-7.0) cm, and endometrium thickness 9.5 ± 4.2 (3.0-23.4) mm.

Interventions: All 114 Minitouch Office Procedures were performed without endometrial pretreatment or period timing. Cervical dilation was not required in 93% of the procedures since the device diameteris slim at 3.8mm. The procedure does not require a cavity integrity test or cavity sealing.
Measurements and Main Results: The primary effectiveness endpoint was reduction of menstrual blood loss to a PBLAC score ≤75 which was met by 90% (102/114) of the subjects, with 52% (59/114) of the subjects reporting amenorrhea.
Pre-procedure, 47% of the subjects reported their bleeding limiting work either 'quite a bit' or 'extremely', and an additional 30% reported 'moderately'. Post-procedure, the percentages reduced to 0% and 3% respectively.
81% (92/114) of the subjects were discharged within 30 minutes post-procedure, with an average pain score of 2.6 (scale 0 to 10) at discharge.
There were no device or procedure-related serious adverse events.
Conclusion: The Minitouch Office Endometrial Ablation procedure is safe and effective. It can be performed in a physician's office, does not require endometrial pretreatment or period timing, and has a short recovery period.

ORAL SESSION 5 - NEW INSTRUMENTATION
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Effect of Fractional CO_2 Laser vs Sham Treatment on Symptom Severity of Postmenopausal Vaginal Symptoms: A Randomized Clinical Trial

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Study Objective: To determine the efficacy of fractional CO_2 laser for treatment of vaginal symptoms associated with menopause.
Design: This study is a double-blind, randomized, sham-controlled trial with 12-month follow-up. Enrollment commenced September 19, 2016, with final follow-up June 30, 2020.
Setting: Outpatient clinic in a single, tertiary referral hospital.
Patients or Participants: Participants were postmenopausal women with vaginal symptoms substantive enough to seek medical treatment. Of 232 participants approached, 90 were recruited.
Interventions: Three treatments using a fractional micro-ablative CO_2 laser system performed 4-8 weeks apart, with 43 women randomized to the laser group and 42 to the sham group.
Measurements and Main Results: The coprimary outcomes were symptom severity assessed by Visual Analog Scale (VAS and Vulvovaginal Symptom Questionnaire (VSQ) at 12 months. Secondary outcomes including quality of life, Vaginal Health Index (VHI) and vaginal histology were assessed.
From 85 participants randomized (mean age 57 (SD 8) years), 78 (91.7%) completed 12-month follow-up. From baseline to 12 months between CO_2 laser and sham groups, there was no significant difference in symptom severity (VAS score for overall vaginal symptoms: laser -17.2 vs sham -26.6 (difference 9.4 [95%CI -28.6, 47.5]); VAS score for single most severe symptom: laser -24.5 vs sham -20.4 (difference -4.1 [95%CI -32.5, 24.3]); or VSQ score: laser -3.1 vs sham -1.6 (difference -1.5 [95%CI -5.9, 3.0]). There were no significant differences in quality of life, VHI or histological comparisons between laser and sham treatment. There were 16 adverse events in the laser group and 17 in the sham group including vaginal pain/discomfort (44% vs. 68%), spotting, discharge or lower urinary symptoms. No severe adverse events were reported in either group.
Conclusion: Among women with postmenopausal vaginal symptoms, treatment with fractional CO_2 laser vs sham treatment did not significantly improve vaginal symptoms after 12 months.

ORAL SESSION 5 - NEW INSTRUMENTATION
(3:15 PM — 4:20 PM)

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Individualized Medicine Using 3D Printing Technology in Gynecology: A Scoping Review

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Study Objective: Developments in 3-dimensional (3D) printing technology has increased production of high quality, affordable 3D printed models, and the investigation of 3D printing in the medical literature. The objective of this study was to outline the clinical applications of individualized 3D printing in gynecology through a scoping review.
Design: Four medical databases (Medline, Embase, Cochrane CENTRAL, Scopus) and grey literature were searched for publications meeting eligibility criteria up to May 2021. Publications were included if they were published in English, had a gynecologic context, and involved production of patient specific 3D printed product(s). Studies were manually screened and assessed for eligibility by two independent reviewers (CC,TF) and data was extracted using pre-established criteria.
Setting: NA.
Patients or Participants: NA.
Interventions: NA.
Measurements and Main Results: Overall, 32 studies (15 abstracts,17 full text articles) were included in the scoping review. Most studies were either case reports (12/32,38%) or case series (15/32,47%). Gynecologic sub-specialties in which the 3D printed models were intended for use included: gynecologic oncology (21/32,66%), benign gynecology (6/32,19%), pediatrics (2/32,6%), urogynecology (2/32,6%) and reproductive endocrinology and infertility (1/32,3%). Twenty studies (63%) printed 5 or less models, 6/32 (19%) printed greater than 5 (up to 50 models), the remainder did not specify. Types of 3D models printed included: anatomical models (11/32,34%), medical devices, (2/32,6%) and template/guide/cylindrical applicators for brachytherapy (19/32,59%).
Conclusion: Our scoping review has outlined novel clinical applications for individualized 3D printed models in gynecology. To date, they have mainly been used for production of patient specific 3D printed brachytherapy guides/applicators in patients with gynecologic cancer. However, individualized 3D printing shows great promise for utility in surgical planning, surgical education, and production of patient specific devices, across gynecologic subspecialties. Data on the topic of individualized 3D printing in gynecology is limited by low quality study design, small sample size and non-standardized reporting, which should be the focus of future studies.

ORAL SESSION 5 - NEW INSTRUMENTATION
(3:15 PM — 4:20 PM)

3:53 PM

Investigation of 3D Smart MRI in Surgical Efficiency and Planning

*Fenster T.B.,**[1] *Cantillo E.,*[2] *Mosadegh B.,*[3] *Havryliuk Y.,*[4] *Shin J.H.,*[5] *Musselman K.,*[5] *Schiffman M.,*[6] *Nchako C.,*[7] *Caprio A.*[8]. [1]*Obstetrics and Gynecology, Weill Cornell Medicine, New York, NY;* [2]*University of Vermont Medical Center, Burlington, VT;* [3]*radiology, Weill Cornell Medical Center, NY, NY;* [4]*OBSTETRICS AND GYNECOLOGY, Weill Cornell Medical Center, New York, NY;* [5]*Weill Cornell Medicine, New*

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*Corresponding author.

Study Objective: The overall purpose of this study is to determine the surgical outcomes and patient reported experience associated with completing a 3D Smart MRI prior to surgery as opposed to completing a conventional 2D MRI prior to surgery.
Design: This study is a prospective randomized trial comparing outcomes of uterine myomectomies as determined by the length of the case, quantitative blood loss and conversion rate to laparotomy when standard MRI abdomen and pelvis screening is performed pre-surgery (control) as opposed to 3D Smart MRI rendering of their specific anatomy adapted from the coronal, sagittal and axial 2D MRI imaging (intervention).
Setting: University Hospital Setting.
Patients or Participants: Pilot study population will consist of 20 female patients who will undergo a robot-assisted myomectomy with 10 patients receiving conventional pre-surgical 2D MRI and 10 patients receiving 3D Smart MRI.
Interventions: The primary objectives of this study are to compare the effects of conventional presurgical MRI and 3D Smart MRI use on the execution of uterine leiomyoma resection surgeries by evaluating operative times, conversion rates, and blood loss. A secondary objective is to compare patient satisfaction and perceived understanding of surgery between both arms during pre- and post-surgical counseling. A tertiary objective to compare provider perceived experience between both arms using a post-surgical
questionnaire.
Measurements and Main Results: The first 20 patients will be considered as a pilot phase to determine if the use of Smart 3D MRI can measurably improve operative speed and decrease complications such as blood loss or conversion to a more invasive surgical opening. If the Smart 3D MRI group is similar to or better than the conventional pre-surgical MRI group with respect to the primary outcomes, the study will proceed to evaluate 90 patients in total (45 patients per MRI modality group).
Conclusion: To be finalized and presented at AAGL in December 2022

ORAL SESSION 5 - NEW INSTRUMENTATION (3:15 PM — 4:20 PM)

4:00 PM

Self-Cleaning Trocars/Laparoscopic Port Add-on for Surgical Camera Lens

Tran T.,[*,1] *Kim T.G.,*[2] *Fuegner K.,*[2] *Aritharan P.,*[2] *Dovgan M.*[1].
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*Corresponding author.

Study Objective: During laparoscopic surgeries, the camera is visually impaired by blood, debris, and condensation. The process of cleaning includes removing the laparoscope out of the patient and then using cloth and/or lens defogging solution. Thus, there is a need for a device that will clean the camera without removing it from the patient to decrease surgical time, risk of contamination, and cost.
Design: We have developed a prototype of a disposable lens-cleaning compartment that is attached onto a disposable trocar to allow surgeons to clean the lens without removing the laparoscope from the patient's body. The cleaning compartment is made of three layers of plastic - upper, lower, iris diaphragm covered with synthetic cleaning material, and O rings on either side. The cleaning compartment will sit between the cap and the hollow tube of the trocar. This device will clean the lens by having the surgeon use a back-and-forth motion onto the compartment until the lens has visibility
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: Benchtop model of glass lens were clouded with egg, chocolate syrup, .25% agar and 1x DPBS saline (control) and cleaned with synthetic material for five full rotation of the laparoscope. Clarity was quantified through image J by filtering for black and white ratio. A two-way ANOVA showed significant differences with solution, time, and the interaction of the two. Solidwork stress simulation demonstrate that the device can withstand around 270N/60 lbs of force before breakage. Compartment was assessed with and without O rings and airtightness was noted with the use of O rings.
Conclusion: By adding a cleaning compartment to pre-existing trocars, laparoscopic surgery time will decrease as there is no need to remove the laparoscope from the patient. Future work would include testing product within the OR to further validate the product design to meet surgeons' need.

ORAL SESSION 5 - NEW INSTRUMENTATION (3:15 PM — 4:20 PM)

4:07 PM

Laparoscopic Modified McCall Culdoplasty

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Study Objective: This video's objective is to instruct on a method to laparoscopically perform a McCall Culdoplasty at time of laparoscopic hysterectomy to decrease the risk of apical prolapse.
Design: N/A.
Setting: This was performed in an OR setting with the patient in lithotomy and Trendelenburg.
Patients or Participants: This is a technique appropriate for patients undergoing laparoscopic hysterectomy.
Interventions: N/A.
Measurements and Main Results: This video review the indication of performing the McCall procedure laparoscopically. It also demonstrates each step of the procedure and finally discusses possible complications and trouble shooting with respect to the procedure.
Conclusion: This video reviews the surgical technique of performing a modified McCall Culdoplasty with traditional laparoscopy at time of hysterectomy in attempts to reduce future apical prolapse.

ORAL SESSION 6 - REPRODUCTIVE SURGERY
(3:15 PM — 4:20 PM)

3:18 PM

Pregnancy Outcomes Following Medical Versus Surgical Treatment of Ectopic Pregnancy in Ontario

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*Corresponding author.

Study Objective: To compare the live birth rate following medical versus surgical treatment of tubal ectopic pregnancy (TEP) in Ontario. Secondary outcome was the recurrence of TEP.
Design: This is a retrospective population-based cohort study using validated Ontario health administration data.
Setting: Ontario, Canada.
Patients or Participants: This study included 17, 090 patients treated for TEP in Ontario, Canada between January 1, 2008, and December 31, 2019.
Interventions: Medical management with methotrexate versus surgical management with laparoscopic salpingectomy or salpingostomy.
Measurements and Main Results: Type of treatment was determined using diagnostic and billing codes from Ontario health administrative databases. Of the 17,090 cases of TEP In Ontario, 8,204 were treated medically, 8,737 surgically and 149 received both. Baseline characteristics were compared using standardized differences. Patients treated with medical management were slightly older at the time of first pregnancy/delivery and less parous at time of the ectopic pregnancy, with more patients treated surgically having a history of PID. Patients receiving medical management had a 51.6% future live birth rate, compared to 45.1% with surgical management and a recurrent TEP rate of 7.4% compared to 6.4% respectively. After controlling for age at first TEP, previous TEP, PID, Endometriosis, previous pelvic surgery, parity, comorbidity score and socioeconomic score, multivariable regression analysis demonstrated that patients receiving medical management had a greater odds of future live birth rate compared to surgical management (OR 1.29, $p<0.001$). The repeat ectopic pregnancy rate was also higher with medical management compared to surgical (OR 1.2, P=0.004).
Conclusion: Women treated medically for TEP are at significantly increased odds to have a future live birth, but more likely to have a recurrent TEP, compared to women treated surgically.

ORAL SESSION 6 - REPRODUCTIVE SURGERY
(3:15 PM — 4:20 PM)

3:25 PM

The Role of Minimally Invasive Intrauterine Surgery in Improving the Results of IVF Programs

Kozachenko I.F.,[1,] Smolnikova V.Y.,[1] Adamyan L.V.,[2] Stepanian A.A.[3]. [1]V.I. Kulakov National Medical Research Center for Obstetrics, Gynecology and Perinatology, Ministry of Healthcare of Russia, Moscow, Russian Federation; [2]V.I. Kulakov National Medical Research Center for Obstetrics, Gynecology and Perinatology, Ministry of Healthcare of Russia, Moscow, Russia; [3]Academia of Womens Health and Endoscopic Surgery, Atlanta, GA*
*Corresponding author.

Study Objective: to determine the intrauterine pathology in women preparing for IVF and to evaluate the impact of minimally invasive intrauterine interventions on the success of subsequent IVF programs.
Design: prospective observational study, Level II, Canadian Task Force.
Setting: Department of Operative Gynecology, National Medical Research Center of Obstetrics, Gynecology and Perinatology named after V.I. Kulakov, Moscow, Russia.
Patients or Participants: 600 patients preparing for IVF program underwent diagnostic hysteroscopy.
Interventions: All patients underwent diagnostic or operative hysteroscopy on the 5th-8th day of the menstrual cycle. The patients included in the study received infertility treatment following the IVF protocol with controlled ovarian stimulation.
Measurements and Main Results: 36% of the examined patients had normal endometrial morphology, 42.7% had benign endometrial pathology (23.3% had chronic endometritis, 18.3% had endometrial hyperplastic processes), 5.5% of women had atypical hyperplasia and endometrial cancer. 15.9% had other intrauterine pathology. The average duration of infertility was 5.8±0.6 years, 42% of women could not achieve reproduction for more than 5 years, 59.8% had a history of ineffective IVF programs. Based on analysis of data 1 year after embryo transfer, pregnancy occurred in 62% of women. 51% of pregnancies ended in successful childbirth.
Conclusion: Intrauterine pathology that required hysteroscopic evaluation and treatment was observed in 58.5% of women with infertility. Surgical and subsequent conservative treatment of intrauterine pathology contributed to a reduction of the frequency of pregnancy losses (OR 1.4, 95%CI 1,0-2,0), as well as an increase in the frequency of pregnancies that ended in childbirth (OR 1.7, 95% CI 1,2-2,6), on average 1.5 times.

ORAL SESSION 6 - REPRODUCTIVE SURGERY
(3:15 PM — 4:20 PM)

3:32 PM

Effects of Fibrin Sealant Compared with Suturing or No Hemostatic Intervention on Ovarian Reserve in Patient Undergoing Ovarian Cystectomy

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Study Objective: Determine the effect of Tisseel, a fibrin based hemostatic agent, versus no hemostatic interventions or suturing of the ovary after ovarian cystectomy on ovarian function measured by antral follicle count (AFC) and anti-Mullerian hormone (AMH).
Design: Retrospective cohort study.
Setting: Private practice at large tertiary care hospital.
Patients or Participants: Women who underwent laparoscopic ovarian cystectomy from October 2017 through December 2021.
Interventions: Tisseel versus no hemostatic interventions or suturing of the ovary after laparoscopic ovarian cystectomy.
Measurements and Main Results: The study sample included 77 women with median age of 34 years (range 26-44). Tisseel was used for 43 (62.8%) women. No hemostatic intervention was used for 34 (44.2%) women. There were no complications in either group. The percentage of women with suturing was higher in no hemostatic intervention than in Tisseel group (37.2% vs 8.8%, p =0.004). There was no statistical difference in average AFC (both left and right) after ovarian cystectomy between the Tisseel group and no hemostatic intervention or suturing group. There was

also no statistical difference in average AMH after ovarian cystectomy between the Tisseel group and no hemostatic intervention or suturing group. Overall, average AFC and AMH were both higher after surgery than before surgery among both Tisseel group and no hemostatic intervention group with and without suturing ($p < 0.05$). Average AFC (left and right) and AMH were compared for intervention and for suturing or no hemostatic method using repeated measure ANOVA.

Conclusion: The use of Tisseel, a fibrin based hemostatic agent, does not negatively affect ovarian function after ovarian cystectomy compared to suturing or no hemostatic intervention.

ORAL SESSION 6 - REPRODUCTIVE SURGERY
(3:15 PM — 4:20 PM)

3:39 PM

Assessing the Effect of the COVID-19 Pandemic on the Rate and Management of Ectopic Pregnancy

Micolucci S.,[1,] Deighan T.C.,[2] Van Deman J.,[2] Robinson E.F.[3]. [1]Prisma Health - Upstate, Greenville, SC; [2]Obstetrics and Gynecology, Prisma Health Upstate, Greenville, SC; [3]Prisma Health Upstate- University of South Carolina Greenville, Greenville, SC*
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Study Objective: To evaluate the impact of the COVID-19 pandemic on the rate and management of ectopic pregnancies. With the decrease of in-person wellness visits, there is concern for decreased STI screening and treatment of asymptomatic infections that may contribute to ectopic pregnancy rate. In addition, patient delay in presentation to care leads to later diagnoses of ectopic pregnancy and increased need for utilization of surgical management.

Design: This is a retrospective cohort study. The pre-Covid-19 data were collected from March 2019 through February 2020 and compared to data from October 2020 through September 2021. Data compared included the number of ectopic pregnancies and management strategy.

Setting: Tertiary care, academic medical center.

Patients or Participants: 54 diagnosed ectopic pregnancies in the pre-pandemic phase and 66 diagnosed ectopic pregnancies in post-pandemic phase.

Interventions: Billing diagnosis codes and surgical cases were reviewed for the pre-COVID-19 period and from the post-COVID-19 period. Data for each ectopic subject included site of ectopic, laterality, quantitative HCG, ultrasound findings of free fluid and whether surgical or medical management was performed.

Measurements and Main Results: 54 ectopic pregnancies were diagnosed pre-COVID-19 and 66 were diagnosed post-COVID. The rate of surgical management in the post-COVID-19 group was 77.8% vs 61.1% in the pre-COVID-19 group ($p < 0.05$). Thus, ectopic pregnancies in post-pandemic period were more likely to require surgery. Further, the total rate of ectopic pregnancy is also rising to a statistically significant degree.

Conclusion: There is a statistically significant increase in rate of ectopic pregnancies requiring surgical management since the start of the COVID-19 pandemic. This is significant as early diagnosis and management of ectopic pregnancies can oftentimes prevent surgical management. Further study to be completed to evaluate the reasons for this during a time when resource management and allocation has been so tightly managed.

ORAL SESSION 6 - REPRODUCTIVE SURGERY
(3:15 PM — 4:20 PM)

3:46 PM

Effect of BMI on Outcomes after Surgery for Apical Pelvic Organ Prolapse

Exume D.,[1,] Kunselman A.R.,[2] Stetter C.,[2] Boyd S.S.[3]. [1]Obstetrics and Gynecology, Penn State Health Hershey Medical Center, Hershey, PA; [2]Public Health Sciences, Penn State College of Medicine, Hershey, PA; [3]Obstetrics and Gynecology, Penn State Health Milton S. Hershey Medical Center, Hershey, PA*
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Study Objective: Evaluate the impact of obesity on outcomes after apical pelvic organ prolapse surgery.

Design: Retrospective cohort study using cases identified in the ACS-NSQIP database from 2014-2018.

Setting: Surgical cases from 722 hospitals nationally.

Patients or Participants: 26,898 females age 18-89 who underwent apical prolapse repair were identified by CPT codes. BMI categories are defined as: underweight (BMI <18.5, N=147), normal weight (BMI 18.5-24.9, N=7,374), overweight (BMI 25.0-29.9, N=10,268), class 1 obesity (BMI 30.0-34.9, N=5,810), class 2 obesity (BMI 35.0-39.9, N=2,240), and class 3 obesity (BMI ≥ 40.0, N=1,059).

Interventions: Participants underwent vaginal colpopexy (N=15,466), laparoscopic or robotic sacral colpopexy (N= 9,678), or abdominal sacrocolpopexy (N=1,754).

Measurements and Main Results: The average age of the cohort was 60 years, with 76.3% identifying as white race, 24.2% ASA class 3 or 4, 44.5% with a major medical comorbidity, and 9.0% smoking within one year.

A total of 1,463 patients (5.4%) experienced a minor complication, 611 (2.3%) a major complication, and 1,993 (7.4%) any complication. Complication rates differed significantly by BMI class (minor p=0.005, major p<.001, any p<.001). Class 3 obesity had higher rates of any complication and minor complication compared to all classes except underweight and more major complication compared to normal, overweight and class 1 obesity. After adjusting for age, race, ASA class, smoking, and repair type, significant associations persisted between BMI and complications.

Conclusion: Based on national data from over 26,000 apical prolapse procedures, obesity is associated with post-operative complications. As obesity and average BMI in the US continue to increase, controlled studies are needed to confirm these findings. These results should be considered in preoperative planning and patient counseling.

ORAL SESSION 6 - REPRODUCTIVE SURGERY
(3:15 PM — 4:20 PM)

3:53 PM

Preoperative Tamsulosin to Prevent Postoperative Urinary Retention after Pelvic Floor Repair Surgery

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Study Objective: The purpose of the study is to evaluate the effect of preoperative Tamsulosin on postoperative urinary retention (POUR) in patients undergoing surgery for pelvic organ prolapse.
Design: A prospective randomized control trial.
Setting: Patients enrolled in the outpatient clinic setting. Medication given in the preoperative area, the day of surgery. Voiding trial was performed in the post-anesthesia recovery unit (PACU).
Patients or Participants: 100 patients were enrolled with 50 in each arm, randomly assigned. Patients diagnosed with pelvic organ prolapse undergoing vaginal or laparoscopic reconstructive pelvic surgery with or without mid-urethral sling.
Interventions: Oral Tamsulosin 0.4mg given 30-90 minutes before the procedure. Active voiding trial was performed within 4 hours of patients arriving to the PACU.
Measurements and Main Results: 48 patients enrolled in the control group and 47 patients in the study group. When comparing demographics, there were no statistically significant differences between the groups except for preoperative uterine prolapse *(p<0.05)*. For the primary outcome, there was no statistically significant difference in incidence of POUR between the 2 groups *(p=0.73)*. A total of 36 patients had POUR; 17 (36.2%) in the study group and 19 (39.6%) in the placebo group. A multivariate cox regression analysis determined that the study group had a hazard risk of 1.1 [95% CI 0.47-2.59] but was not statistically significant *(p=0.81)*. Preoperative uterine prolapse also had an increase hazard risk of 1.25 [95% CI 0.52-3.04] but also failed to meet statistical significance *(p=0.62)*. Postoperative narcotic use *(p=1.0)* and increased length of surgery *(p=0.51)* had no increase in POUR.
Conclusion: In this study, the incidence of POUR was not significantly decreased after a single preoperative dose of Tamsulosin. Receiving Tamsulosin with preoperative uterine prolapse had an increased hazard risk for POUR but was not statistically significant. At this time, we do not recommend a single dose of tamsulosin to decrease POUR after prolapse surgery.

ORAL SESSION 6 - REPRODUCTIVE SURGERY (3:15 PM — 4:20 PM)

4:00 PM

Use of Novel Configuration with Suture Kit Device for Robotic-assisted Minimally Invasive Sacrocolpopexy

Das D.,[1,*] *Squires N.,*[2] *Mueller M.,*[1] *Collins S.,*[1] *Lewicky-Gaupp C.,*[1] *Bretschneider C.E.,*[1] *Geynisman-Tan J.,*[1] *Kenton K.*[1]. [1]*Female Pelvic Medicine and Reconstructive Surgery, Northwestern University, Chicago, IL;* [2]*Feinberg School of Medicine, Northwestern University, Chicago, IL*
*Corresponding author.

Study Objective: To assess safety and efficacy of performing robotic-assisted laparoscopic sacrocolpopexy (RA-SCP) using a four-arm robotic configuration and suture kit system.
Design: Retrospective case series.
Setting: Tertiary care referral center.
Patients or Participants: Patients undergoing RA-SCP with or without concomitant hysterectomy.
Interventions: All procedures were performed using four-arm robotic configuration and the Stitch Kit® polytetrafluoroethylene (PTFE) (Origami Surgical) suture kit device. The configuration included four 8 mm ports: one camera port and three working ports. No bedside assistant port was used. The Stitch Kit® PTFE, a canister with 6 polytetrafluoroethylene sutures and a separate compartment for used needles, was inserted into the abdominal cavity through a 8 mm umbilical skin incision prior to robotic docking. After suturing, each needle was replaced in the canister. The canister was closed and removed through the umbilical port site at the end of the case. No fascial closure of port sites was required.
Measurements and Main Results: 422 patients underwent RA-SCP for pelvic organ prolapse from 2018-2021. Mean age was 60 ± 10 years and mean BMI was 27 ± 6 kg/m^2. Most patients had stage III prolapse (73%) and underwent concomitant total hysterectomy (70%). 99% (n=416) of cases were completed robotically; of the 1% (n=6) not completed robotically, 5 had sacrospinous ligament suspensions due to presence of prior eroded foreign body material or extensive adhesions and 1 was aborted due to colorectal mass. The Stitch Kit® canister was successfully inserted and removed in all cases completed robotically with correct needle counts. 337 (80%) of participants followed up at 3 months. No umbilical or port site hernias were reported.
Conclusion: Our case series illustrates that RA-SCP can be performed safely using a four-arm robotic configuration with a suture kit device. This setup eliminates the need for any incisions greater than 8 mm and an assistant port. These modifications allow for surgical efficiency without compromising patient outcomes.

ORAL SESSION 6 - REPRODUCTIVE SURGERY (3:15 PM — 4:20 PM)

4:07 PM

Laparoscopic Pectopexy: A Safe and Effective New Approach for Repair of Pelvic Organ Prolapse

Saini S.. *Gynae Laparoscopist, Jaipur Doorbeen Hospital, Jaipur, India*
*Corresponding author.

Study Objective: To assess the feasibility, safety and effectiveness of laparoscopic pectopexy for repair of pelvic organ prolapse.
Design: prospective study.
Setting: Jaipur Doorbeen Hospital in Jaipur, Rajasthan.
Patients or Participants: 108 women of POP-Q stage ≥II who underwent laparoscopic pectopexy between January 2017 to January 2019 were included.
Interventions: All patients underwent laparoscopic mesh fixation to bilateral pectineal ligament with Moschcowitz repair with pelvic floor repair and vaginal rectocele repair if any.
Measurements and Main Results: among 108 patients, mean age was 48.29 + 14.82years and mean BMI was 24.10 + 3.19kg/m2. Out of 108 cases 24.07% of stage II, 71.30% of stage III and 4.63% of stage IV. Maximum cases were under stage III (71.30%). There were no major intra operative and postoperative complications. Follow up was done at one week, one month,3rd month, 6th month and one to 3 years. On follow up till January 2022, we could contact 88 women, 20 women lost to follow up. out of 108 cases only 5(4.62%) patients show recurrence of prolapse. Out of 5 cases,2 cases show first degree cystocele, 1 case show first degree rectocele, 1 case shows first degree UV decent and 1 case was complete relapse showing second degree prolapse.no mesh erosion seen in 3year follow up of 88 cases. Results are promising with 95.37% all over success rate.
Conclusion: The laparoscopic pectopexy is a good alternative to the laparoscopic Sacropexy. It is equally effective and shows no de novo SUI, defecation disorders, backache or neuralgia in the long-term follow-up.

SATURDAY, DECEMBER 3, 2022
ORAL SESSION 7 - ONCOLOGY
(11:30 AM — 12:35 PM)

11:33 AM

Three Lymphadenectomy Strategies in Endometrial Carcinoma: Analysis of Long-Term Outcomes

Bogani G.,[1,] di Donato V.,[2] Casarin J.,[3] Plotti F.,[4] Papadia A.,[5] Buda A.,[6] Multinu F.,[7] Perrone A.M.,[8] De Iaco P.,[8] Gasparri M.L.,[5] Ghezzi F.,[3] Ferrero S.,[9] Sorbi F.,[10] Angioli R.,[4] Landoni F.,[11] Mueller M.D.,[12] Muzii L.,[2] Benedetti Panici P.,[13] Raspagliesi F.[14]. [1]University La Sapienza, Roma, RM, Italy; [2]Università La Sapienza, Roma, Italy; [3]University of Insubria, Varese, Italy; [4]Campus Biomedico di Roma, Roma, Italy; [5]Ente Ospedaliero Cantonale, Lugano, Switzerland; [6]Ospedale "Michele e Pietro Ferrero" di Verduno, Verduno, Italy; [7]Istituto Europeo di Oncologia, Milano, Italy; [8]Università di Bologna, Bologna, Italy; [9]DINOGMI, University of Genoa, Genoa, Italy; [10]University of Firenze, Firenza, Italy; [11]Università Milano Bicocca, Monza, Italy; [12]University of Bern, Bern, Switzerland; [13]University La Sapienza di Roma, Roma, RM, Italy; [14]Fondazione IRCCS Istituto Tumori di Milano, Milano, Italy*
*Corresponding author.

Study Objective: Sentinel node mapping (SNM) has replaced lymphadenectomy for staging surgery in apparent early-stage endometrial cancer (EC). Here, we evaluated the long-term survival of three different approaches of nodal assessment.
Design: This is a multi-institutional retrospective study evaluating long-term outcomes (at least 3 years of follow-up) of EC patients having nodal assessment between 2006 and 2016. In order to reduce possible confounding factors, we applied a propensity-matched algorithm.
Setting: Referral centers.
Patients or Participants: Consecutive patients with EC undergoing surgical staging.
Interventions: Surgical staging including SNM and/or lymphadenectomy.
Measurements and Main Results: Charts of 1,338 patients were evaluated: 398 (29.7%), 174 (13.1%), 187 (13.9%), and 579 (43.3%) no retroperitoneal staging, SNM, SNM followed by backup lymphadenectomy and lymphadenectomy, respectively. Applying a propensity score matching algorithm (1:1:2) we selected 500 patients: 125 SNM vs. 125 SNM plus backup lymphadenectomy vs. 250 lymphadenectomies. Baseline characteristics of the study population were similar between groups. The prevalence of nodal disease was 14%, 16%, and 12% in patients having SNM, SNM followed by backup lymphadenectomy and lymphadenectomy, respectively. Overall, 19 (7.6%) patients were diagnosed with low volume nodal disease. The mean (SD) follow-up time was 62 (±11) months. The survival analysis comparing the three techniques did not show statistical differences in terms of disease-free (p=0.750) and overall survival (p=0.899). Similarly, the type of nodal assessment did not impact survival outcomes after stratification on the basis of uterine risk factors (p>0.2).
Conclusion: Our study highlighted that SNM provides similar long-term oncologic outcomes than lymphadenectomy. Randomized controlled trials are needed to corroborate the value of SNM in EC.

ORAL SESSION 7 - ONCOLOGY
(11:30 AM — 12:35 PM)

11:40 AM

Benign Ovarian Cystectomies in Children and Adolescents: A Comparison of Transumbilical Single-Port and Multi-Port Laparoscopic Surgery

Tong Y.. Department of Gynecology, Fujian Maternity and Child Health Hospital, Affiliated Hospital of Fujian Medical University, Fuzhou, China*
*Corresponding author.

Study Objective: To investigate the safety and clinical value of transumbilical single-port laparoscopic surgery (TSPLS) in the treatment of benign ovarian cysts in children and adolescents.
Design: A retrospective analysis was performed on 85 children and adolescents who underwent benign ovarian cystectomies in Fujian Maternity and Child Health Hospital, Affiliated Hospital of Fujian Medical University from January 2019 to January 2022, including 55 cases of mature cystic teratoma, 16 cases of myxoid cystadenoma, 9 cases of serous cystadenoma, 2 cases of parovarium cyst, 2 cases of follicular cyst, and 1 cases of ovarian thecoma-fibroma. Among them, 33 cases with transumbilical single-port laparoscopic oophorocystectomy (TSPLO group), median age was 14 years (7-18 years), mean diameter of ovarian cysts was (13.06 ± 7.80 cm). 52 cases with transumbilical multi-port laparoscopic oophorocystectomy (TMPLO group), median age was 15 years (6-18 years) and mean diameter of ovarian cysts was (7.69 ± 2.80 cm). Operative time, intraoperative blood loss, intraoperative cyst rupture rate, time to anal exhaust and hospital stay, Cosmetic Score (CS) and Visual Analogue Scale (VAS) were compared between the two groups.
Setting: N/A
Patients or Participants: N/A
Interventions: N/A
Measurements and Main Results: No conversion to laparotomy or surgical complications occurred in the two groups, and no statistical significance in operative time, intraoperative blood loss and intraoperative cyst rupture rate (all $P > 0.05$). The time to anal exhaust (18.82 ± 4.58 h vs. 21.29 ± 5.11 h, $P = 0.027$) and hospital stay (3.39 ± 0.83 day vs.3.92 ± 1.13-day, $P = 0.023$) in TSPLO group were shorter than those in TMPLO group. Lower postoperative VAS scores and higher CS scores were seen in the TSPLO group (all $P < 0.05$).
Conclusion: TSPLS is safe and feasible for benign ovarian cysts in children and adolescents, and has obvious advantages of fast postoperative recovery, good cosmetic effect and high satisfaction rate of patients.

ORAL SESSION 7 - ONCOLOGY
(11:30 AM — 12:35 PM)

11:47 AM

Oncological Outcomes of Obese Patients in Treatment of Endometrial Cancer. Comparative Analysis of Robotic Versus Laparoscopic Surgery

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Study Objective: To compare and evaluate long term oncological outcomes of robotic versus laparoscopic surgery in the treatment of endometrial cancer for obese, morbidly obese, and super morbidly obese patients.
Design: A prospective cohort of patients who underwent robotic-assisted hysterectomy with lymphadenectomy (RHLND) were compared to total laparoscopic hysterectomy with lymphadenectomy (LHLND) were analyzed for the long-term oncological outcomes of recurrence rate and overall survival (OS).
Setting: Tertiary Hospital
Patients or Participants: From 03/1999-03/2018, patients with BMI >30 who underwent minimally invasive surgical treatment for endometrial cancer.
Interventions: Demographics, pathologic characteristics for stage, grade and histology and adjuvant treatment received were compared between the two surgical treatment groups and analyzed for the oncological outcomes of recurrence rate and overall survival (OS).
Measurements and Main Results: Total of 330 patients were evaluated with 254/330 (77%) underwent RHLND and 76/330 (23%) underwent LHLND. Demographics and pathological outcomes were comparable between LHLND and RHLND when matched for age, histology, grade, and stage (FIGO 2019) with the exception of stage IB and II. Adjuvant treatment required for LHLND 28/76 (36.8%) and for RHLND 93/254 (36.6%) were equivalent. The rate of recurrence between the two groups for 10 year follow up was 7/76 (9.2%) and 36/254 (14.2%) for LHLND and RHLND respectively. The rate of recurrence showed no significant difference between the two surgical treatment groups when analyzed for Stage I disease [22/211 (10.4%) for RHLND and 6/69 (8.7%) for LHLND] and advanced stage disease [14/43(32.5%) for RHLND and 1/7 (14.2%) for LHLND]. The 10-year OS was 4/79 (5.2%) and 15/254 (5.9%) for LHLND and RHLND respectively were equivalent.
Conclusion: The long-term oncological outcomes between LHLND and RHLND showed no difference in recurrence rate and overall survival in a subset of obese patients with endometrial cancer.

ORAL SESSION 7 - ONCOLOGY
(11:30 AM — 12:35 PM)

11:54 AM

Meta-Analysis of Laparoscopic Radical Hysterectomy vs. Robotic Assisted Radical Hysterectomy for Early Stage Cervical Cancer

Govindan L.,[1,] Marchand G.J.,[2] King A.,[3] Brazil G.,[4] Ulibarri H.,[2] Parise J.,[3] Arroyo A.,[3] Coriell C.,[1] Goetz S.,[1] Moir C.,[1] Sainz K.M.[4]. [1]The Marchand Institute for Minimally Invasive Surgery, MESA, AZ; [2]The Marchand Institute for Minimally Invasive Surgery, Mesa, AZ; [3]Marchand Institute for Minimally Invasive Surgery, Mesa, AZ; [4]Minimally Invasive Surgery, The Marchand Institute for Minimally Invasive Surgery, Mesa, AZ*
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Study Objective: Although laparoscopic radical hysterectomy (LRH) and robotic radical hysterectomy (RRH) are both minimally invasive procedures commonly performed for the treatment of early-stage cervical cancer, there is little high quality data on the head-to-head comparison of these two procedures. We sought to perform the largest study to date to compare the efficacy and complications of these two procedures.
Design: Systematic Review and Meta-Analysis.
Setting: Gynecologic Oncology.
Patients or Participants: Women suffering from early-stage cervical cancer. We included retrospective cohorts, prospective cohorts, case-control, and randomized clinical trials.
Interventions: Laparoscopic radical hysterectomy compared with Robotic radical hysterectomy.
Measurements and Main Results: We found that following RRH, women had a decreased hospital stay (MD=0.80[0.38,1.21], (P<0.002). We found no differences in estimated blood loss (MD=35.24 [-0.40,70.89],(P=.05), blood transfusion rate ((OR=1.32[0.86,2.02], (P=0.20), rate of post-operative complications (OR=0.84[0.60,1.17], (P=0.30), the operative time (MD=6.01[-4.64,16.66],(P=0.27), number of resected lymph node (MD=-1.22[-3.28,0.84],(P=0.25) intraoperative complications (OR=0.78[0.51,1.19],(P=0.25), five-year overall survival (OR=1.37[0.51,3.69],(P=0.53), lifetime disease free survival (OR=0.89 [0.59,1.32],(P=0.55), intraoperative and postoperative mortality (within 30 days) (OR=1.30[0.66,2.54],(P=0.44), and recurrence (OR=1.14 [0.79,1.64],(P = 0.50).
Conclusion: RRH seems to result in the patient leaving the hospital sooner after surgery. We were unable to find any differences in our ten other outcomes related to complications or efficacy.

ORAL SESSION 7 - ONCOLOGY
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12:01 PM

Comparative Effectiveness of Minimally Invasive Hysterectomy Type in the Treatment of Endometrial Cancer

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Study Objective: Determine the comparative effectiveness of robotic-assisted versus traditional laparoscopic hysterectomy for the treatment of endometrial cancer.
Design: Retrospective cohort study.
Setting: Hospitals performing a minimum of 20 minimally-invasive surgeries for endometrial cancer per year recorded in the National Cancer Database between 2010 and 2018.
Patients or Participants: Women who underwent hysterectomy for endometrial cancer and had an epithelial histology, a Charlson comorbidity score of 0 or 1, and stage I to III disease.
Interventions: Route of minimally invasive hysterectomy, either robotic-assisted (RAH) or traditional laparoscopic hysterectomy (TLH) by intention-to-treat analysis. Cox proportional hazard regression was used to evaluate overall survival.
Measurements and Main Results: A total of 201,039 women underwent hysterectomy for endometrial cancer; 121,770 (60.6%) RAH, 37,701 (18.8%) TLH and 41,568 (20.7%) via laparotomy. From 2010 to 2018, RAH increased (40.7% to 69.9%, 3.7% per year), laparotomy decreased (43.0% to 11.0%, 4% per year), and TLH increased (16.4% to 19.1%, 0.3% per year, all p<0.001). RAH was associated with a higher likelihood of any nodal evaluation (77.5% versus 66.4%; OR 1.74 95%CI 1.70-1.79); whereas, TLH was associated with higher rates of conversion to laparotomy (7.6% versus 1.7%; OR 4.08 95%CI 4.03-4.12), increased 30-day mortality (0.29% versus 0.18%; OR 1.55 95%CI 1.21-1.99) and increased 90-day mortality (0.69% versus 0.42%; OR 1.65 95%CI 1.41-1.94). Overall survival was not different for patients who underwent minimally-invasive hysterectomy after adjustment for age, stage, histology, and Charlson comorbidity score (HR 0.98 95%CI 0.94-1.01).

Conclusion: RAH for endometrial cancer increased dramatically between 2010 and 2018 compared to TLH. Additionally, RAH was associated with a 4-fold lower risk of conversion to laparotomy, increased likelihood of nodal assessment, and decreased short-term mortality compared to TLH.

ORAL SESSION 7 - ONCOLOGY
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Minimally Invasive Technique Not Associated with Worse Prognosis in Patients with Stage I Uterine Papillary Serous Carcinoma (UPSC)

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Study Objective: To determine the role of surgical technique in increasing risk of recurrence in patients with stage I UPSC.
Design: Using a prospective database and billing records, all cases of UPSC were identified from 2006 through 2021. Standard statistical analysis related the impact of surgical technique and BTL on recurrence risk and progression free survival (PFS) in patients with stage I UPSC.
Setting: N/A.
Patients or Participants: All patients with UPSC diagnosed at our center 2006-2021.
Interventions: N/A.
Measurements and Main Results: A total of 225 total cases of UPSC were identified, including 118 pts with stage I disease. Six patients (5%) had endometrial intraepithelial carcinoma (EIC), 98 (83%) were stage IA, and 14 (12%) were stage IB. A history of BTL was obtained in 25 pts (21%). Minimally invasive hysterectomy was performed in 99 (84%; 31% robot, 53% laparoscopy). Adjuvant chemotherapy was given to 83 patients (72%) with 31 (256%) receiving 3 cycles or less and 54 (46%) receiving 4-7 cycles. Additionally, 22 (19%) received vaginal brachytherapy and 9 (8%) received whole pelvic radiation. Seventeen patients (14%) experienced recurrence after treatment and 8 (7%) died of disease. No differences in PFS or outcomes were noted between open and minimally invasive methods (P=0.76). Patients who underwent BTL prior to diagnosis were found to have a recurrence rate of 28% vs. 11% in patients without history of BTL (P = 0.03). A multivariate model incorporating known risk factors for recurrence, including use of radiation, chemotherapy, depth of invasion, and LVSI, confirmed that BTL remained a significant predictor of recurrence (OR 3.18; 95% CI 1.02-9.96, P = 0.046).
Conclusion: No differences in progression free survival were noted between patients who underwent minimally invasive vs. open surgeries in patients with stage I UPSC. However, BTL does not appear to be protective against extra-uterine spread and may change the presenting stage of biologically more aggressive tumors.

ORAL SESSION 7 - ONCOLOGY
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Hysterectomy Alone vs. Hysterectomy Plus Sentinel Node Mapping in Endometrial Cancer: Long-Term Results from a Multi-Institutional Study

Bogani G.,[1,] Papadia A.,[2] Casarin J.,[3] Buda A.,[4] Multinu F.,[5] Plotti F.,[6] Perrone A.M.,[7] De Iaco P.,[7] Ghezzi F.,[3] Ferrero S.,[8] Angioli R.,[6] Muzii L.,[9] Landoni F.,[10] Mueller M.D.,[11] Benedetti Panici P.,[12] Raspagliesi F.,[13] di Donato V.[9].* [1]*Fondazione IRCCS Istituto Tumori Milano, Milano, Italy;* [2]*Ente Ospedaliero Cantonale, Lugano, Switzerland;* [3]*University of Insubria, Varese, Italy;* [4]*Ospedale "Michele e Pietro Ferrero" di Verduno, Verduno, Italy;* [5]*Istituto Europeo di Oncologia, Milano, Italy;* [6]*Campus Biomedico di Roma, Roma, Italy;* [7]*Università di Bologna, Bologna, Italy;* [8]*DINOGMI, University of Genoa, Genoa, Italy;* [9]*Università La Sapienza, Roma, Italy;* [10]*Università Milano Bicocca, Monza, Italy;* [11]*University of Bern, Bern, Switzerland;* [12]*University La Sapienza di Roma, Roma, RM, Italy;* [13]*Fondazione IRCCS Istituto Tumori di Milano, Milano, Italy*
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Study Objective: To compare perioperative and long-term outcomes after hysterectomy and hysterectomy plus sentinel node mapping (SNM) in endometrial cancer (EC) patients.
Design: This is a multi-institutional retrospective study.
Setting: Oncologic referral centers.
Patients or Participants: Patients with apparent early-stage EC.
Interventions: Laparoscopic surgical staging.
Measurements and Main Results: Charts of 572 consecutive EC patients were evaluated. The study population included 398 (69.5%) and 174 (30.5%) patients having laparoscopic hysterectomy and laparoscopic hysterectomy plus SNM. As the results of the adoption of a propensity-score matched analysis, we selected two homogeneous cohort of patients (150 having hysterectomy only vs. 150 having hysterectomy plus SNM). The execution of sentinel node mapping correlated with longer operative time, but it is not influencing length of hospital stay and estimated blood loss. Overall complication rates were similar between groups (0.7% in the hysterectomy group vs. 1.3% in the hysterectomy plus SNM group; p=0.561). No lymphatic-specific complication occurred. Overall, 12% of patients having SNM were diagnosed with disease harboring in their lymph nodes. While no stage IIIC patients were diagnosed among patients having hysterectomy only. Considering patients diagnosed with stage IIIC disease, we observed that macrometastais, micrometastasis, and isolated tumor cells were detected in 9 (6%), 3 (2%), and 6 (4%) patients, respectively. Adjuvant therapy administration rate was similar between groups. Considering patients having SNM, less than 5% of patients received adjuvant therapy on the basis of nodal status only; all the other patients received adjuvant therapy on the basis of uterine risk factors. In comparison to hysterectomy alone, SNM did not improve disease-free survival in low- (p=0.789), intermediate- (p=0.850), and high-risk patients (p=0.540, log-rank test). Five-year overall survival was not influenced by surgical approach.
Conclusion: Laparoscopic hysterectomy (with or without SNM) is safe and effective method for managing EC patients. Further evidence is warranted in to confirm whether SNM could be safely omitted in the era of molecular/genomic profiling.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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11:33 AM

Enhanced Recovery after Surgery (ERAS) Practices in Minimally Invasive Gynecologic Surgery: A National Survey

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Study Objective: Enhanced Recovery After Surgery (ERAS) pathways are evidence-based practices aimed at minimizing perioperative physiologic stress responses. This reduces recovery time, hospital-stay length, postoperative complications, and hospital cost per patient. The objective of this study was to assess the Canadian application of and adherence to ERAS protocols during minimally invasive gynecologic surgery. We also aimed to identify facilitators and barriers to ERAS uptake in our population.
Design: A self-administered cross-sectional survey was distributed via three listservs (Canadian Ob/Gyn residency programs, CanSAGE, and the Society of Obstetricians and Gynecologists of Canada [SOGC]) between February 2021 to January 2022. The survey assessed 14 perioperative components as per the American Association of Gynecologic Laparoscopists (AAGL) ERAS consensus guidelines.
Setting: N/A.
Patients or Participants: Canadian Ob/Gyn residents, fellows, and attendings.
Interventions: N/A.
Measurements and Main Results: 157 responses were analyzed. Majority of respondents (77%) are attendings and work in academic hospitals (48%). Only 41% of respondents work within an established ERAS program. Majority of respondents engage in preoperative anemia optimization, although targets varied with 43% targeting Hemoglobin>120g/L. The proportion of respondents that engaged in other preoperative interventions (e.g., lifestyle modification) varied. While most counselled on hyperglycemia and obstructive sleep apnea, a smaller proportion (16-39%) addressed obesity, smoking cessation, and alcohol intake; notably, this was consistent across sites with and without established ERAS programs. Respondents had a high adherence to intraoperative practices including VTE prophylaxis (83%), early feeding (98%), and early ambulation (89%). There was poor adherence to perioperative fasting times, preoperative carbohydrate loading, and intraoperative IV fluids. Most respondents felt ERAS pathways were safe (98%) and improved patient outcomes (82%).
Conclusion: While the implementation of formal ERAS pathways differs between provinces and hospitals, practitioners engage in various ERAS components as per consensus guidelines. Future and targeted research around ERAS components with lower adherence would be beneficial in identifying and addressing barriers to optimize surgical care.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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Reducing Surgical Site Infection and Sepsis after Hysterectomy: Cefazolin Compared with Cefazolin Plus Metronidazole

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Study Objective: To evaluate if cefazolin plus metronidazole before a hysterectomy will be more effective in prevention of surgical site infection (SSI) and sepsis compared to the existing recommendation of preoperative cefazolin alone.
Design: Retrospective chart review.
Setting: Henry Ford Health System (HFHS).
Patients or Participants: Data was collected for 1485 adult patients who received hysterectomies within HFHS for benign and malignant conditions. The control group (group 1) was obtained via retrospective chart review to include patients who had a hysterectomy between January 2019 and June 2020 and received cefazolin alone as antibiotic prophylaxis. The treatment group (group 2) included patients who had a hysterectomy between July 2020 and January 2022 and received preoperative cefazolin plus metronidazole.
Interventions: Addition of metronidazole to cefazolin as antibiotic prophylaxis prior to hysterectomy.
Measurements and Main Results: Of the 1485 patients, 789 (53.1%) were given cefazolin alone and 696 (46.9% were given cefazolin plus metronidazole. There was a total of six (0.4%) patients who experienced sepsis and 37 (2.5%) who had a site infection across both groups. There was a decrease in both sepsis and SSI in group 2, however it did not reach statistical significance. The model for the risk of sepsis is adjusted for obesity (BMI ≥30), procedure length >2 hours, and gynecologic cancer. We found that there were no significant differences in the risk of sepsis between the two treatment groups after adjusting for these risk factors (p=0.736). The model for the risk of site infection is adjusted for diabetes, obesity, smoking status, procedure length, and gynecologic cancer. We found that there were no significant differences in the risk of site of infection between the two treatment groups (p=0.451).
Conclusion: The addition of metronidazole to the standard antibiotic prophylaxis regimen for hysterectomy did not significantly reduce the rate of surgical site infections or sepsis within our health system.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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Applications of Ultrasound Elastography in Benign Gynecology: A Scoping Review

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Study Objective: To synthesize the literature in which ultrasound elastography (UE) has been used in benign gynecology and identify avenues for future research and clinical implementation.
Design: A structured search of EMBASE and Medline databases, last conducted on April 15th, 2022.
Setting: N/A.
Patients or Participants: Eligible studies included adult participants with female pelvises.
Interventions: English language papers focusing on the utility of ultrasound elastography applied to benign gynecology were included. Narrative reviews, conference abstracts, and letters to the editor were excluded. Two independent reviewers screened titles and abstracts for inclusion, a third reviewer was consulted in the case of disagreement. Study quality was assessed by a customized checklist for study implementation and elastography technique. Extracted data points included type of elastography, gynecologic application, opportunities for clinical implementation, and technology strengths and limitations.

Measurements and Main Results: The search returned 2026 studies, of which 542 were duplicates. A total of 48 studies were included for data extraction. Studies were published between 2013 and 2022. Studies most frequently used shear wave elastography as the method of UE (n=26), followed by strain elastography (n=19) and acoustic radiation force impulse (n=3). Ultrasound elastography was most frequently applied to the diagnosis of adenomyosis (n=12) and as a method to assess pelvic floor muscle function (n=12). Other areas studied included the identification of endometrial polyps and submucosal fibroids (n=4), of deeply infiltrating endometriosis (n=2), and the elastic properties of polycystic ovaries (n=6) and the uterine cervix (n=5). Identified limitations of the technology were the lack of published reference values for gynecologic organs and difficulties in assessing tissues deep to the transducer. Few studies were deemed of high quality.
Conclusion: Ultrasound elastography has been applied to a broad range of gynecologic pathologies. Future research is needed to establish elastography reference values for the female pelvis and expand on clinical applications of this technology in gynecology.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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11:54 AM

Post-Operative Voiding Function after Total Laparoscopic Hysterectomy with Transvaginal Versus Transabdominal Morcellation

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Study Objective: To determine the rates of post-operative urinary retention (POUR) in patients who have undergone transvaginal and transabdominal morcellation for large multifibroid and adenomyotic uteri during a total laparoscopic hysterectomy.
Design: Retrospective, multi-centre, cohort study.
Setting: Multi-centre healthcare system serving Calgary and Southern Alberta population.
Patients or Participants: The patients of four high-volume minimally invasive gynecologists were included in this study. Women 18 years and older who underwent a total laparoscopic hysterectomy requiring morcellation between January 2015 to April 2021 were included. Those with pre-existing urinary retention were excluded.
Interventions: Retrospective observational cohort study.
Measurements and Main Results: POUR was defined as urinary retention requiring an indwelling or in-and-out catheter post-operatively prior to discharge. No difference in POUR was found between transvaginal (29/139, 20.9%) and transabdominal (12/56, 21.4%) morcellation. There were also no differences in time to first post-operative void (5.5±4.5h vs 5.75±3.25h), length of stay (23±5h vs 22±6h), post-operative UTI (5.1% vs 3.6%) or presentation to the emergency department for POUR post-discharge (1.4% vs 1.8%) for transvaginal and transabdominal morcellation, respectively. A trend towards increased complication rate at the time of morcellation (7% vs 0%) and urinary complaints at post-operative follow-up appointments (9.4% vs 0%) were noted in the vaginal morcellation group.
Conclusion: With respect to route of uterine morcellation, patients who undergo transvaginal and transabdominal approaches have similar rates of POUR. It is reasonable for surgeon preference to guide the decision about route of morcellation. Larger prospective trials are needed to further assess POUR and the potential increased complication rate and post-operative urinary complaints with transvaginal morcellation.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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12:01 PM

Surgical Practice Patterns in the Management of Ovarian Torsion

Brah T.K.,[1,] Le Neveu M.,[2] Snow M.,[3] Krishnamoorthi M.,[3] Wu H.Y.,[1] Simpson K.,[1] Patzkowsky K.E.,[1] Frost A.S.,[4] Wang K.C.[1]. [1]Division of Minimally Invasive Gynecologic Surgery, Johns Hopkins School of Medicine, Baltimore, MD; [2]Department of Gynecology and Obstetrics, Johns Hopkins Medicine, Baltimore, MD; [3]Johns Hopkins School of Medicine, Baltimore, MD; [4]Gynecology and Obstetrics, Johns Hopkins University School of Medicine, Baltimore, MD*
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Study Objective: Ovarian torsion (OT) is a common gynecologic emergency with the potential for significant lifelong health and fertility sequelae. We aimed to evaluate surgical practice patterns in the management of patients with concern for OT, in particular factors associated with oophorectomy versus ovarian preserving surgery (OPS) and rates of minimally invasive surgery (MIS).
Design: Retrospective cohort analysis
Setting: Tertiary medical center
Patients or Participants: All patients presenting acutely with symptoms concerning for OT who underwent surgical management between 2016-2021. Patients with incidental torsion at the time of scheduled surgery were excluded from this analysis.
Interventions: Evaluation of patient demographics, background clinical context, imaging findings, and surgical variables including primary specialty, surgical approach, procedures performed, and perioperative outcomes.
Measurements and Main Results: One hundred twenty-six-patient underwent 129 surgeries for suspected ovarian torsion. Of this, 75 cases (59.52%) were confirmed to be torsed. In total, 73 (57.9%) patients underwent OPS while 52 (41.3%) underwent oophorectomy. Patients who underwent OPS compared to oophorectomy were noted to be significantly younger (mean age 23.3 vs 29.3, $p = 0.012$) and have a lower BMI (mean 25.0 vs 29.7, $p = 0.011$). The proportion of OPS cases varied significantly by subspecialty with OPS performed in 56.9% of cases performed by Obstetrics and Gynecology generalists, 67.7% of cases by minimally invasive gynecologic surgeons (MIGS), 6% of cases by gynecologic oncologists (GO), and 79% of cases by pediatric surgeons. This data is confounded by patient age, fertility goals, and concern for malignancy. 90.28% of OPS cases were performed via a MIS approach while 69.2% of oophorectomies were MIS. MIS rates varied significantly by surgical subspecialty: 88% among generalists, 96.7% among MIGS, 60% among gynecologic oncologists, and 60% among pediatric surgeons.
Conclusion: The surgical management of OT varies widely. Our data supports that age, BMI, and surgical subspecialty influence surgical approach and management.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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Ice-Pop: Ice Packs for Post-Operative Pain, a Randomized Controlled Trial

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Study Objective: To evaluate the benefit of ice packs as a supplement to standard pain management following laparoscopic hysterectomy.
Design: This IRB approved randomized control trial involved patients undergoing outpatient laparoscopic hysterectomy for benign indications. Subjects were randomized to receive standard enhanced recovery after surgery (ERAS) pain management or standard ERAS plus ice packs and followed for two weeks post-operatively.
Setting: Postoperative care unit in two academic tertiary care centers.
Patients or Participants: Patients at two large academic institutions undergoing outpatient laparoscopic hysterectomy via conventional laparoscopic technique with the minimally invasive gynecologic surgery team between February 2019 and November 2020 were considered for participation. Patients with chronic pain, current opioid use more than 1 week, or requiring planned overnight hospitalization were excluded. Primary outcome data was available for 51 subjects (24 control, 27 intervention).
Interventions: Ice packs were placed on the abdomen in the operating room.
Measurements and Main Results: Pain was assessed at multiple time points throughout the study using Visual Analogue Scale (VAS). Narcotic requirement was assessed using morphine milligram equivalent (MME). MME requirements at all time points were not different between the groups ($p=0.63$). Postoperative day 1 (POD#1) VAS scores were not different ($p=0.89$). 84.8% of subjects felt their pain was adequately controlled. All subjects were prescribed 20 tablets oxycodone and on average used 2.9 (SD 3.4) tablets after discharge. 87% of intervention subjects would use ice again in the future and 82.6% would recommend ice to others.
Conclusion: Ice packs are an acceptable supplement for postoperative management with high patient satisfaction and no adverse effects; however, cryotherapy does not significantly impact postoperative reported pain or narcotic use. Providers caring for postoperative patients should be cognizant of unintentional consequences associated with overprescribing opioids and consider reducing the number of tablets prescribed given consistent evidence that patients require less than half the quantity given.

ORAL SESSION 8 - RESEARCH & Natural Orifice
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Moving the Needle on Vaginal Hysterectomy: Implementing vNOTES at a Large Academic Medical Center

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Study Objective: To evaluate the adoption of vNOTES at a large resident driven county hospital and determine if this approach could significantly increase rates of vaginal hysterectomy.
Design: All hysterectomies done on the benign gynecology resident service of the presenter were included. A period of 24 months preceding the introduction of vNOTES (VANH: vaginal assisted vNOTES hysterectomy) was compared to a period of 24 months following the introduction of VANH.
Setting: Large County hospital resident gynecology service.
Patients or Participants: All patients presenting for hysterectomy for a 4-year period.
Interventions: The residents on each service block were introduced to vNOTES (VANH) as a route of hysterectomy. Residents suggest the desired route of surgery for each case, with faculty guidance as to relative and absolute contraindications for the planned route. In the early cohort, routes of hysterectomy were TVH, TLH, RA-TLH, and TAH. In the post intervention cohort, the routes of hysterectomy were TVH, VANH, TLH, RA-TLH, and TAH.
Measurements and Main Results: The main metric was the percentage of cases completed by each route, especially the percentage of cases completed vaginally, comparing TVH to TVH+VANH. An expansion in access to the daVinci Xi system resulted in an increase in the percentage of RA-TLH, so for the purposes of this analysis, these routes were considered together.
Secondary considerations were conversion from planned route or complications. There were no conversions in the TVH or VANH category. Complications were correlated more with uterine size than planned route.
Conclusion: The addition of VANH to gynecological education can improve the access of residents to vaginal hysterectomies. By reducing perceived barriers to vaginal hysterectomy, it increases the number of patients considered candidates for vaginal surgery without increasing complications rates.

	Pre-NOTES Era	vNOTES Era
Vaginal approach (TVH + VANH)	15.6%	32.1%
Laparoscopic approach (TLH + RA-TLH)	80.4%	60.6%
Open approach	3.9%	7.3%

ORAL SESSION 9 - BASIC SCIENCE & Laparoscopy
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Surgical Skills Curriculum Satisfaction Among Current Obstetrics and Gynecology Residents

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Study Objective: To determine differences in surgical skills curriculum (SSC) and exposure to surgical subspecialties for current OB/GYN residents. Identify areas for improvement and standardization among residency programs.
Design: Online survey using novel 54-item questionnaire.
Setting: Surveys distributed via email to program directors and coordinators of OB/GYN residency programs with request to forward survey to current residents.
Patients or Participants: Current OB/GYN residents were eligible. 114 participants answered the survey over a 4-week period from March to April 2022.
Interventions: N/A.
Measurements and Main Results: The majority of the respondents were female (87.9%), ages 28 to 32 (76.7%), and from university-based residency programs (58.6%). 60.3% of respondents reported having a structured SSC. Most SSCs were led by a mixture of generalists and subspecialists (37.9%), with the subspecialist most commonly a minimally invasive gynecologic surgeon (40.7%). Most residents reported there was not enough structure in their SSC (62.1%) and not enough time dedicated to surgical skills (61.2%). Only 7.8% of respondents were very satisfied with their program's SSC and the majority reported that surgical skills education could be improved (81.0%). Residents with structured SSCs were more likely to be satisfied with their training (5-point Likert scale mean 2.42 vs 3.64, p<.001). On average, most residents reported rotating with surgical subspecialists 16 weeks per year (31.0%) with 3-4 days in the operating room per week (59.5%). Residents reported that operating with surgical subspecialists improved their surgical skills (97.1%) and prepared them for independent surgery (94.0%). The majority of residents agreed that all programs should have a standardized SSC (84.5%) and have access to equivalent resources (89.7%).
Conclusion: The majority of OB/GYN residents are unsatisfied with their current SSC and agree that a standardized curriculum is needed. Exposure to surgical subspecialists improves resident surgical skills and prepares trainees for independent surgery.

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Impact of Trainee Involvement on Surgical Outcomes of Abdominal and Laparoscopic Myomectomy

Fajardo O.,[*,1] *Grebenyuk E.,*[2] *Chaves K.F.,*[1] *Ding T.,*[3] *Zhao Z.,*[3] *Curlin H.L.,*[1] *Harvey L.*[1]. [1]*Division of Minimally Invasive Gynecologic Surgery, Vanderbilt University Medical Center, Nashville, TN;* [2]*Department of Obstetrics and Gynecology, Lankenau Medical Center, Philadelphia, PA;* [3]*Department of Biostatistics, Vanderbilt University Medical Center, Nashville, TN*
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Study Objective: To determine the impact of trainee involvement on operative time and transfusion risk for myomectomy.
Design: Cohort study utilizing the National Surgical Quality Improvement Program (NSQIP) database of abdominal and laparoscopic myomectomies with trainee involvement versus (vs) no trainee involvement from 2008 - 2012 (the most recent years that trainee involvement was a variable in the database).
Setting: Trainee involvement in myomectomy.
Patients or Participants: 1216 patients.
Interventions: Preoperative factors, intraoperative outcomes, and 30-day postoperative complications were evaluated. The primary outcomes were operative time and rate of transfusion. Continuous variables were assessed with Wilcoxon rank tests. Categorical variables were assessed with $\chi 2$ tests.
Measurements and Main Results: Overall, 64% (n=775/1216) of myomectomies had trainee involvement. Trainee involvement was associated with a 31 minute (min) longer operative time (92 vs 123min, p<0.01). This difference persisted for abdominal myomectomy (89 vs 115min, p<0.01) including both 1-4 myomas/weight ≤250g (79 vs 104min, p<0.01) and ≥5 myomas/weight >250g (104 vs 143min, p<0.01). However, for laparoscopic myomectomy, there was no difference in operative time (152 vs 155min, p=0.45). There was a higher rate of transfusion between no trainee vs trainee (3% vs 9%, p<0.01) for myomectomies overall. However, when stratified, only abdominal myomectomies with ≥5 myomas/weight >250g demonstrated a higher rate of transfusion (3% vs 18%, p<0.01) and there was no difference in rate of transfusion for laparoscopic myomectomy (6% vs 4%, p=0.47). There was no difference in the number of overall complications of myomectomy (3% vs 4%, p=0.34).
Conclusion: Trainee involvement was associated with increased operative time for abdominal myomectomy and rates of transfusion for abdominal myomectomy with a high fibroid burden. Trainee involvement does not affect operative time or rates of transfusion for laparoscopic myomectomy. When appropriate, myomectomies with trainees should be performed via a minimally invasive approach.

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Time for an Education Revamp? A Cross-Sectional Multi-Institute Survey of FMIGS Program Directors and Fellows' Didactics Experiences

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Study Objective: Currently there is no comprehensive standardized didactics curriculum for fellowships in minimally invasive gynecologic surgery (FMIGS). The purpose of this study was to determine the current state of didactic education and the perceptions that program directors (PDs) and fellows have regarding a standardized curriculum.

Design: Cross-sectional study using a survey of AAGL FMIGS program directors and current fellows.
Setting: AAGL FMIGS programs.
Patients or Participants: The survey was distributed to all FMIGS fellows and PDs.
Interventions: An anonymous multi-item web-based survey was distributed and open for responses between February and March 2022.
Measurements and Main Results: Fifty-seven fellows (39% of current fellows) and 87 PDs (58% of current PDs) completed the survey. The average number of days per week in the operating room was 3.47 (SD 0.68). Seventy-eight percent of programs had a current structured educational curriculum. The average hours dedicated to education per month was 4.20 (SD 2.96). Fellows identified the most important educational resources as: FMIGS core reading list, FMIGS surgical video curriculum, online resources and simulation. Eighty-eight percent of PDs reported utilizing the FMIGS education objectives and reading list in creation of their curriculum. Of the fellows surveyed, 59% reported that there is not enough structure in their curriculums. Eighty-five percent of fellows and 70% of PDs stated their education programs could be improved. A large majority (78% of fellows and 64% of PDs) agreed that all fellows should learn the same content. Ninety-one percent of all respondents stated that all fellows should have access to the same educational resources. Seventy-four percent of all respondents agreed that participating in a standardized didactic curriculum would help fellows transition into independent practice.
Conclusion: This study demonstrates a potential need for a standardized, structured didactics curriculum for fellowships in minimally invasive gynecology as indicated by both fellows and program directors.

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Evidence-Based Recommendations for Referral and Consultation to a Minimally Invasive Gynecologic Surgeon: A Systematic Review

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Study Objective: Minimally invasive gynecologic surgery (MIGS) is a subspecialty focus of obstetrics and gynecology with focused expertise on complex benign gynecologic pathology. To date, no formal recommendations have been made in defining a referral system for MIGS. This systematic review investigates the evidence regarding common pathologies and procedures including leiomyomatous uteri, endometriosis, and complex hysterectomies and their outcomes, and posits a basis for MIGS referral.
Design: Systematic Review.
Setting: University-Affiliated Community Hospital.
Patients or Participants: A PubMed literature search of pertinent research published within the preceding 5 years from January 2017 - Dec 2021. 1435 titles and abstracts were identified, and of these 372 full articles screened. 26 retrospective studies were eligible and included in this systematic review.
Interventions: The following PubMed MeSH terms were used for literature review: Leiomyomas - fibroids, myomectomy, complications, outcomes; Endometriosis - endometriosis, minimally invasive gynecologic surgery fellowship; and Complex Hysterectomy - complex MIS, Hysterectomy, obesity, outcomes, high volume, high volume gynecologic surgeon.
Measurements and Main Results: In instances where intraoperative and perioperative features may pose clinical challenges to the surgeon and ultimately the patient, the literature suggests the following scenarios may have adverse outcomes and therefore benefit from the skills of MIGS subspecialists: Fibroids - ≥5 myomas, myoma size ≥9cm, and suspected myoma weight ≥500g; Endometriosis - presence of endometrioma(s), suspected stage III/IV endometriosis, and requirement for advanced adjunct procedures; and Complex Hysterectomy - uteri ≥250g or 12 weeks estimated size, ≥3 prior laparotomies, obesity, and complex surgical history with suspected adhesive disease.
Conclusion: A referral system for MIGS subspecialists has proven benefits for both the gynecologic surgical community as well as the patients and their outcomes. This article provides evidence for collaboration with MIGS especially as it relates to leiomyomatous uteri, endometriosis, and complex hysterectomies.

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The Impact of Homemade Laparoscopic Box Trainers on Medical Student Surgical Skills: A Randomized Control Pilot Study

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Study Objective: While instructional videos are commonly used in surgical education, there is a paucity of data on home laparoscopic box trainers. This pilot study evaluated impacts of augmenting instructional videos with these devices.
Design: This was a randomized controlled pilot study evaluating laparoscopic surgical performance on the LapSim virtual surgical simulator before and after a two-week curriculum of instructional videos alone (n=8, 47.1%) versus videos plus a home laparoscopic box trainer (n=9, 52.9%). The LapSim recorded mistake number, time, and instrument path length to complete each task. Participants completed surveys about their perceptions of surgery before and after the course.
Setting: N/A.
Patients or Participants: Preclinical medical students were recruited. Those with extensive surgical experience or did not complete the course were excluded.
Interventions: Two-week curriculum of instructional videos alone versus videos plus a home laparoscopic box trainer.
Measurements and Main Results: For the box trainer group vs. the videos alone group: mean change in mistakes was -10.0 (standard deviation [SD]:17.1) versus +0.5 (SD:21.59) (p=0.28); mean change in time was -433.24 (SD:304.67) seconds versus -366.16 (SD:240.10) seconds (p=0.62); mean change in instrument path length was -4.27 (SD:4.38) meters versus -3.19 (SD:4.86) meters (p=0.64). The box trainer group ranked "I feel as though surgery comes naturally" 1.58 points higher (95% confidence interval [CI]: 0.85, 2.32; p<0.01) and "I am worried about being skilled at surgery" 1.26 points lower (95% CI: 2.29, -0.24; p=0.02) upon completing the study. The videos alone group reported no significant changes in survey responses.
Conclusion: Home laparoscopic box trainers can generate confidence and reduce anxiety regarding surgical fields. This study provides a framework for future larger scale works.

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Meta-Analysis of Veress Needle Entry Versus Direct Trocar Entry in Gynecologic Surgery

Marchand G.J.,[*,1] King A.,[2] Brazil G.,[3] Ulibarri H.,[1] Parise J.,[2] Coriell C.,[4] Arroyo A.,[2] Goetz S.,[4] Govindan L.,[4] Moir C.,[4] Sainz K.M.[3].*
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Study Objective: Although many studies have been performed, no consensus exists as to the ideal entry for laparoscopic gynecologic surgery. We sought out to compare the safety of direct trocar insertion with that of the Veress needle entry technique in gynecologic laparoscopic surgery. This is the largest analysis to date on this subject.
Design: Meta-Analysis.
Setting: Gynecologic laparoscopic surgery.
Patients or Participants: Randomized clinical trials comparing methods of laparoscopic initial entry.
Interventions: Inclusion criteria included women undergoing gynecological laparoscopic surgery, with the intervention of the direct trocar insertion technique compared with Veress needle entry technique.
Measurements and Main Results: The pooled analysis showed that Veress needle entry was associated with a significant increase in the incidences of extraperitoneal insufflation (RR=0.177, 95% CI[0.094, 0.333], p<0.001), omental injury (RR=0.418, 95% CI[0.195, 0.896], p<0.001), failed entry (RR=0.173, 95% CI [0.102, 0.292], p<0.001), and trocar site infection (RR=0.404, 95% CI[0.180, 0.909], p<0.029). There was no significant difference between the two groups regarding the visceral injury (RR=0.562, 95% CI[0.047, 6.676], p<0.648).
Conclusion: When excluding all data apart from gynecologic surgery, the Veress needle entry technique may have an increased incidence of some, but not all complications of laparoscopic entry. It may also have a higher incidence of failed entry compared to direct entry techniques. Care should be taken in extrapolating these general results to specific surgeon experience levels.

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Not All Operative Time Is Created Equal: Operative Time in Relation to 30-Day Complications in Benign Laparoscopic Hysterectomies

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Study Objective: To assess the relationship between operative time and specific 30-day postoperative complications across different tertiles of operation duration in total laparoscopic hysterectomies (TLH).
Design: A retrospective cohort study.
Setting: American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database from 2011-2020.
Patients or Participants: 131,141 TLH cases.
Interventions: Eligible cases included benign laparoscopic hysterectomies with operative times between 20 minutes and 499 minutes. We excluded cases involving disseminated cancer, emergency surgery, supracervical approaches, or concomitant procedures.
Measurements and Main Results: Multivariable logistic regression analysis demonstrated a significant association between operative time and complication occurrence for each complication type investigated, including unplanned readmission, urinary tract infections, superficial surgical site infections, blood transfusion administration, return to the operating room, and deep organ space infections. Multivariable logistic spline regression demonstrated that operative time contributed more strongly to the odds of a complication for shorter procedures than longer procedures. This relationship was more pronounced for major complications than minor complications.
Conclusion: Operative time is a stronger risk factor for developing complications for shorter duration procedures than longer procedures. This is especially evident in major complications such as return to the operating room and deep organ space infections. Our results suggest that longer procedure duration will not independently increase complication rates, and operative times should not be a primary factor in deciding to convert to laparotomy or alter post-operative management.

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Predicting Adenomyosis Diagnosis Based on MRI

Rees C.O.,[*,1,2,3] van der Wiel M.,[1] Nederend J.,[4] Huppelschoten A.,[1] Mischi M.,[2] van Vliet H.A.A.M.,[1,3] Schoot BC[1,2,3]. [1]Obstetrics and Gynaecology, Catharina Hospital, Eindhoven, Netherlands; [2]Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Reproductive Medicine, Ghent University Hospital, Ghent, Belgium; [4]Radiology, Catharina Hospital, Eindhoven, Netherlands*
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Study Objective: Development of a prediction tool for histopathological adenomyosis diagnosis after hysterectomy based on MRI and clinical parameters.
Design: Single-centre retrospective cohort study.
Setting: Gynaecological department of regional referral hospital from 2007-2022.
Patients or Participants: 296 women undergoing a hysterectomy for benign pathology with preoperative pelvic MRI.
Interventions: MRI's were retrospectively re-assessed for all possible adenomyosis markers (junctional zone (JZ) parameters, high signal intensity foci (HSI foci), uterine size) in a blinded fashion by two researchers. Sensitivity, specificity, positive predictive value, negative predictive value, diagnostic accuracy, and odds ratio (dOR) were calculated. Threshold values of continuous variables were investigated using Receiver Operator Characteristics (ROC) curves and Area Under the Curve (AUC). A multivariate regression model for histopathological adenomyosis diagnosis was developed based on selection of MRI and clinical variables from univariate analysis with p>0.10 and factors determined to be of clinical importance.
Measurements and Main Results: 131 women (44.3%) had histopathological adenomyosis. In univariate analysis, patients had comparable age at hysterectomy, BMI and clinical symptoms, p>0.05. Patients with adenomyosis had more often undergone a curettage (221% vs. 8.9%, p=0.002), and had a higher mean JZ (9.35mm vs. 8.00, p=0.001), maximal JZ (15.05mm vs. 12.45mm, p=0.002), mean JZ to myometrium ratio (0.53 vs. 0.48 p=0.009) and JZ differential (8.45mm vs, 6.75mm, p=0.009). Presence of HSI foci on MRI was quasi-pathognomic for adenomyosis diagnosis (25.5% vs. 2.4%, p<0.001).
A predictive model based on the parameters of: Age at MRI, History of Curettage, Dysmenorrhoea, Hypermenorrhoea, Mean JZ, JZ differential, JZ/Myometrium ratio, Presence of HSI Foci was created, with a good AUC of 0.761.
Conclusion: This is the first study to create a clinical diagnostic tool based on a combination of MRI and clinical parameters for adenomyosis diagnosis. As preoperative imaging-based diagnosis of adenomyosis remains challenging, this model, after sufficient external validation, could function to become a useful clinical-decision making tool in women with suspected adenomyosis.

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Uterine Surgery and Risk of Adenomyosis: A Retrospective Study

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*Corresponding author.

Study Objective: To determine an association between adenomyosis and history of uterine surgery, including cesarean section, dilation & curettage (D&C), and myomectomy. Also, if repeat uterine surgery increases the risk of adenomyosis development.
Design: Retrospective case control study.
Setting: Large academic center, Parkland Hospital in Dallas, TX.
Patients or Participants: Data was collected from electronic medical records of women who underwent hysterectomy for benign indications at Parkland Hospital between January 2014-December 2018. A total of 2911 women were included, 1184 with adenomyosis and 1727 without adenomyosis.
Interventions: Variables included gravidity/parity, number of vaginal deliveries, number of cesarean sections, number of D&C procedures, and number of myomectomies. Pathology of uterine specimens were noted for presence of adenomyosis, leiomyomata, and endometriosis. Non-parametric rank sum test compared medians of continuous variables, Chi-square or Fisher exact tests compared categorical variables. Logistic regression was used to generate odds ratios for adenomyosis and clinical factors.
Measurements and Main Results: History of any uterine surgery was associated with an increased risk of adenomyosis (OR 1.28, 95% CI 1.11-1.49). Patients with a history of D&C were significantly more likely to have adenomyosis on pathology (OR 1.57, 95% CI 1.30-1.90). Repeat D&C was also associated with increased risk of adenomyosis (OR 1.31, 95% CI 1.01-1.72). The association between history of prior cesarean section and adenomyosis was not statistically significant (OR 1.12, 95% CI 1.00-1.37). A history of myomectomy was not significantly associated with adenomyosis (OR 0.95, 95% CI 0.59-1.54).
Conclusion: Of the risk factors explored, history of any uterine surgery, D&C and repeat D&C were associated with an increased risk of adenomyosis. However, there was not a significant association between history of cesarean section or increasing numbers of repeat cesarean delivery with the development of adenomyosis. This is the largest known retrospective study thus far investigating this association and we concluded that cesarean sections do not individually increase the risk of adenomyosis.

ORAL SESSION 10 - ADENOMYOSIS & Pelvic Pain
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Does Leuprolide Acetate Predict Successful Pain Relief after Hysterectomy and BSO in Endometriosis Patients?

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Study Objective: Evaluate whether patients with endometriosis-associated pelvic pain who achieve pain relief with leuprolide acetate are more likely to achieve pain relief after hysterectomy and oophorectomy (BSO).
Design: Retrospective chart review.
Setting: Academic teaching hospital.
Patients or Participants: Patients who underwent trial of leuprolide acetate prior to hysterectomy and BSO for endometriosis.
Interventions: We performed a retrospective chart review of patients from 2015-2021 who had a diagnosis of endometriosis and underwent a trial of leuprolide acetate prior to hysterectomy with BSO for pelvic pain (n=31).

We reviewed pre-operative records, operative notes, and postoperative records to assess whether patients achieved pain relief following ovarian suppression with leuprolide acetate or definitive surgical management with hysterectomy and oophorectomy. Patients who achieved complete pain relief with leuprolide acetate or hysterectomy with oophorectomy were considered having achieved “complete pain relief”.
Measurements and Main Results: 31 patients underwent a trial of leuprolide acetate prior to hysterectomy and BSO for endometriosis. Fifteen patients reported "complete pain relief" with leuprolide acetate therapy and 16 did not. The groups were similar in age, ethnicity, race, BMI, parity, number of past treatments for pelvic pain, mode of hysterectomy, blood loss during surgery, presence of adhesions, and surgical complications. There was a significant difference between the two groups as to whether they achieved complete pain relief after hysterectomy with BSO. Among patients with complete pain relief after leuprolide acetate therapy, 73.7% reported complete pain relief after surgery. In patients who did not experience complete pain relief with leuprolide acetate therapy, only 37.5% reported complete pain relief after surgery (p=.045).
Conclusion: Patients who had complete preoperative pain relief using leuprolide acetate were more likely to achieve pain relief with hysterectomy and BSO. A trial of leuprolide acetate prior to surgery may be helpful to predict which patients will benefit from hysterectomy and BSO for endometriosis-related pelvic pain.

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Maintenance Dienogest Therapy Following Adjuvant GnRH Agonist Treatment after Uterus-Sparing Surgery in Adenomyosis

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Study Objective: To investigate the safety and efficacy of combined adjuvant gonadotropin-releasing hormone agonist (GnRH-a) treatment followed by maintenance Dienogest (DNG) therapy after uterus-sparing surgery.
Design: A retrospective single-center observational study (Canadian Task Force classification II-2).
Setting: An academic tertiary hospital.
Patients or Participants: A total of 190 patients with severe symptomatic adenomyosis underwent uterus-sparing surgery between January 2010 and June 2020. Of these patients, 90 were eligible for this retrospective cohort study.
Interventions: Forty-six patients (reference group) received adjuvant 6-month GnRH-a therapy alone after uterus-sparing surgery, and 44 patients (maintenance group) received postoperative 6-month GnRH-a treatment followed by maintenance DNG therapy (2 mg per day orally). The median follow-up period was 18 months. The study was analyzed with the use of generalized estimating equations (GEE).
Measurements and Main Results: At baseline, the characteristics of patients in each group were comparable. Compared to the reference group, the maintenance group had a statistically significant improvement in the visual analog scale score of dysmenorrhea, hemoglobin level, and uterine volume from baseline to 18 months after uterus-sparing surgery. The symptom recurrence rate was statistically significantly lower in the maintenance group than in the reference group (4.6% vs. 37.0%, $P<0.001$).
Conclusion: The findings of this study suggest that combined adjuvant GnRH-a treatment and maintenance DNG therapy provided a safe and an effective short-term therapy after uterus-sparing surgery for adenomyosis.

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Radiofrequency Ablation for Treatment of Adenomyosis: A Systematic Review

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Study Objective: To review and synthesize the existing literature regarding short- and long-term outcomes following radiofrequency ablation (RFA) for the treatment of diffuse and focal adenomyosis. We also evaluated post-RFA treatment complications and reproductive outcomes.
Design: Systematic review.
Setting: Not applicable.
Patients or Participants: All studies examining RFA treatment for symptomatic, imaging-diagnosed adenomyosis in adult women with ≥10 participants per group, both comparative and non-comparative, were included. Studies in any country/setting and in English were also included.
Interventions: We conducted a systematic review of all studies examining the use of RFA for treatment of adenomyosis which reported clinical, patient-reported, or reproductive outcomes, and complications. A literature search was performed using the Medline, EMBASE, and Cochrane databases from inception to July 20, 2021.
Measurements and Main Results: 2948 abstracts were doubly reviewed, followed by review of 279 full-text articles. 7 studies met inclusion criteria. The majority were single-arm studies examining RFA, while two studies were comparative. 4 studies examined transcervical RFA, 2 studies examined transabdominal RFA and 1 study examined percutaneous adenomyolysis. Post-RFA treatment, significant decreases were seen in global uterine volume and focal adenomyosis volume at 6- and 12-months. Significant decreases in reported pain scores (visual analogue scale) and symptom severity scores were also seen at 6- and 12-months post-procedure. The likelihood of a serious adverse event was low. The post-procedure reintervention rate ranged from 1.6% to 39.5%, with 1.6% to 9.9% of patients undergoing hysterectomy. Only 1 included study reported reproductive outcomes and noted a clinical pregnancy rate of 35.8% post-RFA treatment.
Conclusion: The currently available data suggest that RFA can be a safe and effective treatment for adenomyosis, causing volumetric reduction in the size of affected uteri and focal adenomyosis lesions, and improving pain and bleeding with a low rate of severe adverse events. Following RFA treatment, up to 9.9% of patients undergo hysterectomy. Reproductive outcome data post-RFA treatment are limited.

ORAL SESSION 10 - ADENOMYOSIS & Pelvic Pain
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Reduction in Dysmenorrhea after the Minitouch Office Endometrial Ablation Procedure

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Study Objective: To review changes in dysmenorrhea pain scores of the subjects who underwent the Minitouch Procedure for the treatment of heavy menstrual bleeding.
Design: Evaluate the change in dysmenorrhea pain scores of the 114 subjects who underwent the Minitouch Office Procedure in a prospective, multicenter, single-arm, open label, pivotal clinical trial.
Setting: Physician's Office - 5 US sites.
Patients or Participants: 114 premenopausal women with a history of heavy menstrual bleeding and a Pictorial Blood Loss Assessment (PBLAC) score >150. The demographics were as follows - mean ± SD (range): age 41.6 ± 4.6 (30-50) years, parity 2.3 ± 1.1 (0-5), sounding depth 8.6 ± 1.1 (7.0-11.0) cm, uterine cavity length 5.2 ± 0.8 (4.0-7.0) cm, and endometrium thickness 9.5 ± 4.2 (3.0-23.4) mm.
Interventions: Minitouch Office Endometrial Ablation Procedure for the treatment of heavy menstrual bleeding.
Measurements and Main Results: Dysmenorrhea was recorded using a numerical rating scale (NRS) pain score of 0-10 at screening, and at 3-, 6-, and 12-months post-procedure. The mean (range) dysmenorrhea scores changed from 6.1 (0-10) at screening, to 1.4 (0-8), 0.9 (0-6) and 0.8 (0-6) at 3-, 6- and 12-months post-procedure, respectively. The percentage of subjects with moderate to severe dysmenorrhea (score 4 to 10) changed from 82% (93/114) at screening to 4% (5/114) at 12 months. The percentage reporting no pain (score 0) changed from 4% (5/114) at screening to 67% (76/114) at 12 months. 94% (107/114) of the subjects reported reduction in their individual dysmenorrhea pain score, from an average 6.4 (1-10) at screening to 0.7 (0-6) at 12 months. 3% (3/114) of the subjects with an individual average score 0.7 (0-2) reported no change.
Conclusion: The Minitouch Office Procedure resulted in significant reduction in dysmenorrhea pain scores of the subjects treated for heavy menstrual bleeding.

ORAL SESSION 10 - ADENOMYOSIS & Pelvic Pain (2:00 PM — 3:05 PM)

2:45 PM

Quantitative Ultrasound Measurement of Endometrial Waves in Adenomyosis Versus Women with Normal Uteri - the Waves Study

Rees C.O.,[*,1] *Huang Y.,*[2] *De Boer A.,*[1] *Wessels B.,*[2] *Huppelschoten D.A.,*[1] *Zizolfi B.,*[3] *di Spiezio Sardo A.,*[3] *Christoforidis N.,*[4] *van Vliet H.A.A.M.,*[1,5] *Mischi M.,*[2] *Schoot B.C.*[1,2,5]. [1]*Obstetrics and Gynaecology, Catharina Hospital, Eindhoven, Netherlands;* [2]*Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands;* [3]*Public Health - School of Medicine, University of Napel Federico II, Naples, Italy;* [4]*Embryolab Fertility Center, Thessaloniki, Greece;* [5]*Reproductive Medicine, Ghent University Hospital, Ghent, Belgium*
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Study Objective: Measurement and analysis of uterine contractions by quantitative 2D transvaginal ultrasound measurements in women with abnormal uteri due to adenomyosis versus women with normal uteri.
Design: Multi-centre prospective observational cohort study.
Setting: Outpatient gynaecology department of participating centres.
Patients or Participants: 29 women with adenomyosis with a natural menstrual cycle were compared to 70 women with normal uteri and regular menstrual cycles. Patients were included from September 2014 up to January 2022.
Interventions: Patients underwent a 4-minute 2D transvaginal ultrasound of the uterus in mid-sagittal section. Uterine motion analysis was implemented by a dedicated speckle tracking and strain analysis algorithm; with frequency, amplitude, coordination and velocity -related features extracted from the derived signals to characterise the uterine contractions. Measurements were carried out at different points of the menstrual cycle (menstrual, early follicular, periovulatory and early and late luteal phases.
Measurements and Main Results: Results differed most significantly between groups in the periovulatory phase, with women with adenomyosis showing lower frequency (1.44 vs. 1.79 contractions/minute, p=0.025), higher amplitude (0.09 vs. 0.04, p=0.000) and lower velocity of uterine contractions (0.62 vs. 0.83 mm/sec, p=0.0008). In the menstrual phase, women with adenomyosis showed a trend toward higher contraction frequency (1.37 vs, 1.33 contractions/minute, p=0.592), amplitude (0.05 vs. 0.04, p=0.259) and velocity (0.72 vs. 0.67, p=0.456). Across all phases, women with adenomyosis showed a trend towards reduced contraction coordination (0.23-0.34 vs. 0.15-0.26). This being statistically significant in the late luteal phase (p=0.018).
Conclusion: Our results confirm differences in uterine movement in abnormal versus healthy uteri. This could add to the aetiological understanding of clinical symptoms of these conditions (i.e. dysmenorrhoea or infertility). The notable difference between groups regarding coordination identifies this feature as a potential prognostic or therapeutic marker. Further research in women with (other) benign uterine disorders will hopefully lead to a better understanding of the clinical implications of abnormal uterine contractility.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy
(3:15 PM — 4:20 PM)

3:18 PM

Retrograde Bladder Filling after Outpatient Gynecologic Surgery: A Systematic Review and Meta-Analysis

Thiel P.S.,[*,1] *Mathur S.,*[2] *Zakhari A.,*[3] *Matelski J.,*[4] *Walsh C.,*[5] *Murji A.*[6,7].
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Study Objective: To systematically review and meta-analyze randomized controlled trials (RCTs) comparing postoperative bladder retrofilling to passive filling after outpatient gynecologic surgery to evaluate effects on postoperative outcomes.
Design: Systematic review and meta-analysis.
Setting: N/A.
Patients or Participants: Two reviewers screened 1465 articles after searching MEDLINE, PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, and ClinicalTrials.gov from 1947 to August 2020. We included RCTs comparing postoperative bladder retrofilling to passive filling in patients who underwent outpatient gynecologic surgery by any approach. The primary outcome was time to first void. Secondary outcomes included time to discharge, postoperative urinary retention, urinary tract infection, and patient satisfaction.
Interventions: N/A.
Measurements and Main Results: We included eight studies with 1173 patients. Bladder retrofilling in the operating room resulted in a significant decrease in time to first void (mean difference (MD) −33.5 minutes; 95% confidence interval (CI): −49.1 to −17.9, 4 studies, 403 patients) and time to discharge (MD −32.0 minutes; 95% CI: −51.5 to −12.6, 8 studies, 1164 patients). Bladder retrofilling did not shorten time to discharge when performed in the post-anesthetic care unit (MD −14.8 min; 95% CI: −62.6 to 32.9, 3 studies, 258 patients) or after laparoscopic hysterectomy (MD −26.0 min; 95% CI: −56.5 to 4.5, 5 studies, 657 patients). There were no differences in patient satisfaction, postoperative urinary retention, or risk of urinary tract infection between groups.
Conclusion: Retrofilling the bladder in the operating room after outpatient gynecologic surgery reduces the time to first void and discharge with no increase in adverse events.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy
(3:15 PM — 4:20 PM)

3:25 PM

Predictive Model for Complications in Minimally Invasive Hysterectomy: A Retrospective Single Cohort Analysis

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Study Objective: To create a predictive model score by estimating rate of intra-operative and post-operative complications and by defining the risk of 30-day major post-operative complications (Clavien-Dindo≥3) according to the presence of 10 different variables analyzed at the time of minimally invasive (MI) hysterectomy.
Design: A single center single-arm retrospective study. Data of consecutive patients who have undergone MI hysterectomy between May 2018 and April 2021 have been analyzed. Perioperative surgical outcomes, occurrence of intra- and post-operative complications, 30 days-readmissions were registered. Univariate and multivariable analyses were performed.
Setting: Miulli's Hospital surgery rooms (Bari).
Patients or Participants: 445 patients were included in the study.
Interventions: A standardized surgical approach of MI hysterectomy was adopted by laparoscopic or robotic-lps assisted approach.
Measurements and Main Results: The majority of patients developed a minor event. Major complications (grade III) were observed in 14 patients. The percentage of intraoperative and postoperative complications (Clavien-Dindo classification) was: 44 patients (9.88%) showed a related surgical complication. None showed a grade IV or V complication. Univariate analysis was performed on patients who had developed intra- or post-operative complications from those who did not experience complications. BMI (p-value 0.045) and surgeon's experience (p-value 0.015) were found to be associated with a different surgery time. No one clinic-pathological characteristics were found to be correlated with complications. About major postoperative complications, it was found a statistically significant association for the variables BMI (p-value 0,006), previous surgery (p-value 0,015), and surgeon experience (*p*-value 0,035). The three significant variables were inserted in a reproducible predictive model in order to stratify the risk of post-operative complications: the score of our predictive model was directly proportional to the severity of complications.
Conclusion: MI hysterectomy should be considered as a safe approach, and it's associated with a low risk of intra- and post-operative complications. Overall, we developed a risk assessment tool including factors not previously considered in the Literature.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy
(3:15 PM — 4:20 PM)

3:32 PM

Laparoscopic Management of Abnormally Invasive Retained Products of Conception.

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Study Objective: To present the clinical and reproductive results of patients with non-traditional surgical treatment of retained products of conception (RPOC).
Design: Retrospective analysis of prospectively followed data.
Setting: 3D laparoscopic procedures with the use of general anesthesia, Trendelenburg position, 4 ports and standard instruments.
Patients or Participants: All patients diagnosed in our institution (between 2012 and 2022) with intramural location of RPOC with minimal diameter 2.5 cm were enrolled and prospectively followed with focus on symptoms, complications, and further pregnancies.
Interventions: All patients had hysteroscopy (to rule out predominantly intracavitary presence of RPOC) followed by laparoscopic resection of RPOC under the guidance of transvaginal ultrasound. Laparoscopic

reconstruction of the uterine cavity and muscularity was performed with the use of double layer continuous suture. Second-look hysteroscopy was performed from 1 to 2 months post-procedurally.
Measurements and Main Results: 16 women with the mean age of 36 years (from 22 to 46) were enrolled: 8 with the history of induced or missed abortion including curettage, 7 after term, and 1 after preterm delivery. Ten patients (63%) were symptomatic (bleeding) prior to treatment; blood concentrations of hCG were negative in all. We performed successful laparoscopic resection of RPOC with mean blood loss 270mL, uneventful post-operative course and histological verification of benign necrotic chorionic villi in all cases. Adhesiolysis of minimal or mild intrauterine synechiae was performed by second-look hysteroscopy in 6 women (38%). Two uncomplicated pregnancies with term elective Caesarean deliveries have been recorded so far. The mean length of follow-up was 33,4 months (from 1 to 117).
Conclusion: Based on our results, with limited number of patients but to our best knowledge the largest such series of patients in literature, the laparoscopic management of invasive RPOC seems to be effective, feasible, and mini-invasive alternative of fertility sparing treatment. Larger, prospective studies are needed to verify the benefits and risks in compare with conservative approach.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy
(3:15 PM — 4:20 PM)

3:39 PM

What Do Women Want? Hysterectomy

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Study Objective: We set out to explore patients' perceptions regarding hysterectomy.
Design: A nationwide quantitative survey study.
Setting: USA-based patient-filled online survey.
Patients or Participants: Women expecting a hysterectomy (preoperative group) or who had a hysterectomy in the past ten years (postoperative group) were recruited via an online banner.
Interventions: N/A.
Measurements and Main Results: 296 preoperative and 130 postoperative patients completed a survey regarding their perceptions on hysterectomy, sources of information, preferred surgical approach, personal view of surgical outcomes and complications, and their considerations when choosing a surgeon. Most participants were 45-64-year-old (55.74%, 69.23%; preoperative and postoperative, respectively). The most frequent surgical approach was laparoscopic (43%, 37%) followed by robotic (7%, 21%), abdominal (18%, 24%), and vaginal (21%, 18%). Most patients didn't seek a second opinion (38%, 52%) or received a second opinion that didn't change their plan (18%, 34%). The most important surgical outcomes in both groups were a low complication rate (47.6%), short recovery time (24.2%), and low postoperative pain (25.6%). The importance of the abdominal scar decreased with age. Postoperative pain was more important preoperatively, whereases recovery time was more appreciated postoperatively. When choosing a surgeon, the most notable factors are the surgeon's experience, insurance and out-of-pocket costs, and recommendations from other providers. The patients' favorite approach is robotic-assisted laparoscopy (44.9%, 56.9%) compared with vaginal (35.14%) and abdominal approach (19.9%).
Conclusion: Hysterectomy is the most common non-obstetrical surgical procedure for women in the United States. However, very few evidence-based studies include patient-centered data. Patients' perspectives and goals may differ from the clinical definition of a favorable surgical outcome. This is the first large-scale nationwide quantitive survey study, without interviewer mediation, to describe patients' perceptions of hysterectomy. We describe a preference for the robotic approach and prioritization of low complication rate, fast recovery time, and low postoperative pain. Additional large-scale patient-centered studies are required to confirm and generalize these results.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy
(3:15 PM — 4:20 PM)

3:46 PM

Laparoscopic Uterosacral Bupivacaine Injection during Minimally-Invasive Hysterectomy: A Single-Blinded Randomized Controlled Trial

Frost A.S.,[*,1] *Kohn J.R.,*[2] *Le Neveu M.,*[2] *Brah T.K.,*[1] *Okonkwo O.,*[3] *Simpson K.,*[1] *Wu H.Y.,*[1] *Patzkowsky K.E.,*[1] *Wang K.C.*[1]. [1]*Division of Minimally Invasive Gynecologic Surgery, Johns Hopkins School of Medicine, Baltimore, MD;* [2]*Department of Gynecology and Obstetrics, Johns Hopkins Medicine, Baltimore, MD;* [3]*Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD*
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Study Objective: To determine the effect of laparoscopic uterosacral bupivacaine injection on post-operative pain and opioid usage in patients undergoing minimally invasive hysterectomy.
Design: Single-Blinded, Triple-Arm, Randomized Controlled Trial.
Setting: Academic Hospital Center.
Patients or Participants: Patients undergoing benign MIGS hysterectomy between 3/15/2021 and 4/8/2022. Exclusion criteria: conversion to laparotomy, bupivacaine allergy, concurrent procedures, supracervical hysterectomy, TAP block, preoperative opioid usage, non-English speaking.
Interventions: Patients were randomized in a 1:1:1 fashion to the following before colpotomy: no injection, 20cc normal saline, or 20cc of 0.25% bupivacaine. All patients received incisional infiltration with 10cc 0.25% bupivacaine. Post-operative pain scores, total opioid consumption and return of bowel function were recorded via Qualtrics surveys.
Measurements and Main Results: Of 360 hysterectomies screened, 298 were eligible (83%), 161 (45%) agreed to participate, and 125 were ultimately included in interim analysis. The majority of hysterectomies were performed laparoscopically (91, 73%) and the remainder robotically. Most hysterectomies were discharged home POD#0 (116, 93%). Patients randomized to placebo had a lower proportion of public insurance and higher proportion of mood disorders. There was a statistical difference in the proportion of cases that required morcellation between bupivacaine and no injection (43% vs 18%, p=0.038; no difference between bupivacaine and saline, 43% and 32%, p=0.87).
In regression controlling for surgical approach, administration of Toradol, and time from injection to discharge, mean pain scores on VAS at time of discharge were statistically lower in the bupivacaine group compared to placebo (-1.09, p=0.033) or no injection (-1.15, p=0.023). There was no difference between groups in PACU OME administration or post-operative OME usage, day of last use, or return of bowel function.
Conclusion: Laparoscopic uterosacral injection of bupivacaine at the time of MIS hysterectomy results in decreased post-operative VAS pain scores, although without a difference in post-operative opioid consumption. Complete trial data to be available at the time of AAGL.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy
(3:15 PM — 4:20 PM)

3:53 PM

Risk Factors Associated with Blood Transfusion in Laparoscopic Hysterectomy

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Study Objective: To identify risk factors associated with perioperative blood transfusion in patients undergoing laparoscopic hysterectomy for any reason.
Design: Retrospective case-control study conducted between 01/01/2001 and 09/01/2019.
Setting: Large tertiary care center and its associated community referral hospital.
Patients or Participants: All patients who underwent laparoscopic hysterectomy for benign and malignant indications were included.
Interventions: N/A.
Measurements and Main Results: Medical records were reviewed using a centralized clinical data registry. Cases were defined as patients who received a perioperative red blood cell transfusion (72 hours before or after surgery). Differences between groups were analyzed using an independent samples t-test for means, Wilcoxon rank sum test for medians, and chi-square for categorical variables. Among the 8,321 patients who underwent laparoscopic hysterectomy, 61 (0.73%) had a perioperative transfusion. Age and smoking status were similar between groups; however, cases were more likely to be African-American, Asian, have a body mass index greater than 30 and be publicly insured or without insurance ($p<0.05$). Other variables associated with increased risk for transfusion included a diagnosis of abnormal uterine bleeding, coronary artery disease, history of dialysis or stage IV kidney disease, congestive heart failure or cerebrovascular disease, or active use of a blood thinner ($P <0.05$). Laparoscopic-assisted vaginal hysterectomy as a mode of surgery was also associated with transfusion ($P<0.05$). Of those who received a transfusion, 23 (37.1%) were performed intraoperatively (7 for preoperative anemia, 13 for large intraoperative blood loss, 2 for vascular injury and 1 for unknown reasons). Conversion to open laparotomy occurred in 27 cases, of which 5 underwent transfusion.
Conclusion: Our findings identify a subset of patients who are at higher risk of blood loss prior to laparoscopic hysterectomy and thus may benefit from a specific pre-operative transfusion preparedness strategy.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy (3:15 PM — 4:20 PM)

4:00 PM

Intrauterine Anesthesia in See and Treat Hysteroscopy − A Double Blind, Placebo Controlled Randomized Trial

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Study Objective: The primary aim of the current study is to evaluate the effect of local instillation of lidocaine in relieving pain during office operative hysteroscopy without anesthesia. Secondary aims include the rate of failure in performing the procedure and patient satisfaction among patients in the study group vs. controls.
Design: A randomized double-blind placebo-controlled study.
Setting: A university-affiliated hospital; office hysteroscopy clinic.
Patients or Participants: A Total of 100 patients who underwent operative office hysteroscopies were randomized with 50 in the intervention group and 50 in the control group.
Interventions: Ten mL of lidocaine 2% added to 1000 mL of saline solution that was used as the distension medium for hysteroscopy in the study group vs 1000 mL of saline alone in the control group.
Measurements and Main Results: Eighty-eight patients completed the study and were included in the analysis. The main pathology treated was retained products of conception (55 cases). A significant difference was found in the increment of pain level following the procedure measured by visual analog scale during operative stage of see and treat hysteroscopy ($p=.027$) and at the completion of the procedure ($p=.032$) between two groups.
Patients' satisfaction level was similar between the two groups (88.8% for the study group and 89.3% for the control group). Success rates were also similar between the two groups at approximately 93%. No side effects were recorded in either group.
Conclusion: The addition of local anesthetic to the distension medium operative office hysteroscopy produces significant reduction in pain during and following the procedure without side effects.

ORAL SESSION 11 - LAPAROSCOPY & Hysteroscopy (3:15 PM — 4:20 PM)

4:07 PM

Surgical and Reproductive Outcomes in Patients with Complete Septate Uterus and Cervical Anomalies after Metroplasty

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Study Objective: to evaluate surgical and reproductive outcomes in patients with complete uterine septa with or without cervical anomalies undergone hysteroscopic metroplasty.
Design: Multicenter prospective observational cohort study.
Setting: Gynecological departments of participating centers.
Patients or Participants: 64 infertile women with ultrasonographic and hysteroscopic diagnosis of complete septate uterus with or without cervical anomalies (group A: U2bC1 + U2bC2 (n=34); group B (n=30): U2bC0 according to ESHRE/ESGE classification system) from January 2018 to December 2021.
Interventions: in-patient hysteroscopic metroplasty with 26Fr or 15Fr resectoscope or 5mm hysteroscope with 5Fr instruments; a second surgical step was performed when at postsurgical 3D ultrasonography a residual septum was detected ($Y + Z > 15$ mm).
Measurements and Main Results: Surgical outcomes (operative times; intra- and post-operative complications; surgical satisfaction); Reproductive outcomes (clinical pregnancy rate [CPR], live birth rate [LBR], miscarriage rate [MR]). All the surgical procedures were performed without any significant complication. 18/27 (67%) patients in group A and 9/18 (50%) in group B required a second surgical step. Operative times were statistically lower in group B (12.4 min ± 2 SD vs 27min ± 8 SD, p-value:0.034); less surgical difficulty was reported by clinicians in group B. Reproductive outcomes were evaluated for 36 patients (mean follow-up 20 months) and have shown significant differences between two groups; indeed, CPR was 36% in group A and 64% in group B (p. value 0.01).
Conclusion: Hysteroscopic metroplasty is an effective and safe procedure for the treatment of complete septate uterus with or without cervical abnormalities; a second surgical step is often required for the optimal treatment of these anomalies. Surgical outcomes are better in the group of patients without cervical anomalies, regardless of the instrumentation used. The presence of cervical anomalies seems to significantly affect reproductive outcomes.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

3:18 PM

Laparoscopic Nerve Detrapment and Neurolysis of Somatic Pelvic Nerves in Deep Endometriosis: Prospective Study of 433 Patients

Clarizia R.,[1,] Manzone M.,[2] Roviglione G.,[1] Bruni F.,[3] Ceccarello M.,[3] Mautone D.,[3] Staffa G.,[4] Zorzi C.,[5] Ceccaroni M.[1]. [1]Gynecology and Obstetrics, Gynecologic Oncology, Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, IRCCS Sacro Cuore Don Calabria Hospital, Negrar di Valpolicella, Verona, Italy; [2]Obstetrics and Gynecology, Gynecologic Oncology, Minimally Invasive Pelvic Surgery, IRCCS Sacro Cuore Don Calabria Hospital, Negrar di Valpolicella, Italy; [3]Gynecology and Obstetrics, Gynecologic Oncology, Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, IRCCS Sacro Cuore Don Calabria Hospital, Negrar di Valpolicella, VERONA, Italy; [4]Peripheral Nerve Unit, Department of Neurosurgery, Maria Cecilia Hospital, GVM Group, Cotignola, Italy; [5]Orthopaedics, IRCCS Sacro Cuore Don Calabria Hospital, Negrar di Valpolicella, Italy*
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Study Objective: To review efficacy and feasibility of laparoscopic decompression and neurolysis for cases of endometriosis involving sacral plexus and/or somatic nerves causing somatic compression and ano-genital pain on a large case series.
Design: Prospective case-series, single-centre, single-surgeon study on 433 patients. In a 7-year period.
Setting: Department of Obstetrics and Gynecology, Gynecologic Oncology and Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, Sacred Heart Hospital, Negrar, Verona - Italy; 7-years period
Patients or Participants: 433 patients with deep infiltrating endometriosis complaining of recurrent sciatica and ano-genital pain in addition to "usual" endometriosis symptoms
Interventions: (A) medial approach for deep pelvic endometriosis with rectal and/or parametrial involvement extending to pelvic wall and somatic nerve; (B) lateral approach for isolated endometriosis of pelvic wall and somatic nerves. All the procedures were performed by a gynecologic pelvic surgeon skilled in neuro-anatomy (M.C.)
Measurements and Main Results: All the treated patients showed laparoscopic and pathology report evidence of compression above the somatic nervous structures, requiring decompression, whereas in 145 (33,5%) patients, there was clear infiltration of those structures, deepening to the perineural and axonal planes. Complete relief from neurologic symptoms was achieved in all patients at 6 months after surgery, post-operative neuritis was reported in 62 patients (14.3%).
Conclusion: Pelvic wall spread of deep infiltrating endometriosis might be more usual than thought. Laparoscopic retroperitoneal nerve-sparing approach to endometriosis extending to the pelvic wall with somatic nerve compression proved to be a feasible and safe procedure, effective in pain relief, recovery of impaired neurological functions and neuromotoric impairment motoric symptoms of the pelvis and the leg related to endometriosis. It should be limited to referral laparoscopic centres lead by surgical neuro-anatomy skilled surgeons.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

3:25 PM

Determinants of Perioperative Complications in Day-Surgery for Endometriosis: A Retrospective Cohort

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*Corresponding author.

Study Objective: In this study, we aimed to evaluate the potential determinants of perioperative complications in day surgeries for endometriosis.
Design: A retrospective cohort study.
Setting: N/A.
Patients or Participants: We used data from the Canadian administrative data from the National Ambulatory Care Reporting System (NACRS) maintained by the Canadian Institute for Health Information (CIHI). 16,982 women aged 15-44 years undergoing day-surgery for endometriosis between 2015 and 2019 were eligible.
Interventions: Surgeries were categorized as minor conservative (e.g., biopsy or minor adhesiolysis) or major conservative surgeries (e.g., lesion excision or resections) or hysterectomies.
Measurements and Main Results: 16,982 patients underwent day-surgery over the five-years study period. We observed a higher risk of complications associated with greater age (OR=1.58; 95%CI 1.26-1.98); hysterectomies (OR=2.29; 95%CI 1.73-3.06); lesions of the bowel or urinary tract system (OR=1.54; 95%CI 1.16-2.06), and extra-pelvic sites of endometriosis (OR=1.24; 95%CI 1.07-1.52); and with centers of higher volume (OR=1.59; 95%CI 1.09- 2.32). The odds of infections were higher among patients undergoing hysterectomies (OR=8.56; 95%CI 4.70- 15.59); and lower among patients with ovarian endometriosis (OR=0.44; 95%CI 0.24- 0.78). The odds of renal complications were significantly higher among older patients (OR=1.57; 95%CI 1.01- 2.45), and among patients with lesions in miscellaneous sites (OR=1.75; 95%CI 1.24- 2.48). The odds of complications such as accidental cut, puncture, perforation, or laceration were higher in older patients (OR=1.57; 95%CI 1.18- 2.10); among those undergoing major conservative surgery (OR=1.57; 95%CI 1.31- 1.89) or hysterectomy (OR=2.31; 95%CI 1.70- 3.14); in the context of bowel or urinary tract system endometriosis (OR=1.84; 95%CI 1.43 -2.37); and in high-volume centers (OR=1.82; 95%CI 1.22- 2.72).
Conclusion: Age, hysterectomy, endometriosis of the bowel, urinary tract system and extra-pelvic sites, and high-volume center increase the risk of complications. Determinants of complications can inform care by improving the recognition of patients at greater risk.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

3:32 PM

The Use of Indocyanine Green (ICG) in the Detection of Endometriosis-Related Fibrosis and Inflammatory Changes

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Study Objective: Indocyanine green (ICG), a dye that fluoresces in areas of increased vascularity, has been shown to aid in the identification of endometriosis in otherwise normal-appearing or ambiguous 'clear' lesions. Fibrosis and inflammation involve vascular processes known to play a significant role in the natural history and pathogenesis of endometriosis. The aim of this study is to determine if ICG can detect fibrosis or inflammatory changes seen on histopathology, and to determine if such histopathologic evidence of fibrosis is associated with endometriosis.

Design: Retrospective chart review.
Setting: A community-based hospital.
Patients or Participants: Women ranging from ages 18-50 undergoing minimally invasive surgery using ICG for the diagnosis and treatment of suspected endometriosis between July 2014 to February 2022.
Interventions: Robotic-assisted resection of areas visualized using ICG fluorescence.
Measurements and Main Results: Of the 64 patients in this study, a total of 211 peritoneal biopsies from the pelvis were examined on pathology for presence of fibrosis and endometriosis. The use of ICG fluorescence demonstrated a sensitivity of 97.4% in detecting fibrosis and inflammatory changes with a negative predictive value (NPV) of 86.7%. A Chi-square statistical test was performed to calculate a significance value of 5.07 (p=0.024). Based on the chi-square result, the presence of fibrosis detected using ICG fluorescence is significantly associated with the histopathological diagnosis of endometriosis.
Conclusion: ICG fluorescence demonstrates high sensitivity and NPV in detecting fibrosis and inflammatory change which is also significantly associated with histopathological evidence of endometriosis. These findings support the growing literature that propose that fibrosis and inflammatory changes are inherently related to the natural history and pathogenesis of endometriosis. These findings may suggest that the presence of fibrosis in the absence of glands and stroma on histopathology does not definitively rule out a diagnosis of endometriosis. More studies are needed to further elucidate the role of ICG in detecting changes related to the pathogenesis of endometriosis.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

3:39 PM

Clinical Outcomes Following Hysterectomy with vs. without Ovarian Preservation for Endometriosis

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Study Objective: To evaluate the clinical outcomes of patients undergoing laparoscopic hysterectomy with vs. without ovarian preservation for endometriosis.
Design: A retrospective cohort study, with 5-year follow-up.
Setting: Minimally Invasive Gynecologic Surgery Practice between 2010-2015.
Patients or Participants: A total of 289 patients underwent laparoscopic hysterectomy with or without ovarian preservation for endometriosis. Analysis included 166 patients who either had a re-operation within 5 years or documented follow-up for 5 years after hysterectomy.
Interventions: Hysterectomy with or without ovarian preservation.
Measurements and Main Results: Patients were categorized as having 2 (50.6%), 1 (33.1%), or 0 (16.3%) ovaries remaining immediately after hysterectomy. These groups were similar in pain improvement following hysterectomy, with rates of 74.4%, 67.9%, and 73.1%, respectively (p=0.71). However, there were statistically significant differences in the frequency of re-operation within 5 years following hysterectomy between these groups, with rates of 34.5%, 52.7%, and 11.1%, respectively (2 vs. 1, p=0.03; 2 vs. 0, p=0.03; 1 vs. 0, p=0.001).
Conclusion: The majority of patients undergoing hysterectomy for endometriosis had improvement in pain following hysterectomy, regardless of concurrent unilateral or bilateral oophorectomy. However, the risk of re-operation for endometriosis following hysterectomy varies depending on the number of remaining ovaries. This data suggests that while pain may improve following hysterectomy, residual pain symptoms among other factors may still contribute to the decision to undergo subsequent surgery for endometriosis. The decision to proceed with hysterectomy with vs. without ovarian preservation for endometriosis should be individualized and should also address any additional factors contributing to chronic pelvic pain.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

3:46 PM

Virtual Mindfulness Therapy for the Management of Endometriosis Chronic Pelvic Pain: A Novel Delivery Platform to Increase Access to Care.

Miazga E.,[1,2,] Starkman H.,[1] Skolnik E.,[1,2] Schroeder N.,[2] Yarranton B.,[3] Nensi A.,[1,2] McCaffrey C.[2,4]. [1]Obstetrics and Gynecology, University of Toronto, Toronto, ON, Canada; [2]Obstetrics and Gynecology, St. Michael's Hospital, Toronto, ON, Canada; [3]Faculty of Medicine, University of Toronto, Toronto, ON, Canada; [4]Department of Obstetrics and Gynecology, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: The objective of this study was to assess the effectiveness of virtual mindfulness-based stress reduction (MBSR) program to improve quality of life and pain in people with endometriosis.
Design: Mixed-methods before and after study design.
Setting: Urban Canadian tertiary-care centre.
Patients or Participants: Fifteen adult patients with a clinical or surgical diagnosis of endometriosis were recruited to participate through an outpatient academic gynecology clinic. Sample size was limited to fifteen to facilitate participation in the MBSR program.
Interventions: Patients participated in a virtual eight-week MBSR program run by an experienced social worker. Participants completed the Endometriosis Health Profile (EHP), a validated survey tool, and a pain medication use questionnaire before and after the program. A focus group was held upon completion of the program to assess participants experiences using mindfulness for the management of endometriosis-related chronic pelvic pain.
Measurements and Main Results: 67% of people enrolled completed the MBSR course (10/15). Following the MBSR program participants had a statistically significant decrease in four components of the EHP: control and powerlessness ($p = 0.12$), emotional well-being ($p = 0.048$), social support ($p = 0.030$), and self-image ($p = 0.014$). There was no change in pain scores or pain medication use. Based on the thematic analysis the participants felt the program's benefits came from a sense of community, education about their condition, and application of mindfulness tools when approaching pain. Participants felt more comfortable with the virtual format over in-person sessions.
Conclusion: A virtual MBSR course can improve quality of life domains in people with endometriosis but does not impact pain. Participants felt more comfortable in a virtual format, which has the potential to decrease some geographic barriers to care. Further research should focus on assessing this MBSR program in a randomized control trial.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

3:53 PM

#Endometriosis Influencers on Instagram: Who Are They and What Are They Posting?

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Study Objective: This study examines endometriosis-related hashtags and accounts on Instagram including authors of the posts and common themes, tones, and emotions emerging from the content posted.

Design: This is a mixed methods cross-sectional observational study performed on June 6, 2021. A list of 30 hashtags associated with endometriosis were searched on Instagram and the top 20 and 10 most recent posts were assessed. Additionally, a list of 10 terms associated with endometriosis were searched under the accounts section and the first 30 were examined. Posts were categorized into themes, tone and emotion portrayed. Accuracy of the educational posts were cross-referenced against peer-reviewed scientific journals. The author of posts and activity level of accounts were assessed.
Setting: Publicly available data on Instagram.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: In total, 770 posts were identified and 59.4% had endometriosis related content. Social support was the most common theme (67.0%) followed by personal narrative (47.5%) and education (31.3%). It was found that 43.8% of the posts had a negative tone and sadness was the most common emotion portrayed (57.5%), followed by compassion (49.9%) and anger (39.4%). In total, 227 accounts were searched and 92.1% were related to endometriosis. Most of the authors of endometriosis related accounts were patients (60.3%), followed by organizations (9.1%), and healthcare providers (2.9%). Healthcare providers received the most number of likes per post in the month of June on average. Furthermore, 68.5% of posts in the education category had accurate information.
Conclusion: Most of the endometriosis related Instagram content is written by patients, offering social support and sharing personal narratives, highlighting a unifying emotional connection within the endometriosis community on Instagram. Increasing physician presence on Instagram may facilitate increased accurate education about endometriosis. Although there are fewer healthcare providers on Instagram, they receive more likes on average and, therefore, have widespread reach to endometriosis patients.

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

4:00 PM

MRI Visualization of Bowel Endometriosis: A Pilot Study

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Study Objective: To develop and validate a magnetic resonance imaging (MRI)-based nomogram to optimize the preoperative evaluation of bowel endometriosis (BE).
Design: A prospective cohort study.
Setting: University-based hospital.
Patients or Participants: Between 2018 and 2020, patients diagnosed as deep endometriosis were enrolled prospectively and distributed to the development and validation cohort equally.
Interventions: MRI parameters were extracted from T1-weighted and T2-fat saturated images. A Nomogram was developed based on potential predictors for BE by LASSO regression and validated in an external cohort to evaluate the accuracy of predicting BE by generating ROC curve and calibrating curve.
Measurements and Main Results: Among 220 deep endometriosis patients, 154 (70%) were diagnosed as BE. By using logistic regression analysis, thickness of rectal wall (OR=2.45, 95%CI: 1.60-3.73, $P<0.01$) and traction sign (OR=5.62, 95%CI: 1.09-29.00, $P=0.04$) were integrated in the Nomogram to predict the presence of BE. Predictive accuracy with AUC value 0.94 (95%CI: 0.90-0.98, $P<0.01$) was shown in the development cohort, and AUC=0.94 (95%CI: 0.89-0.98, $P<0.01$) in the validation cohort. A cut-off value of 6.0mm for the thickness of rectal wall resulted in the highest predictive accuracy of BE (sensitivity: 78.6%, specificity: 90.9%, $P<0.01$).
Conclusion: This pilot study indicates the MRI-based Nomogram is efficient for visualization and assessment of BE. The probability of BE tended to be greater in deep endometriosis patients with thickness of rectal wall over 6.0mm

ORAL SESSION 12 - ENDOMETRIOSIS
(3:15 PM — 4:20 PM)

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Risk of Repeat Laparoscopy Following Surgical Diagnosis of Endometriosis: Effects of Hysterectomy, Oophorectomy, & Psychiatric Disease

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Study Objective: To quantify rates of repeat laparoscopy following initial surgical diagnosis of endometriosis and investigate risk factors associated with repeat surgery.
Design: Retrospective chart review of patients with surgical pathology confirming endometriosis. This study met exemption criteria (45CFR 46.101b) following IRB review.
Setting: Academic tertiary hospital system.
Patients or Participants: Women ages 12-50 receiving a primary surgical diagnosis of endometriosis, Jan 2017 - June 2018.
Interventions: N/A.
Measurements and Main Results: Demographic variables, type of initial procedure (hysterectomy, oophorectomy, other laparoscopy), presence of psychiatric disease (defined by pre-determined clinical criteria) and repeat laparoscopy within 3 years of initial diagnosis.
136 patients met inclusion criteria. Initial surgeries included unilateral oophorectomy (8.1%), bilateral oophorectomy (3.7%), hysterectomy without oophorectomy (22.1%), hysterectomy with unilateral oophorectomy (5.9%), and hysterectomy with bilateral oophorectomy (6.6%). 53.7% underwent other laparoscopy not involving hysterectomy/oophorectomy. 66 patients (49%) met criteria for psychiatric disease. 15 patients (11%) underwent repeat laparoscopy.
Comparing patients who underwent repeat laparoscopy with those who did not, there was no difference in age (35.7±5.9 vs. 37.9± 11.1 years, respectively, p=0.46), BMI (26.2±7.0 kg/m^2 vs. 28.5±6.7 kg/m^2, p=0.22), or race/ethnicity (32% vs. 67% White, Chi-square p=0.55).
There was no association between re-operation and psychiatric disease (RR=1.2, 95%CI: 0.48-3.06, p=0.79). Preservation of ≥1 ovary was not associated with re-operation (RR=0.87, 95%CI: 0.26-3.34, p=0.69). Uterine preservation may be associated with a greater risk of repeat laparoscopy, with a trend towards significance (RR=2.5, 95%CI: 0.98-6.40, p=0.09).
Conclusion: The 3-year repeat laparoscopy rate was 11%, consistent with prior literature. Psychiatric disease was not associated with re-operation. Uterine preservation at time of initial laparoscopy may be associated with re-operation, but ovarian preservation was not. While non-significant findings may be limited by underpowering due to a small sample size, these results may help inform counseling and surgical planning in the long-term management of endometriosis.

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VIDEO SESSIONS

FRIDAY, DECEMBER 2, 2022
VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

11:33 AM

Repair of Isthmocele Following Embolization of Uterine Arteriovenous Malformation

Othieno A.A.,[1,] Huang D.,[2] Lehrman E.,[3] Ito T.E.[4]. [1]Obstetrics and Gynecology, UC San Francisco, San Francisco, CA; [2]Reproductive Endocrinology and Infertility, UC San Francisco, San Francisco, CA; [3]Radiology, UC San Francisco, San Francisco, CA; [4]Minimally Invasive Gynecologic Surgery, UC San Francisco, San Francisco, CA*
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Study Objective: Discuss advantages of ethylene vinyl alcohol copolymer (EVAC) use for uterine arterio-venous malformation (AVM). Demonstrate technique for vascular control during robotic repair of isthmocele.
Design: Video documentation of the surgical procedure (instructive video).
Setting: University of California, San Francisco Hospital operating room with patient placed in dorsal lithotomy positioning.
Patients or Participants: A 37-year-old woman, status-post embolization of uterine AVM, presenting with a 3.5 × 2.5 cm uterine isthmocele.
Interventions: Discuss embolization of a uterine AVM. Then, present a case of AVM with isthmocele, review the patient's imaging, and show a stepwise approach to the procedure.
Hysteroscopy is performed to identify the isthmocele location and visualize the cavity post-embolization. The robotic platform was chosen as the mode of surgery. Entry into the retroperitoneum with transient occlusion of the uterine arteries is planned due to proximity of isthmocele to left uterine artery as seen on MRI. Once the pararectal space is entered the ureter is localized on the medial leaf of the broad ligament. The uterine artery is then isolated and skeletonized. This procedure is performed bilaterally. Vascular clamps are then placed on the uterine arteries at their respective origins. The bladder is also backfilled to aid in creation of a bladder flap given the history of c-section. With firefly technology, the borders of the isthmocele are identified. This area is resected, the residual copolymer is removed from the defect, and the hysterotomy is repaired in two layers using unidirectional barbed suture. At the conclusion of the case, the vascular clamps are removed and vascular supply is restored.
Measurements and Main Results: Isthmocele resection and repair was achieved with an estimated blood loss of 25mL. The patient's symptoms resolved.
Conclusion: Evaluation of pathology on pre-operative imaging can impact surgical approach. Transient occlusion of the uterine arteries can aid in repair of isthmocele with minimal blood loss.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

11:39 AM

Robotic-Assisted Resection of Pelvic Arteriovenous Malformation Utilising Intraoperative Video Angiography with Indocyanine Green

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Study Objective: Surgical resection of pelvic arteriovenous malformations (AVM) can be challenging, and pre-operative imaging may not clearly identify feeding vessels. We describe a case of pelvic AVM in a young woman and demonstrate the robotic surgical resection utilising video angiography with indocyanine green (ICG).
Design: Case report and surgical video.
Setting: Four-arm robotic assisted laparoscopy.
Patients or Participants: A nullipara with pelvic AVM.
Interventions: Robotic-assisted resection of pelvic AVM guided by intraoperative ICG angiography.
Measurements and Main Results: A 22-year-old woman presented with progressively worsening left pelvic pain. Pelvic ultrasound demonstrated a 7cm left adnexal vascular mass and magnetic resonance angiogram confirmed a left pelvic AVM. The patient was counselled regarding the risks of embolization versus surgery and decided on the latter.
Using a robotic surgical system, the left pelvic side wall was opened at the pelvic brim and careful dissection of the retroperitoneal alveolar tissue was performed. 3mL of a 2.5mg/mL solution of ICG was injected peripherally, followed by 10mL bolus of normal saline. Using the near infra-red imaging of the robotic system, the ICG demonstrates small efferent vessels arising from the left ovarian vessels and a large vein communicating with the left external iliac vein. Vascular clips were applied to the aberrant vein prior to ligation. The AVM was carefully dissected away from the surrounding tissues, with use of bipolar diathermy for coagulation of smaller vessels. A further dose of ICG was injected after resection to ensure haemostasis and to confirm the perfusion of remaining organs. Mesosalpinx and pelvic side wall peritoneum were closed with 2-0 barbed suture. The patient was discharged the following day with complete resolution of left pelvic pain and normal pelvic ultrasound scan 6 weeks later.
Conclusion: Robotic surgical resection of pelvic AVM is enhanced with guidance from intraoperative ICG video angiography to ensure haemostasis and complete excision.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

11:45 AM

Robotic Fallopian Tubo-Uterine Implantation

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Study Objective: The objective of this video is to demonstrate the robotic and hysteroscopic surgical technique for implanting the distal fallopian tube to the proximal uterine cornua in a patient with bilateral fallopian

1553-4650/$ — see front matter
https://doi.org/

tubal occlusion. This is an alternative option to surgically manage infertility other than via in vitro fertilization.
Design: Surgical video recording of hysteroscopic and robotic steps to implant the fallopian tube to the uterine cornua, with fallopian tube patency confirmation.
Setting: Operating Room.
Patients or Participants: 33-year-old G0 female with bilateral proximal fallopian tube occlusion and suspected endometriosis. She declined in vitro fertilization and desired surgical management.
Interventions: Robotic fallopian tube implantation at the uterine cornua using hysteroscopic assistance and chromopertubation confirming tubal patency.
Measurements and Main Results: Fallopian tube anastomosis is an option for patients who desire a surgical option to help achieve fertility with tubal factor infertility. This technique can achieve up to 80% success rate in pregnancy. With appropriate counseling, patients should be given this option when discussing tubal factor infertility.
Conclusion: Fallopian tube anastomosis can be a more cost-effective option than in vitro fertilization if a patient only has tubal factor infertility or does not desire to undergo assisted reproductive technologies with IVF. This approach is efficient and effective to treat tubal factor infertility and patency of the tube is confirmed during the procedure. Patients can begin trying for pregnancy shortly after their first post operative visit.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

11:51 AM

Robotic Management of Large and Ruptured Interstitial Ectopic Pregnancy

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Study Objective: To describe management of very advanced and ruptured interstitial ectopic pregnancy, including minimally invasive technique for fertility sparing large wedge resection and surgical techniques to reduce morbidity and mortality
Design: Video Presentation.
Setting: University tertiary care hospital.
Patients or Participants: 22-year-old patient, 12 weeks and 2 days who presented to the emergency department with severe abdominal pain, imaging showed large and viable right interstitial ectopic pregnancy.
Interventions: Interstitial ectopic pregnancies are not common and account for 2-4% of ectopic pregnancies, management of interstitial ectopic pregnancy is a constant challenge due to the lack of general guidelines, a large and viable interstitial ectopic pregnancy could be life threatening due to hemorrhage and delayed diagnosis, The patient underwent Robotically assisted laparoscopic fertility sparing wedge resection and chromopertubation.
Measurements and Main Results: at 1 week follow up patient did well without complications.
Conclusion: Interstitial ectopic pregnancy is not common and a viable and advanced gestational age interstitial ectopic pregnancy is even less common, but robotically assisted laparoscopic fertility sparing wedge resection with surgical techniques to minimize blood loss decrease the risk of infertility and the morbidity associated with large blood loss, patient was counseled regarding the need for cesarean section in future pregnancies due to the increased risk of uterine rupture.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

11:57 AM

Robotic-Assisted Laparoscopic Excision of Deep Infiltrating Endometriosis with Concomitant Left Ureteroneocystostomy

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Study Objective: To describe the surgical techniques employed to effectively excise deep infiltrating endometriosis involving the ureters and to highlight the successful re-implantation of the left ureter.
Design: Video presentation.
Setting: Academic tertiary care center.
Patients or Participants: This is the case of a 45-year-old G1P1001 patient with a history of chronic pelvic pain and endometriosis. She underwent previous exploratory laparotomy due to endometriosis. Her symptoms however recurred and worsened to the point where she started experiencing left flank pain. A CT scan revealed moderate left hydroureteronephrosis to the level of the left adnexa. MRI findings confirmed the left ureter to be encased by pelvic endometriosis causing significant extrinsic compression.
Interventions: Intra-operatively, deep infiltrating endometriosis was noted involving the posterior cul-de-sac, bilateral uterosacral ligaments, with retroperitoneal fibrosis involving bilateral ureters. Retroperitoneal dissection was performed using a medial approach thus identifying the ureters bilaterally. Careful and extensive dissection was then carried out, excising the fibrotic endometriotic nodule from the ureters. The left hydroureter was transected at its most distal and narrowed portion by the urology team. The proximal end for re-implantation was then spatulated. The bladder was mobilized, and a tension free re-implantation was successfully completed after placing a double pig-tail stent in a retrograde fashion. A water-tight re-anastomosis was confirmed.
Measurements and Main Results: The patient recovered well from her procedure and had significant improvement in her pain symptoms when she was reviewed at her postoperative visit.
Conclusion: Despite its incessant, recalcitrant nature, endometriosis affecting the ureters can be effectively resected. Laparoscopic ureteroneocystostomy for ureteral endometriosis is safe, feasible, and can achieve good surgical outcomes leading to effective control of patient's symptoms as was noted in this case.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

12:03 PM

Tips and Tricks for Nerve-Sparing Modified Radical Hysterectomy for Deep Endometriosis with Firefly Technology

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Study Objective: To show tips and tricks for our nerve-sparing modified radical hysterectomy (NS-mRH) for deep endometriosis (DE) and provide perioperative outcomes of the procedure.
Design: Stepwise demonstration of this method with narrated video footage.
Setting: An urban general hospital. NS-mRH is known for its benefits as a definitive treatment for severe endometriosis. Furthermore, robotic surgery has become available worldwide and two meta-analyses have confirmed that robotic surgery is safe and feasible in the treatment of endometriosis,

especially in advanced cases. However, reports which showed the surgical technique of robotic nerve-sparing hysterectomy for DE were limited.
Patients or Participants: 30 patients presented with DE and complex pelvic pathology.
Interventions: Our NS-mRH was performed using following 8 steps with da Vinci Xi: Step 0, observing peritoneal endometriotic lesions; Step 1, adhesiolysis and adnexal surgery; Step 2, separation of the pelvic autonomic nerve plane; Step 3, dissection of the ureter; Step 4, reopening of the pouch of Douglas; Step 5, complete removal of DE lesions while avoiding injury to the nerve plane; Step 6, hysterectomy; Step 7, checking for rectal injury using air leakage test and tissue perfusion; and Step 8, barrier agents for adhesion prevention.
Measurements and Main Results: 30% of patients had history of previous surgeries for endometriosis. 53% of patients presented with complete cul-de-sac obliteration and 87% of patients presented with ENZIAN B2 or B3 lesions which were predictive factors for postoperative voiding dysfunction. All procedures included NS-mRH, uterosacral ligament resection and posterior compartment peritonectomy. Mean operative time was 127 min and blood loss was 31 ml. The mean VAS score significantly decreased after surgery. No patients developed perioperative complications, including postoperative bladder, rectal, and sexual dysfunctions.
Conclusion: Our NS-mRH for DE using FireFly technology is safe and feasible technique with excellent outcomes. Application of ICG with NIR fluorescence appears potentially useful, not only to remove DE, but also to improve nerve-sparing.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

12:09 PM

Robotic-Assisted Laparoscopic Hysterectomy for Management of Cesarean Scar Ectopic Concerning for a Molar Pregnancy

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Study Objective: Demonstrate the safety and feasibility of a robotic approach to management of a cesarean scar ectopic concerning for molar pregnancy.
Design: Case presentation.
Setting: Tertiary Hospital Operating Room.
Patients or Participants: 38-yo G3P2012 at 8w5d by LMP with history of 1 prior cesarean section presenting with vaginal bleeding and abdominal pain. Ultrasound and MRI finding cesarean scar ectopic pregnancy concerning for molar pregnancy.
Interventions: Robotic assisted laparoscopic hysterectomy.
Measurements and Main Results: Perioperative outcomes of EBL and complications. EBL 100 cc with no post operative complications or need for transfusion.
Conclusion: Robotic approach is safe and feasible management of a cesarean scar ectopic concerning for molar pregnancy.

VIDEO SESSION 1 - ROBOTICS
(11:30 AM — 12:35 PM)

12:15 PM

Dissection Techniques for Dense Adhesions between Uterus, Bladder, and Anterior Abdominal Wall

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Study Objective: The objective of the video is to serve as a teaching tool in order to demonstrate surgical techniques to aid in adhesiolysis of dense adhesions between the uterus, bladder, and anterior abdominal wall.
Design: This video first outlines the medical and surgical history relevant for the patient. The surgical techniques used in the video are then listed prior to the narrated video of the adhesiolysis.
Setting: The surgical video was recorded during a robotic assisted laparoscopic total hysterectomy, bilateral salpingectomy, and cystoscopy.
Patients or Participants: The video includes one patient. The primary surgeon is a minimally invasive gynecologic surgeon. A minimally invasive gynecologic surgery fellow assisted with this surgery as well as a urologist.
Interventions: A robotic assisted laparoscopic total hysterectomy, bilateral salpingectomy, and cystoscopy was performed during the surgery.
Measurements and Main Results: Adhesiolysis was safely performed. A cystoscopy at the end of the procedure demonstrated no injury to the bladder as well as bilateral jets. The patient recovered well postoperatively with no complications.
Conclusion: This video demonstrates surgical techniques for management of dense bladder adhesions which can be used in a wide variety of surgical scenarios.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

11:33 AM

Two Methods for Adenomyotic Cyst Excision

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Study Objective: The objective of this video is to demonstrate two techniques for hysteroscopic resection of adenomyotic cysts.
Design: N/A.
Setting: A patient desiring fertility presents for further evaluation. Imaging is notable for two fundal cysts on ultrasound consistent with adenomyosis. After informed consent is obtained, OR hysteroscopy is performed under ultrasound guidance.
Patients or Participants: One patient with adenomyotic cysts is highlighted.
Interventions: The patient is taken to the operating room and a 5.5mm rigid hysteroscope is advanced to the fundus under ultrasound guidance. After confirming the location of adenomyotic cysts via ultrasound, hysteroscopic scissors are used to open the cysts, with adenomyosis confirmed by release of chocolate brown fluid. Cyst walls are resected in their entirety, one sharply and one with bipolar loop.
Measurements and Main Results: Direct visualization of the endometrial cavity as well as intraoperative ultrasound confirm complete removal of adenomyotic cysts. Pathology of the cyst walls confirmed adenomyosis.
Conclusion: Hysteroscopic resection of adenomyosis is safe and effective in select patients with focal disease, allowing for targeted removal under direct visualization. Here we demonstrate two hysteroscopic techniques for resection of adenomyotic cyst wall: sharp dissection, and the bipolar loop electrode.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

11:39 AM

Hysteroscopic Resection of Retained Placenta Accreta

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Study Objective: To present surgical videos of a case of retained placenta accreta managed with two hysteroscopic resections, demonstrating the surgical technique and key steps, and to review the literature regarding hysteroscopic resection of placenta accreta.
Design: Case report and surgical video.
Setting: Tertiary care hospital.
Patients or Participants: One patient.
Interventions: 31 y/o G6P4, with a history of a vaginal delivery 3 months prior complicated by retained placenta and significant postpartum hemorrhage, presented with irregular bleeding and was found to have 6.4 cm of echogenic material with doppler flow within the endometrium on ultrasound. Findings and history were concerning for unrecognized placenta accreta that now was presenting with a significant amount of retained tissue. Due to desire for future fertility, hysteroscopic resection with a bipolar loop resectoscope was performed. A second hysteroscopy was performed over 3 months later to complete resection and lyse intrauterine adhesions.
Measurements and Main Results: Hysteroscopic resection of retained placenta was successful in removing the majority of the placenta after one procedure, with only 9 mm remaining 3 months post-procedure. Post-operative course was complicated by continued amenorrhea 3 months later, likely from intra-uterine adhesions. Second hysteroscopy was successful in removing adhesions and the remainder of the placenta, with no residual tissue on MRI post-operatively. Surgical techniques for both hysteroscopies are reviewed in the surgical videos.
Conclusion: Hysteroscopic resection of a large, retained placenta accreta is feasible and effective, though may require multiple procedures to complete. Synechiae formation is a possible complication post-operatively and preventative measures can be considered after resection.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

11:45 AM

Hysteroscopic Myomectomy - The Struggle Is Real and How to Overcome It

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Study Objective: To present the challenges of hysteroscopic myomectomy and techniques to overcome it.
Design: Surgical Video.
Setting: Academic Hospital.
Patients or Participants: N/A.
Interventions: Hysteroscopic myomectomy.
Measurements and Main Results: Presentation of the hysteroscopic fibroid removal.
Conclusion: Presentation of the safe and effective techniques for hysteroscopic fibroid removal.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

11:51 AM

TIPS and Tricks for the Difficult Hysteroscopy

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Study Objective: The objective of this video is to provide gynecologists with the tools to successfully perform difficult hysteroscopic procedures.
Design: Narrated video.
Setting: There are many conditions including abnormal uterine bleeding which require sampling and/or visualization of the endocervical canal and intrauterine cavity. Hysteroscopy with direct visualization of the cavity is the gold standard for evaluation.
Patients or Participants: Patients undergoing hysteroscopy.
Interventions: This video describes 1) risk factors for a difficult hysteroscopy 2) how to optimize for success with preoperative planning and hysteroscopic set up and 3) tips and tricks to successfully navigate and complete a difficult hysteroscopy.
Measurements and Main Results: This video can serve as a resource for gynecologists to successfully perform difficult hysteroscopies.
Conclusion: Hysteroscopy is one of the most frequently performed gynecologic procedures and many are surgically challenging. It is important for gynecologists to optimize their skills in performing difficult hysteroscopies to provide the best care for our patients.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

11:57 AM

Hysteroscopic Resection of Early Pregnancy Loss

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Study Objective: 1. To report a case of early pregnancy loss successfully managed by hysteroscopic resection; 2. To review the literature comparing hysteroscopic resection to dilation and curettage for retained products of conception; and 3. To review potential advantages of hysteroscopic resection over dilation and curettage for management of early pregnancy loss.
Design: Case Report.
Setting: Academic affiliated private practice.
Patients or Participants: One woman with early pregnancy loss.
Interventions: Hysteroscopic resection using a mechanical morcellation device.
Measurements and Main Results: Complete uterine evacuation as demonstrated by normal transvaginal ultrasound and cessation of bleeding two weeks postoperatively after hysteroscopic resection. Hysteroscopic fluid deficit was 365ml with minimal blood loss. Products of conception were confirmed on pathologic examination. There were no intraoperative or postoperative complications. Saline infusion sonogram four months postoperatively demonstrated a normal endometrial cavity with no intrauterine adhesions.
Conclusion: Surgical management of early pregnancy loss may be complicated by retained products of conception (RPOC) or intrauterine adhesion formation (IUA), which can lead to adverse future fertility outcomes.

Hysteroscopic resection has been associated with less intrauterine adhesions, more complete tissue removal, and earlier time to conception compared to dilation and curettage (D&C) in cases of retained products of conception. Early pregnancy loss can also be characterized as retained products of conception with potentially similar benefits from hysteroscopic resection. Thus, hysteroscopic resection can be considered an alternative surgical technique for management of early pregnancy loss. This case report demonstrates the successful application of hysteroscopic resection in a case of early pregnancy loss.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

12:03 PM

Hysteroscopic Removal of Residual Cesarean Scar Pregnancy

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Study Objective: Cesarean scar pregnancy (CSP) is a rare type of ectopic pregnancy which may be managed by various medical and surgical options. We present a case series of patients managed by combined medical and hysteroscopic surgical approach.
Design: Retrospective review of CSP cases managed by combined methotrexate and hysteroscopy.
Setting: University affiliated department of Obstetrics and Gynecology.
Patients or Participants: 5 patients with a viable 6 weeks CSP.
Interventions: Administration of methotrexate (local and systemic intramuscular), with or without uterine artery embolization, followed by hysteroscopic removal of the residual pregnancy mass.
Measurements and Main Results: The residual CSP mass was successfully removed in 4 out of 5 cases by hysteroscopy, while one patient required a robotic assisted resection and repair of the cesarean scar due to persistent CSP. Pre-operative uterine artery embolization was performed in 2 cases for the prevention of excessive bleeding. No intra- or post-operative complications occurred. The post-operative sono-hysterography showed a residual myometrial thickness >4 mm in all cases.
Conclusion: Combined medical and hysteroscopic removal of viable CSP is safe and allows for fertility preservation.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

12:09 PM

Technical Challenges in Hysteroscopic Myomectomy with Prolapsing Cervical Fibroid

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Study Objective: To demonstrate various techniques to overcome challenges encountered during hysteroscopy myomectomy for multiple fibroids with concurrent prolapsing cervical fibroid.
Design: Stepwise demonstration using narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: A 44-year-old G4P2022 presented with heavy menstrual bleeding reporting heavier menses over the last few years. Pelvic exam demonstrated a 4 cm prolapsing cervical fibroid and a 12-week size multi-fibroid uterus. Pelvic MRI showed a multi-fibroid uterus with at least 30 myomas, including 5 submucosal fibroids measuring between 1-3 cm each. There was also a 3.7 cm pedunculated fibroid prolapsing through the cervix, into the vagina. Patient declined hysterectomy and opted for conservative surgical management. She underwent excision of prolapsing fibroid, hysteroscopic myomectomy, hysteroscopic endometrectomy, and levonorgestrel IUD placement.
Interventions: Below are strategies to remove multiple submucosal fibroids hysteroscopically when the cervix is dilated due to a prolapsing fibroid.
1. Two 0 PDS Endo-Loops are secured at the base of the prolapsing fibroid. The stalk is transected, and the fibroid is removed.
2. A purse string suture is placed around the cervix using 0 PDS and tagged with a hemostat at 12 o'clock. Once the hysteroscope is placed through the dilated cervix, the purse string suture is tightened, preventing leakage of hysteroscopic fluid.
3. Fibroids greater than 3 cm are enucleated at the base. Once the fibroid is free floating in the cavity, it can be grasped with a forcep and removed intact through the dilated cervix. Smaller submucosal fibroids are excised using hysteroscopic morcellator.
Measurements and Main Results: All submucosal fibroids were successfully removed with a minimal hysteroscopic fluid deficit. Patient tolerated the procedure well.
Conclusion: Multiple submucosal fibroids were safely and efficiently removed using the strategies above. A purse-string suture on the cervix prevents leakage of hysteroscopic fluid while maintaining uterine distension. Large fibroids were enucleated and removed intact through the dilated cervix.

VIDEO SESSION 2 - HYSTEROSCOPY
(11:30 AM — 12:35 PM)

12:15 PM

Ultrasound Guided Hysteroscopy in the Complex Uterine Isthmus

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Study Objective: To demonstrate clinical considerations, operative setup and techniques for a reproducible method of achieving safe hysteroscopic access to the endometrial cavity using multimodal imaging techniques to navigate the complex uterine isthmus.
Design: Educational and stepwise instructional narrated surgical video.
Setting: Community Gynecologic Surgery Referral Practice
Patients or Participants: A 31-year-old G1P1 patient with severe cervical stenosis and high-grade isthmocele is referred for assistance with cervical dilation prior to planned embryo transfer.
Interventions: The patient underwent combined simultaneous hysteroscopic and ultrasonographic visualization to safely access the endometrial cavity.
Measurements and Main Results: A reproducible procedural setup and workflow is described in depth including positioning of patient, assistants and technology as well as detailed stepwise procedure instructions to obtain endometrial access without perforation.
Conclusion: As recognition of isthmocele and other anatomic pathology increases alongside high rates of cesarean section, the gynecologic surgeon must command careful perioperative planning, multimodal imaging techniques and a firm grasp of instrumentation safety parameters as part of the advanced endoscopic skill set required to navigate this complex anatomic area.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery
(11:30 AM — 12:35 PM)

11:33 AM

Transcervical Ultrasound-Guided Targeted Radiofrequency Ablation of Localized Adenomyosis

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Study Objective: To review the definition, diagnosis, and procedural management options for adenomyosis with a focus on a novel procedure of transcervical ultrasound guided radiofrequency ablation. This video highlights one of the first successful examples of improved post operative symptoms and uterine volume reduction for a case using transcervical ultrasound-guided radiofrequency ablation.
Design: A 6-minute video reviewing the step-by-step demonstration of a single patient who underwent transcervical ultrasound-guided radiofrequency ablation of adenomyosis with six month post operative outcomes.
Setting: Surgery was performed in an outpatient surgical center with the patient in lithotomy position.
Patients or Participants: 42-year-old nulligravid female with no past medical or surgical history who presented with a chronic history of heavy menstrual bleeding, dysmenorrhea and worsening abdominal bulk symptoms desiring minimally invasive uterine sparing surgery.
Interventions: Transcervical ultrasound-guided targeted radiofrequency ablation of adenomyosis with a total of four ablations performed and combined time of 16 minutes and 30 seconds.
Measurements and Main Results: At six months post operation, the patient reported sustained resolution of dysmenorrhea and lighter menstrual periods. Six month post operative MRI was compared to pre operative MRI and noted a 43.5% decrease in uterine corpus volume and decrease in number of T2 hyperintense cystic foci within the uterus.
Conclusion: This video demonstrates one of the first successful examples of improved post operative symptoms and uterine volume reduction at six months with the transcervical ultrasound guided radiofrequency ablation of adenomyosis. Benefits of the procedure include its incisionless technique, improved intraoperative image monitoring because of the proximity of the ultrasound probe to pathology that can be operated by a single surgeon, fast recovery from surgery, and potentially cost-effective option for uterine sparing surgical management of adenomyosis. Since this is the first known published short term outcome data for this procedure on adenomyosis, more studies need to be conducted to demonstrate persistent safety and efficacy

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

11:39 AM

Fertility Sparing Surgical Management of Adenomyosis

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Study Objective: To describe the pathophysiology, diagnosis, and minimally invasive technique for fertility sparing adenomyomectomy. Postoperative outcomes including symptom control, pregnancies, and complications are also reviewed in this video.
Design: Video presentation.
Setting: University tertiary care hospital.
Patients or Participants: 19-year-old nulliparous patient with severe dysmenorrhea and chronic pelvic pain for 3 years who failed medical management and imaging showed a cystic adenomyoma.
Interventions: Adenomyosis is not uncommon in young reproductive aged women. Conservative surgical management of adenomyosis has been shown to improve painful symptoms and menorrhagia in greater than 70% of women at 1 year. The patient underwent an uncomplicated laparoscopic adenomyomectomy, endometriosis resection, diagnostic hysteroscopy, and chromopertubation.
Measurements and Main Results: At the 6-week postoperative follow up, the patient reported resolution of her painful symptoms.
Conclusion: Adenomyosis and endometriosis often coexist. Fertility sparing adenomyosis surgical management is feasible and effective when expectant or medical management is not appropriate or has failed. Patient counseling about the risks and potential uterine rupture in future pregnancies is mandatory.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

11:45 AM

"H-Incision" Technique for Robotic-Assisted Laparoscopic Adenomyosis Resection

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Study Objective: The purpose of this video is to present a case of a robotic-assisted laparoscopic adenomyomectomy using an "H-Incision" technique. This minimally invasive approach is a novel application of a uterine-sparing adenomyosis resection previously reported only in open cases.
Design: N/A.
Setting: The patient was placed in dorsal lithotomy with Allen stirrups.
Patients or Participants: This video presents a single surgical case.
Interventions: The patient received a robotic-assisted laparoscopic adenomyomectomy.
Measurements and Main Results: The patient received a robotic-assisted laparoscopic adenomyomectomy using an H-incision technique.
Conclusion: This surgical video demonstrates the steps of the "H-incision" technique for adenomyomectomy using a robotic-assisted laparoscopic approach. Since the H-incision technique was originally proposed for use in open surgery, widespread use has been limited in traditional laparoscopy. However, with advances in robotic-assisted surgery, the H-Incision technique offers an alternative approach to traditional resection methods that may enhance outcomes for patients pursuing future pregnancy. This video presents one of the first cases in the literature of robotic-assisted laparoscopic adenomyomectomy using the H-Incision technique.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

11:51 AM

Laparoscopic Management of a Juvenile Cystic Adenomyoma

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Study Objective: To demonstrate how to diagnose and surgically manage an adenomyotic cyst by a robotic assisted laparoscopic approach.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Operating theatre.
Patients or Participants: A 17-year-old patient with acute pelvic pain in the setting of chronic dysmenorrhea associated with a 4 cm cystic lesion in the endometrium on MRI consistent with a juvenile cystic adenomyoma. After no improvement with hormonal management, the patient opted for laparoscopic exploration and removal.
Interventions: MRI imaging was used to identify the adenomyotic cyst. Upon laparoscopy, the surgical site was injected with vasopressin for

hemostasis. Sharp and blunt dissection was used to minimize trauma and thermal injury to the surrounding myometrium. Chromopertubation was used verify no cavity entry after removal. Lastly, the myometrium was closed in multiple layers to prevent hematoma formation.
Measurements and Main Results: Successful outpatient procedure with improved pain post-operatively.
Conclusion: This video shows techniques to identify and perform a minimally invasive fertility preserving resection of a juvenile cystic adenomyoma.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

11:57 AM

Utilizing Firefly Technology for Uterine Isthmocele Recognition and Excision: An Approach to Robotic Assisted Cesarean Scar Defect Repair

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Study Objective: Utilize Firefly fluorescent technology in a robotic assisted isthmocele repair for more accurate defect recognition and excision.
Design: In laparoscopic approaches for isthmocele repair steps include bladder retraction, defect recognition, excision, and approximation of myometrium. In Firefly, a special camera uses near-infrared imaging to detect blood flow and allow for trans-illumination of vasculature. Since hysteroscopic imaging has shown that isthmoceles contain areas of abnormal vasculature, we can utilize Firefly technology to highlight the defect.
Setting: Patient was prepared in dorsal lithotomy position with yellow fin stirrups.
Patients or Participants: We present a patient who desired a second embryo transfer after a cesarean section. She underwent 10 different lining preparations that were all cancelled due to fluid in the lining. MRI showed an endomyometrial defect compatible with isthmocele.
Interventions: After the bladder is retraced from the lower uterine segment, we switch the robot to Firefly mode and highlight the isthmocele region in bright green. We then mark the highlighted boundaries of the isthmocele with cautery. By marking the isthmocele borders prior to excision, we can avoid vascular and bladder injury. We then reapproximate the healthy myometrium in a multilayer closure. Firefly imaging is used again with prior bright green areas of abnormal uptake no longer visualized. We then use hysteroscopy to view the revision for continuity.
Measurements and Main Results: Patient will follow-up in three months to assess uterine cavity with ultrasound.
Conclusion: Firefly technology represents an innovative practical approach for robotic assisted isthmocele repair, utilizing the abnormal vasculature created by the isthmocele for improved defect border recognition and excision. While laparoscopic options have been shown to have better outcomes, they are more invasive than hysteroscopic approaches and can have higher incidence of bladder or vascular injury. By utilizing the Firefly fluorescence technology, we can help to ensure a more complete and accurate isthmocele resection and create a safer approach for patients.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

12:03 PM

Robotic Assisted Tubal Reanastomosis

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Study Objective: Indications for tubal reanastomosis include reversal of sterilization, midtubal block secondary to pathology, tubal occlusion from ectopic pregnancy, and salpingitis isthmica nodosa. The goal is to remove abnormal tissue and reapproximate the healthy tubal segments with as little adhesion formation as possible.
Design: This video demonstrates effective and efficient tubal reanastomosis technique using microsuturing on a robotic surgical platform.
Setting: Community hospital.
Patients or Participants: 35-yo G3P3 with prior tubal sterilization via Filshie clips, desires sterilization reversal, opposed to *in vitro* fertilization.
Interventions: Tubal reanastomosis utilizing the robotic surgical platform.
Measurements and Main Results: Successful bilateral tubal reanastomosis with resulting intrauterine pregnancy.
Conclusion: Laparoscopic tubal reanastomosis has been shown to boast equal pregnancy success rates as minilaparotomy, but is difficult to perform. Benefits of robotic assist include 3D visualization, tremor filtration, motion downscaling, wristed instrumentation, and micro instrumentation.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

12:09 PM

Blue to Pink in 10 Minutes: Fallopian tube and Paratubal Cyst Torsion. Case Presentation and Demonstration of Dissection Principles

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Study Objective: To demonstrate immediate changes in fallopian tube appearance upon detorsion. To encourage fallopian tube preservation in circumstances of torsion, in patient at low risk of cancer and desiring future fertility. To demonstrate principles of robotic dissection and cooperation with bedside assistant.
Design: Video case report.
Setting: Tertiary Gynecologic Oncology Center.
Patients or Participants: 26yo desiring future fertility presenting with pelvic mass and subacute pain.
Interventions: Da Vinci Xi robotic surgery.
Measurements and Main Results: Dissection of fallopian tube from paratubal cyst and detorsion of fallopian tube took approximately 10 minutes. Immediate improvement in fallopian tube perfusion resulted in change in color from blue to pink. Since fallopian tube had been stretched, it was twice longer than usual. Fallopian tube, was attached to the ovary to keep fimbria in close proximity. Safe dissection principles including appropriate selection of instruments, creation of three-dimensional anatomy, defining surgical planes and organ borders, traction-countertraction, adjusting dissection direction to tissue response, active involvement of bedside assistant are discussed and demonstrated.
Conclusion: Fallopian tube detorsion should be attempted even in situations of significant change in tissue color when preservation of fertility is desired, and risk of cancer is low. Fixation of fallopian tube or ovary to prevent repeat torsion is controversial. Studies report preservation of ovarian function in 90% of detorsion cases. Tissue falling apart during handling suggests necrosis and requires removal, as it may result in peritonitis and sepsis.

VIDEO SESSION 3 - ADENOMYOSIS & Reproductive Surgery (11:30 AM — 12:35 PM)

12:15 PM

Bridging the Gap: Robotic Approach to Isthmocele Dehiscence

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Study Objective: To describe a minimally invasive fertility preserving approach to emergent surgery in the setting of an isthmocele dehiscence.
Design: Narrated video of surgical technique with descriptions of key steps.
Setting: Uterine isthmoceles are usually asymptomatic but can cause abnormal uterine bleeding, pain, secondary infertility and have been associated with uterine rupture or cesarean scar dehiscence. There have been only a few case reports of isthmocele dehiscence following uterine instrumentation. Often in cases of acute bleeding, an abdominal hysterectomy is performed. We present the case of a 36-year-old G2P1001 patient who underwent dilation & evacuation at 14 weeks for holoprosencephaly which was complicated by post-operative hypotension and vaginal bleeding. Emergent laparoscopic exploration revealed concealed bleeding leading to hematoma formation at the site of isthmocele dehiscence. The hematoma was evacuated and the isthmocele was resected and repaired, allowing for a uterine preserving procedure.
Patients or Participants: One patient was included in this case report.
Interventions: Robotic assisted laparoscopic hematoma evacuation and isthmocele repair was performed with 5 key interventions:
1. Bladder mobilization using sharp dissection and cautery
2. Dilute vasopressin injected circumferentially around isthmocele
3. Monopolar cautery used to refresh dilated edges of isthmocele
4. Uterine sound introduced into endometrial cavity to delineate anatomy
5. Defect repair with 2-0 barbed suture in multiple layers
Measurements and Main Results: N/A.
Conclusion: In patients with a history of cesarean delivery, it is important to consider isthmocele dehiscence in the setting of post-procedural bleeding or hemodynamic instability. In cases of isthmocele dehiscence, specifically when there is concealed bleeding into the isthmocele, one could consider a uterine sparing minimally invasive approach. Hemodynamic stability of the patient, access to necessary resources, efficiency of ancillary staff, and surgeon experience are key factors for success in such surgical emergencies.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

11:33 AM

Total Laparoscopic Cervical Encerclage in 16 Weeks Pregnant Uterine Didelphis Uterus Category: Laparoscopy

Pandit H., Ansari A.. Pandit Hospital, Ahmednagar, India*
*Corresponding author.

Study Objective: To demonstrate Laparoscopic approach for encerclage in pregnancy in a % uterine didelphys.
Design: A case report.
Setting: laparoscopy surgery with patient in lithotomy position under anaesthesia.
Patients or Participants: A 26-year-old female came G3 A2 with previous 2- 2nd trimester abortions with failed vaginal encerclage and uterine didelphys diagnosed on MRI with 16 weeks pregnancy.
Interventions: Laparoscopic cerclage was planned using Mersilene tape.
Measurements and Main Results: Cervical insufficiency (CI) or incompetence is a well-known condition in obstetrics with an incidence of 0.1 −1% and is notoriously associated with a high risk of second trimester abortion and/or preterm delivery.
The traditional surgical treatment for cervical insufficiency consists of vaginal placement of cervical stitches, known as transvaginal cervical cerclage (TVC).
Advances in the field of minimally invasive surgery resulted in development of a new approach to cervical cerclage placement.
Laparoscopic cerclage offers the benefit of reduced blood loss, reduced postoperative pain, and fewer adhesions, as well as decreased length of hospital stay and overall faster recovery time.
Principles of surgery:
1. Dissection of loose UV fold of peritoneum.
2. Creation of window in the broad ligament on both sides.
3. Passing the needle of mersilene tape from medial to the uterine artery of left side at the level of internal os.
4. Passing the Mersilene tape all around the uterus
5. Passing the needle of mersilene tape from medial to uterine artery on right side.
6. Tightening the mersilene tape at the level of the internal os.
Conclusion: Similar to the transabdominal approach, laparoscopic cerclage can be placed during pregnancy or as an interval procedure. Success rates for laparoscopic cerclage were reported in the range of 76% to 100%.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

11:39 AM

Transvaginal Specimen Extraction: Novel Techniques and Strategies for Success

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Study Objective: To review the benefits of transvaginal specimen extraction, to demonstrate applications of this technique in laparoscopic gynecologic surgery, and to discuss strategies for successful transvaginal extraction and colpotomy closure.
Design: Educational video highlighting surgical techniques.
Setting: Academic medical center.
Patients or Participants: We present four cases of patients undergoing transvaginal specimen extraction during laparoscopic gynecologic surgery.
Interventions: Transvaginal specimen extraction performed via colpotomy or through a dilated cervix.
Measurements and Main Results: We present a stepwise approach to making a posterior colpotomy for transvaginal specimen extraction: 1) Identify the uterosacral ligaments and rectum, 2) expose and delineate the colpotomy site, 3) ensure maintenance of pneumoperitoneum, and 4) make an incision no wider than the borders of the uterosacral ligaments, using a judicious amount of energy. We demonstrate multiple applications of this approach using a variety of instruments and energy sources. Additionally, we present a case of transcervical specimen extraction through a dilated cervix following laparoscopic supracervical hysterectomy.
Conclusion: We have demonstrated a variety of techniques and applications for transvaginal specimen extraction. This approach represents a safe and effective alternative to mini-laparotomy or power morcellation.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

11:45 AM

Minimizing Risks of Spillage during Laparoscopic Cystectomy

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Study Objective: Demonstrate cystectomy performed over an endocatch bag inserted through a posterior colpotomy.
Design: Video.
Setting: Hospital operating room.
Patients or Participants: 29yo G0 who presented with spotting at time of ovulation, found to have two ovarian dermoid cysts
Interventions: The patient had a laparoscopic cystectomy which was performed over an endocatch bag inserted through a posterior colpotomy.
Measurements and Main Results: The cystectomy was successfully performed via sharp and blunt dissection, along with a traction counter traction technique. The cysts were successfully removed without any spillage.
Conclusion: Inserting an endocatch bag vaginally is a minimally invasive technique to ensure that any spillage that occurs during a cystectomy is contained. It is a safe and feasible intervention.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

11:51 AM

Novel Cystocele Repair at the Time of Laparoscopic Colpopexy

Jayne C.. *Greater Houston Urogyn, Houston, TX*
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Study Objective: To introduce a novel technique for repair of cystocele at the time of vaginal colpopexy.
Design: observation.
Setting: Operative laparoscopic suite.
Patients or Participants: women with cystocele and apical prolapse.
Interventions: laparoscopic surgery.
Measurements and Main Results: reduction of cystocele
Conclusion: This Novel technique for repair of cystocele at the time of vaginal colpopexy is a viable surgical option.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

11:57 AM

Robotic Assisted Laparoscopic Excision of a Placenta Percreta

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Study Objective: To illustrate the steps of a robotic-assisted laparoscopic excision of a placenta percreta.
Design: Placenta accreta spectrum (PAS) is a group of disorders characterized by various degrees of placental invasion through the myometrium and uterine serosa. Incidence has increased in recent years following the increase in cesarean deliveries. Risk factors include previous uterine surgeries, multiple cesarean deliveries and the presence of placenta previa. Ultrasound is the primary diagnostic modality. Most PAS cases are diagnosed in the second trimester, and guidelines for early recognition are sparse. A cesarean hysterectomy is the mainstay of management. This video shows an alternative, fertility-sparing treatment for PAS when diagnosed early.
Setting: The video displays a patient in the operating room in the supine position, with Trendelenburg positioning and a bedside assist for robotic-assisted laparoscopy.
Patients or Participants: We present a case of a 32-year-old G5P1121 with a history of one prior cesarean section and a dilation and curettage who was had early imaging concerning for CS scar ectopic and placenta accreta spectrum.
Interventions: The patient was counseled on termination of pregnancy and given her desire for fertility, counseled on attempted resection of invading pregnancy with uterine repair.
Measurements and Main Results: Key surgical steps illustrated include the following:

1. Lysis of adhesions and separation of bladder
2. Identification of the borders of the pregnancy
3. Injection of vasopressin
4. Laparoscopic guided suction dilation and curettage
5. Dissection invading pregnancy
6. Circumferential resection of the invading pregnancy
7. Full thickness myometrial closure in multiple layers

Conclusion: Early diagnosis of placenta accreta spectrum provides options for alternative fertility-sparing treatment.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

12:03 PM

Minimally Invasive Surgical Approach to Tubo-Ovarian Abscess in Obstructed Hemivagina and Ipsilateral Renal Anomaly (OHVIRA) Syndrome

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Study Objective: We present a case of an acute presentation of tubo-ovarian abscess in the setting of Obstructed Hemivagina and Ipsilateral Renal Anomaly (OHVIRA) syndrome in a non-sexually active adolescent, and demonstrate the surgical principles and techniques used int the management of the tubo-ovarian abscess and obstructed hemivagina/septum.
Design: Case report and surgical video.
Setting: Vaginoscopy and four port laparoscopy.
Patients or Participants: An adolescent female who has never been sexually active, presenting with a tubo-ovarian abscess on a background of OHVIRA syndrome.
Interventions: Vaginoscopy for identification of patent cervix and vaginal septum, laparoscopic drainage of tubo-ovarian abscess, adhesiolysis, and right salpingectomy, vaginoscopic septal resection with monopolar Collins knife.
Measurements and Main Results: A 15-year-old female, who had never been sexually active, presented with lower abdominal pain, fevers and malodorous vaginal discharge. Imaging of the pelvis demonstrated a right tubo-ovarian abscess of $5.8 \times 4.7 \times 5.8$cm, uterine didelphys, obstructed right vaginal cavity, and right renal agenesis, suggesting OHVIRA syndrome. Medical management with intravenous antibiotics was

unsuccessful, and the patient was managed surgically in a minimally invasive manner.
Vaginoscopy identified a normal left cervix, and a small perforation was noted in the vaginal septum. Laparoscopy revealed a right sided tubo-ovarian complex adherent to the right pelvic side wall, bowel, and omentum. Blunt dissection and electrosurgical techniques were used to adhere to tissue planes. Drainage of multiple collections and a subsequent right salpingectomy was performed. A monopolar Collins knife was used with the vaginoscopy to resect the vaginal septum. The patient recovered well and was discharged shortly after her procedure.
Conclusion: Vaginoscopic septal resection is feasible in the setting of OHVIRA syndrome and in non-sexually active patients. Pre-operative imaging allows correct diagnosis of OHVIRA and assist in surgical planning. Care must be taken in tissue dissection to avoid injury.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

12:09 PM

Laparoscopic Vaginoplasty by Peritoneal Pull through Technique

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Study Objective: Laparoscopic management of MRKH syndrome and use of near ideal vaginal mold made up from locally readily available materials in a rural settings.
Design: Laparoscopic surgery in a diagnosed case of MRKH syndrome and follow up for 1 year and parameter which analysed were 1. Ability to perform sexual intercourse by the couple 2. Pain while using vaginal mold 3. Vaginal length at 6 months and 1 year.
Setting: Semi lithotomy position.
Patients or Participants: A diagnosed case of MRalH syndrome.
Interventions: Laparoscopic surgery and use of special vaginal mold for 6 weeks.
Measurements and Main Results: Vaginal length achieved was 7 to 8 cm, couple found to be performing sexual intercourse satisfactorily, vaginoscopy after 6 weeks showed good epithelization.
Conclusion: 1. Use of soft vaginal mold is associated with lesser pain, and 2. Laparoscopic Peritoneal pull through technique has satisfactory results with apt vaginal length.

VIDEO SESSION 4 - LAPAROSCOPY & Tissue Containment & Vaginal Surgery
(11:30 AM — 12:35 PM)

12:15 PM

Laparoscopic Redo Vaginoplasty with Uterine Buds: A Case Report

Pandit H., Nandhini R.. Pandit Hospital, Ahmednagar, India*
*Corresponding author.

Study Objective: To show that laparoscopic approach is beneficial for previously operated and failed modified Davydov vaginoplasty.
Design: A case report.
Setting: laparoscopy surgery with patient in lithotomy position under anaesthesia.
Patients or Participants: 20 years female diagnosed as a case of MRKH syndrome with single right sided kidney previously operated by modified Davydov surgery 6 months ago.
Interventions: Laparoscopic redo vaginoplasty by using uterine buds.
Measurements and Main Results: In modern era, endoscopy has replaced abdominal and vaginal approach of vaginoplasty. There is hardly any case report of Redo vaginoplasty done by vaginal or laparoscopic approach. Laparoscopic redo vaginoplasty by using uterine buds is done for the first time as per our knowledge and no such case has been reported in literature.
The patient presented with complaints of shortening of vagina even with gradual vaginal dilatation. On per speculum examination, the vaginal length had shortened to about 2cm and width around 1.5cm. Patient was planned for redo vaginoplasty by laparoscopic approach.
Intraoperatively, the lateral peritoneal flap on left side was tried but because of extensive fibrosis and shrinkage of peritoneum from previous surgery we proceeded with mobilization of Right sided uterine buds as a flap and used for creation of anterior vaginal wall. The vaginal vault was opened after difficult separation of bladder and rectum. The right uterine bud was mobilized into vaginal opening to form anterior vaginal wall and rectum pulled down to create posterior vaginal wall. Purse string suture was taken to create vaginal apex to create a vaginal length of approximately 8-10 cm. Vaginal mold placed and gradual dilatation done. At 1-year follow-up, patient had good anatomical and functional vagina of length 7-8cm.
Conclusion: Laparoscopic redo vaginoplasty using uterine buds can give successful outcome for failed vaginoplasty with added benefits of laparoscopic routes.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

2:03 PM

Laparoscopic Excision of Retroperitoneal Adnexal Cyst

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Study Objective: To demonstrate the laparoscopic excision of a retroperitoneal adnexal cyst and describe the advanced surgical techniques and anatomic considerations in a patient with prior abdominopelvic surgery.
Design: Stepwise demonstration of advanced laparoscopic techniques with narrated video footage.
Setting: Adnexal masses after hysterectomy are a common reason for repeat abdominal surgery. Up to 9% of patients may require future adnexal surgery if ovarian preservation was chosen at the time of hysterectomy. Indications for surgery can include persistent adnexal masses, masses with concern for malignancy, chronic pelvic pain, and risk-reducing surgery.
Patients or Participants: 53-year-old post-menopausal female with a history of a total abdominal hysterectomy and left salpingectomy who underwent the excision of an 8-centimeter retroperitoneal left adnexal cyst.
Interventions: Excision of a retroperitoneal adnexal cyst can be performed through a laparoscopic approach with several key strategies:

1. Use of advanced laparoscopic techniques, such as the "push and spread" method and quick bursts of bipolar energy to prevent injury to vessels, bowel and bladder
2. Use of traction and counter-traction techniques to aid in dissection
3. Knowledge of retroperitoneal anatomy and avascular spaces to assist with dissection
4. Early ligation of the infundibulopelvic ligament to minimize blood loss
5. High ligation of the infundibulopelvic ligament and complete ureterolysis from the level of the pelvic brim to bladder to completely excise ovarian tissue

Measurements and Main Results: N/A.
Conclusion: Knowledge of retroperitoneal anatomy is crucial in the surgical management of retroperitoneal adnexal masses as dissection can be

technically challenging and anatomy may be distorted due to pelvic adhesive disease. Use of advanced laparoscopic techniques and understanding surgical planes are important for safe dissection. High ligation of the infundibulopelvic ligament at the pelvic brim and a complete ureterolysis with parametrial excision are often necessary to remove all ovarian tissue to prevent an ovarian remnant.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

2:09 PM

Chronic Pelvic Pain: A Guide to Perform a Focused Physical Exam

Ajewole C.O.,[*,1] *Bestoyong D.,*[2] *Ouyang C.,*[1] *Feranec J.B.,*[1] *Lamvu G.,*[1] *Carrillo J.F.*[1,3]. [1]*Minimally Invasive Gynecologic Surgery, Orlando VA Healthcare System, Orlando, FL;* [2]*Obstetrics and Gynecology, University of Central Florida/HCA Healthcare GME Greater Orlando, Orlando, FL;* [3]*Obstetrics and Gynecology, University of Central Florida College of Medicine, Orlando, FL*
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Study Objective: To educate health professionals about how to perform a focused physical exam for a chronic pelvic pain (CPP) patient, applying a trauma informed care model, especially when invasive procedures might be part of their treatment plan.
Design: An educational video was designed applying current adult learning principles and theories, in which we demonstrate a step-by-step guide on how to carry a focused physical exam to assess the CPP patient using evidence-based techniques and tests, to maximize data gathering and minimize unnecessary discomfort.
Setting: Ambulatory clinic/setting.
Patients or Participants: Gynecological patients suffering from CPP.
Interventions: A systematic, trauma-informed model approach to evaluate and elucidate visceral, musculoskeletal, and neurological sources of chronic pelvic pain.
Measurements and Main Results: An evidence-based educational video to provide clinicians a resource on how to complete a focused and systematic physical exam for patients with CPP.
Conclusion: CPP patients often have multiple co-occurring conditions, including musculoskeletal and neurological in origin. A timely identification of these conditions will lead to better treatment outcomes.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

2:15 PM

The Bare Bones of Endometrial Osseous Metaplasia

Tigdi J.,[*,1] *Alsalem H.N.,*[1] *Zeni G.M.,*[2] *Leonardi M.*[3]. [1]*Minimally Invasive Gynecologic Surgery, Obstetrics and Gynecology, McMaster University, Hamilton, ON, Canada;* [2]*Obstetrics and Gynecology, McMaster University, Hamilton, ON, Canada;* [3]*Sydney Medical School Nepean, University of Sydney, Sydney, NSW, Australia*
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Study Objective: To describe the background, pathogenesis, and clinical symptomatology of endometrial osseous metaplasia (EOM). To outline the work-up and management of patients with suspected EOM. To highlight key considerations in managing patients with EOM.
Design: A Case Report.
Setting: Tertiary Care Academic Centre.
Patients or Participants: Case report of a patient with endometrial osseous metaplasia.
Interventions: N/A.
Measurements and Main Results: In this video, we present the case of a healthy 39-year-old with a known history of endometriosis who presented with menstrual irregularities and chronic pelvic pain with suprapubic cramping. An advanced transvaginal ultrasound demonstrated echogenic linearities predominantly within the uterine cavity with some extension into the myometrium. Previous uterine instrumentation history includes two early pregnancies treated by D&C as well as two prior IUDs that were documented to have been removed. Endometrial biopsy revealed sampling of normal endometrial tissue without comment of any abnormalities in the tissue obtained. Operative hysteroscopy was performed with findings of osseous trabecular tissue embedded within the myometrium.
Conclusion: This uncommon pathologic entity is important to recognize as a potential cause for chronic pelvic pain, menstrual irregularities and fertility issues. Appropriate detection with ultrasound first-line can help to increase suspicion of this phenomenon. Ultimate investigation via hysteroscopic removal of abnormal tissue with sampling of the underlying endomyometrium is necessary for diagnosis and treatment of symptoms.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

2:21 PM

Hysteroscopic Botox: A Novel Pelvic Pain Treatment

Trautner E.C.,[*,1] *Shockley M.E.,*[2] *Chahine E.B.,*[3] *Lachiewicz M.P.*[2]. [1]*Ob-Gyn, Emory University School of Medicine, Atlanta, GA;* [2]*Gynecology & Obstetrics, Emory University School of Medicine, Atlanta, GA;* [3]*Emory Obstetrics and Gynecology, Atlanta*
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Study Objective: The objectives of this video are to describe the patient selection criteria, procedural steps, and postoperative care for hysteroscopic onabotulinumtoxinA (Botox) injection as a treatment for pelvic pain.
Design: N/A**.**
This tutorial video demonstrates the surgical technique of hysteroscopic Botox administration.
Setting: Hysteroscopic Botox injections are administered through an operative hysteroscope introduced into the endometrial cavity. The procedure is performed in an operating room setting with the patient in dorsal lithotomy position.
Patients or Participants: Hysteroscopic Botox treatment can be considered in patients with pain of uterine origin who have failed conservative pelvic pain therapy, have normal pelvic imaging, and a laparoscopy negative for endometriosis. Patients ineligible for the procedure include those with an allergy to Botox or with any contraindication to hysteroscopy. Caution is warranted in patients pursuing pregnancy, as the effect of treatment on fertility is unknown.
Interventions: After diagnostic hysteroscopy confirms a normal endometrial cavity, a resection device is used to thin the entirety of the endometrium. 200 Units of Botox mixed with 3 mL of injectable saline is drawn into a syringe which is loaded into a control flow administration device. A hysteroscopic needle is attached to the tip of the syringe. Hysteroscopy is resumed, the needle is advanced through the operative channel, and the dilute Botox solution is injected into the myometrium at even intervals throughout the endometrial cavity.
Measurements and Main Results: Patient response is evaluated two weeks following the procedure using a numeric pain scale. If the patient reports significant benefit, the procedure may be repeated at six months.
Conclusion: Hysteroscopic Botox administration is a novel treatment approach for refractory uterine pain. One observational study demonstrates improvement in patient pain scores postoperatively. A randomized control trial is needed to confirm the efficacy of this treatment.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

2:27 PM

Pelvic Nerve Blocks

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*Corresponding author.

Study Objective: To demonstrate nerve block techniques for the obturator nerve, pudendal nerve, and uterine nerves (paracervical block).
Design: Procedural video.
Setting: Academic medical center.
Patients or Participants: Patients with chronic pelvic pain.
Interventions: This video demonstrates how to perform obturator, pudendal, and paracervical nerve blocks. This video highlights the techniques of these pelvic floor nerve blocks and includes general management and follow-up principles for these patients.
Measurements and Main Results: Pain scores, on a scale of 0-10, are measured prior to and after nerve blocks to gauge response.
Conclusion: Determining the source of chronic pelvic pain can be difficult for gynecologists. Nerve blocks can be an effective strategy to help evaluate and possibly treat pelvic pain. Pelvic floor nerve blocks can delineate whether or not pain is originating from the pelvic floor, uterus, or other source. Nerve blocks can also potentially be therapeutic in instances of nerve entrapment, muscle spasms, neuralgia, or myofascial pain. These instructional videos on administering pelvic floor nerve blocks can help gynecologists provide an additional source of therapy for their patients.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

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Minimally Invasive Surgical Management of Tubo-Ovarian Abscess

O'Leary M.,[*,1] *Russell E.H.,*[2] *Belland L.M.*[2]. [1]*Minimally Invasive Gynecologic Surgery, McMaster University, Hamilton, ON, Canada;* [2]*Obstetrics and Gynecology, University of Calgary, Calgary, AB, Canada*
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Study Objective: This video demonstrates a minimally invasive stepwise approach to surgical management of the tubo-ovarian abscess. Patient characteristics with high likelihood of requiring surgical intervention for TOA and considerations for pre-operative optimization are reviewed. Three novel surgical techniques are illustrated to help avoid intra-operative complications, particularly involving the bowel. '*Gravity for traction*' with sharp dissection, gentle interrogation of tissue planes and '*tissue plane surfing*' are demonstrated to achieve normalization of anatomy and surgical goals. The role of salpingectomy in fertility and non-fertility cases is also explored.
Design: N/A.
Setting: N/A.
Patients or Participants: Written consent was obtained from patient cases illustrated by this video.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: N/A.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

2:39 PM

Laparoscopic Resection of Rudimentary Horn for Treatment of Pelvic Pain

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Study Objective: To provide a brief overview of symptomatology of rudimentary uterine horns, as well as to demonstrate a minimally invasive resection of a rudimentary horn for treatment of pelvic pain.
Design: Surgical video.
Setting: Academic tertiary care hospital.
Patients or Participants: 24-year-old G0P0 initially evaluated for worsening menorrhagia and dysmenorrhea. Pelvic MRI showed a unicornuate uterus with a 2.5 cm nondistended noncommunicating right rudimentary horn.
Interventions: A laparoscopic resection of a rudimentary uterine horn was planned. The right pelvic sidewall was opened. The origin of the uterine artery was dissected out and cauterized. The round ligament was divided, and the anterior leaf of the broad ligament was undermined and incised to the end of the rudimentary horn. The right fallopian tube was followed to its fimbriated end, and a total salpingectomy was performed, and the remaining portion of the rudimentary horn was resected. A posterior colpotomy was created, and a specimen retrieval bag was inserted through the colpotomy. The specimen was completely removed in the bag. The colpotomy was then closed in a running fashion.
Measurements and Main Results: The patient was discharged on post operative day zero. She had a follow-up visit after 1 week, meeting all milestones and without complications. Upon long term follow up she reported improved pain.
Conclusion: Uterine rudimentary horns represent a mullerian anomaly that can be associated with cyclic pelvic pain. Laparoscopic resection of rudimentary horn can offer a minimally invasive option for immediate improvement in pelvic pain.

VIDEO SESSION 5 - PELVIC PAIN
(2:00 PM — 3:05 PM)

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Don't Forget to Look Up: Operating in the Upper Abdomen

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Study Objective: To illustrate strategies to improve efficiency and ergonomics when operating in the upper abdomen.
Design: A stepwise demonstration of our operating room modifications when operating in the upper abdomen with narrated video footage.
Setting: Given the marked improvement in laparoscopic technology, gynecologic surgeons feel comfortable operating in the pelvis for a variety of gynecologic pathologies. When pathology is found outside of the pelvis, however, gynecologic surgeons find operating in the upper abdomen

challenging. Operating in the upper abdomen is difficult given the loss of ergonomics and the impression of operating backwards. It is prudent for minimally invasive gynecologic surgeons to master operating in the upper abdomen given the variety of pathologies a gynecologist can encounter outside of the pelvis. We aim to describe our operating room modifications that help simulate operating in the upper abdomen as if one was operating in the pelvic cavity.

Patients or Participants: A compilation of various patient procedures showcasing upper abdominal surgery including resection of pericardial endometriosis, Morrison's pouch endometriosis and a para-aortic lymphadenectomy.

Interventions: The patients elected to undergo laparoscopic surgery for their individualized evaluation and treatment plan. If the surgery is a combined procedure, after completion of the pelvic phase, the operating room must be modified to proceed with the upper abdomen. Strategies to improve efficiency and ergonomics when operating in the upper abdomen include:

- Switching monitors to the patients' shoulders bilaterally
- Changing surgeon location to the right side of the patient
- Changing port configuration
- 30-degree camera selection

Measurements and Main Results: All patients recovered well without any postoperative complications.

Conclusion: Although gynecologic surgeons have the skills and adequate knowledge of anatomy to operate in the upper abdomen, some lack the ability to adapt their surgical set up to operate outside the pelvis. Gynecologists should familiarize themselves with strategies and techniques to be able to confidently operate in the upper abdomen.

VIDEO SESSION 6 - FIBROIDS
(2:00 PM — 3:05 PM)

2:03 PM

Low-Cost High-Fidelity Minimally Invasive Myomectomy Model for Laparoscopic and Robotic-Assisted Simulation

Kim J.S., Jan A., Wright V.. Gynecology, Beth Israel Lahey Clinic, Burlington, MA*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate the creation and use of a low-cost, high-fidelity model for simulating a minimally invasive myomectomy.

Design: N/A.

Setting: A simulation center within an academic medical institution.

Patients or Participants: N/A.

Interventions: Residents trialed a high-fidelity model created from a porcine tongue and small potatoes to represent a fibroid uterus. A grounding pad was affixed to the model in order to allow for the use of energy sources. A laparoscopic tower as well as a simulation robot was used to carry out the procedure.

Measurements and Main Results: The model was used to demonstrate the four components of a minimally invasive myomectomy: 1) planning and placement of the hysterotomy, 2) incision, 3) extraction of the fibroid, and 4) suturing the fibroid bed. Residents who used the model "agree"-d to "strongly agree"-d on a 5-point Likert scale that the model simulated in vivo tissue, and all felt that using the model helped them feel more comfortable participating in a minimally invasive myomectomy in the future.

Conclusion: Use of this novel high-fidelity myomectomy model allowed medical trainees to feel more comfortable participating in a minimally invasive myomectomy. Future directions for this model include validating the model in a larger population of trainees and surgeons with various experience levels and using this model to simulate entry into the endometrial cavity.

VIDEO SESSION 6 - FIBROIDS
(2:00 PM — 3:05 PM)

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Posterior Colpotomy: A Less Invasive Option for Tissue Extraction

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*Corresponding author.

Study Objective: To review critical steps of specimen extraction through a posterior colpotomy during laparoscopic and robotic myomectomy.

Design: Stepwise demonstration of the technique with narrated video footage.

Setting: Power morcellation was the primary method of removing larger specimens without performing a mini-laparotomy for minimally invasive gynecologic surgery until 2014. This changed when the FDA placed restrictions due to concern for the spread of unsuspected cancer cells with power morcellators. Gynecologic surgeons have since been required to search for the best methods to remove large specimens, such as leiomyomas, in safe and efficient ways. One technique is the use of posterior colpotomy for removal of specimens up to 10 cm in size to avoid performing a laparotomy or mini-laparotomy.

Patients or Participants: The first case demonstrates a patient with a 6 cm pedunculated fibroid removed laparoscopically. The second case depicts a patient with a symptomatic fibroid uterus, the largest fibroid 9 cm in diameter. All specimens are removed via posterior colpotomy within containment bag.

Interventions: This video demonstrates how to identify key anatomic landmarks for safe colpotomy creation during laparoscopic and robotic surgery. Tips for extracting larger specimens are covered with review of important aspects of colpotomy closure.

Measurements and Main Results: Both patients did well postoperatively with resolution of symptoms and no complications. Specimens were removed intact with no issues related to creation of colpotomy.

Conclusion: Minimally invasive gynecologic surgery has proven benefits over laparotomy but creates the challenge of safe and efficient specimen extraction. Use of a posterior colpotomy, either robotically or laparoscopically, allows for maintenance of small skin incisions and efficient removal of an intact, contained, solid specimens up to 10cm in size. This technique is demonstrated via myomectomy and removal of leiomyoma but can be applied to safe removal of other types of large intra-abdominal specimens.

VIDEO SESSION 6 - FIBROIDS
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2:15 PM

Laparoscopic Management of an Atypical Presentation of a Large Degenerated Fibroid during Pregnancy

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Study Objective: Key steps in management of atypical presentation of large uterine fibroids during pregnancy.

Design: McMaster University Medical Centre.

Setting: Case Review.

Patients or Participants: Single case.

Interventions: Expert Ultrasound evaluation.

Measurements and Main Results: Safe laparoscopic intervention guided by ultrasound for management of large fibroids during pregnancy.
Conclusion: This video highlights key strategic steps in evaluating an atypical presentation of uterine fibroid degeneration during pregnancy. Management strategies include a careful review of the patient's history, appropriate physical exam, and evaluation of prior imaging studies. The role of expert ultrasound evaluation is crucial to the patient's care as it provides more insight into the pathology encountered, which will facilitate an appropriate treatment plan after reviewing the available options. Collaboration with other teams is essential to provide a complete analysis that will ultimately ensure patients' autonomy in the process.
In addition to the above, laparoscopic surgery is a feasible option during pregnancy that allows direct evaluation and specifically in this case diagnosis and surgical intervention with the aim to prolong a safe pregnancy.

VIDEO SESSION 6 - FIBROIDS
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2:21 PM

Approach to Total Laparoscopic Hysterectomy Involving Large Cervical Myomas

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Study Objective: To review the literature regarding cervical myomas and present surgical videos from two cases of patients who underwent total laparoscopic hysterectomy for large cervical myomas, reviewing surgical techniques and key steps in approaching total laparoscopic hysterectomy with large anatomy distorting cervical myomas in two different locations.
Design: Two case reports with surgical videos.
Setting: Tertiary care hospital.
Patients or Participants: Two patients.
Interventions: Patient 1 was a 48 y/o G2P0 with a history of myomas presenting with pelvic pain and heavy menstrual bleeding that had been worsening. Ultrasound demonstrated a 6 cm right anterior cervical myoma and patient underwent total laparoscopic hysterectomy for management. Patient 2 was a 52 y/o G5P3 with a history of myomas presenting with heavy menstrual bleeding. Ultrasound demonstrated a 9.7 cm posterior cervical myoma and patient underwent total laparoscopic hysterectomy for management. In both cases, hysterectomy was accomplished laparoscopically by ligating uterine arteries at their origin in the pelvic side wall to control blood supply, enucleating the myomas to restore more normal anatomy, and using colpotomy cup to help identify cervical edges.
Measurements and Main Results: Both hysterectomies were completed laparoscopically with minimal blood loss, no complications, and complete removal of cervix despite anatomical distortion. Surgical techniques are reviewed in the surgical video.
Conclusion: Large cervical myomas can significantly distort anatomy, posing surgical challenges, but laparoscopic hysterectomy is still feasible by securing the blood supply to the uterus and restoring normal anatomy with familiarity of pelvic spaces and care dissection of surrounding vital structures.

VIDEO SESSION 6 - FIBROIDS
(2:00 PM — 3:05 PM)

2:27 PM

Retropubic Leiomyoma Causing Urinary Retention: A Case Report

Bellelis P.,[*,1] *Guglielmetti G.,*[2] *Bruscagin, Sr. V.S.,*[3] *Nastri F.V.,*[4] *Fernandes C.,*[5] *Corinti Son M.*[6]. [1]*Obstetrics and Gynecology, University of Sao Paulo, Sao Paulo, Brazil;* [2]*Urology, University of Sao Paulo, Sao Paulo, Brazil;* [3]*General Surgery, Santa Casa Hospital, São Paulo, Brazil, Sao Paulo, Brazil;* [4]*Paediatrics, University of Sao Paulo, Sao Paulo, Brazil;* [5]*Gynecology, Hospital Israelita Albert Einstein, Sao Paulo, Brazil;* [6]*Gynecology, Hospital Israelita Albert Einstein, Sao Paulo, Sao Paulo, Brazil*
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Study Objective: To present a rare case and the surgical treatment of a retropubic leiomyoma.
Design: Case report illustrated with video.
Setting: We used the da Vinci Si platform in a side docking fashion, with four robotic arms and a laparoscopic 11mm trocar. Uterine manipulator and foley catheter were placed.
Patients or Participants: We present the case of a 39-year-old woman complaining of voiding difficulty, recurrent urinary tract infections and dyspareunia. At the pelvic examination, she had a 4 cm nodule in the anterior vaginal wall, occupying the retropubic space. The complementary investigation with pelvic MRI evidenced an infravesical solid nodular image with lobulated and well-defined contours, located anteriorly to the urethra, with a plane of contact with its anterior wall. It is manifested by intermediate signal on T1 and T2, absence of restriction to the water molecules diffusion and enhancement by contrast medium similar to the myometrium, measuring $3.0 \times 3.6 \times 3.1$ cm. The patient was seen by a urologist which suggested a transvaginal biopsy to exclude malignancy. The biopsy result was leiomyoma.
Interventions: Patient was eligible for a robotic-assisted laparoscopic excision of a retropubic (FIGO 8) leiomyoma. The access to retropubic space was made through the urachus until the pubic bone. The fibroid was easily identified behind the pubic symphysis. Lateral dissection was carried out to identify landmarks and the fibroid was excised using gentle movements. There was no urethral or vesical lesion. The defect was closed with a double layer suture.
Measurements and Main Results: The foley catheter was removed in the first postoperative day and the patient had complete remission of symptoms. The final histopathological report confirmed leiomyoma.
Conclusion: Although being extremely rare, leiomyomas in the Retzius space should be considered in the differential diagnosis of voiding dysfunctions.

VIDEO SESSION 6 - FIBROIDS
(2:00 PM — 3:05 PM)

2:33 PM

Navigating Cervical Fibroids during Laparoscopic Hysterectomy: Essential Tips and Tricks

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Study Objective: To review three key strategies to safely navigate cervical fibroids when performing a laparoscopic hysterectomy.
Design: Case series of two patients undergoing total laparoscopic hysterectomy (TLH) for abnormal uterine bleeding in the setting of large cervical fibroids.
Setting: Both patients underwent their planned surgeries at a large-volume county hospital. Video footage was obtained during these procedures.
Patients or Participants: Two women who had completed childbearing and desired definitive surgical management for abnormal uterine bleeding underwent TLH. The first patient's cervical fibroid was 6.5cm in size, and the second patient's cervical fibroid was 8cm in size, confirmed on both pelvic exam and pre-operative pelvic MRI imaging. Neither patient had a significant past medical or surgical history.
Interventions: Total laparoscopic hysterectomy for a patient with a large cervical fibroid can be completed safely using three key strategies:

1. Ureteral identification, including ureterolysis if necessary and consideration of prophylactic ureteral catheter placement

2. Ligation of the uterine artery at its origin to minimize risk of blood loss
3. Delineation of the cervicovaginal junction using a Breisky-Navratil retractor to safely perform the colpotomy

Measurements and Main Results: The two presented cases demonstrate successful incorporation of the above techniques and ultimately safe completion of the laparoscopic hysterectomy for both patients.

Conclusion: Cervical fibroids are rare, however when present, can pose unique challenges to the gynecologic surgeon when performing a laparoscopic hysterectomy. Here we demonstrate three reproducible techniques for minimizing injury to adjacent organs and minimizing intraoperative blood loss, allowing the surgeon to safely navigate the difficulties presented by the cervical fibroid and maintain a minimally invasive approach.

VIDEO SESSION 6 - FIBROIDS
(2:00 PM — 3:05 PM)

2:39 PM

Laparoscopic Single Site Techniques in Management of Fibroid Pain during Pregnancy

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Study Objective: To demonstrate tips and tricks for the successful use of single site laparoscopic surgery for myomectomy during pregnancy.

Design: Stepwise demonstration with narrated video footage.

Setting: An academic tertiary care hospital.

Patients or Participants: Our patient is a 39-year-old G1P0 with a symptomatic 12cm degenerating pedunculated fibroid refractory to conservative pain management.

Interventions: Recent literature has indicated that the majority of laparotomic myomectomies performed during pregnancy showed overall positive pregnancy outcomes and low complications. This indicates that myomectomy in pregnancy is safe and can be utilized in cases unresponsive to conservative management. However, cases in literature discussing the single-site techniques for laparoscopic myomectomy during pregnancy has been sparse. Utilizing laparoscopy in myomectomy during pregnancy, permits decreased postoperative pain, quicker recovery, and lowered risk of post-operative complications. Single site laparoscopic surgery also aids in improved patient cosmesis and can be utilized for the fibroid removal. Literature has demonstrated that laparoscopic single site is safe and feasible during all stages of pregnancy. Nevertheless, this approach may be challenging for unexperienced surgeons due to the lack of triangulation and crowding of instruments in single site laparotomy.

Tips and Tricks:
1. Utilizing the open-Hasson-technique
2. Placing a suture in the fibroid stalk
3. Surgeon possessing expertise in single site surgery
4. Minimizing manipulation of the uterus
5. V-loc sutures
6. Placement of a 5 mm accessory port
7. Using gentle traction
8. Leaving a stump of more than 1 cm.

Measurements and Main Results: The estimated blood loss was 50cc and the total operative time was 123 minutes. She had an unremarkable postoperative course, no medications were needed for pain management, and was discharged home on post-operative day 2. At 38 weeks, she successive delivered with elective cesarean delivery with no complications.

Conclusion: Single incision laparoscopic surgery myomectomy is a practical technique in women refractive to conservative management. When performed by an experienced surgeon the patient can benefit from faster specimen removal and recovery.

VIDEO SESSION 6 - FIBROIDS
(2:00 PM — 3:05 PM)

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Round Ligament Injection with Vasopressin during Myomectomy

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Study Objective: To demonstrate the surgical technique of round ligament injection with vasopressin during laparoscopic and abdominal myomectomy as a novel technique to help minimize blood loss.

Design: N/A.

Setting: Academic Hospital System.

Patients or Participants: Our first case is a 32-year-old G0 with large fundal fibroid measuring 5.3 cm who underwent laparoscopic myomectomy. Our second case is a 33-year-old G0 with a large posterior fibroid measuring approximately 17 cm by 15 cm on preoperative MRI who underwent an abdominal myomectomy.

Interventions: We perform round ligament injection at the beginning of both cases prior to starting myomectomy. We first dilute 20 units of vasopressin in 60 mL of injectable saline. After identifying the round ligament, we inject a total of 20 ml of dilute vasopressin approximately halfway along the round ligaments bilaterally.

Measurements and Main Results: Both patients underwent uncomplicated laparoscopic and abdominal myomectomies, respectively. They were both recovering well at their 2-week follow-up visits.

Conclusion: Numerous medical and surgical techniques have been described to minimize potentially significant blood loss during abdominal, laparoscopic, and robotic-assisted myomectomies. In this video, we demonstrate the novel technique for round ligament injection with vasopressin as another adjunct method to use to further help minimize both loss at the time of either laparoscopic or abdominal myomectomy.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery
(2:00 PM — 3:05 PM)

2:03 PM

Multidisciplinary Approach to the Surgical Management of Interstitial Ectopic Pregnancy

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Study Objective: We aim to present a multidisciplinary approach to localize and resect suspected interstitial ectopic pregnancy.

Design: Case report.

Setting: Academic medical center.

Patients or Participants: 28-year-old at 6 weeks gestation by last menstrual period presented to the emergency department with spotting. Although initial ultrasound suggested an eccentric intracavitary pregnancy, follow up imaging two weeks later showed that the pregnancy was located at the uterotubal junction, distinct from the endometrial cavity, and with thin overlying myometrium. This ruled in for suspected interstitial ectopic pregnancy.

Interventions: Given the patient's gestational age, vaginal spotting and pelvic pain, she was recommended to undergo surgical management.

Upon laparoscopic entry, the pregnancy was not well visualized as it did not deform the uterine serosa.
Measurements and Main Results: We present a surgical approach to suspected interstitial ectopic pregnancy that is not well-visualized at the time of laparoscopy. The following principles are explored: 1) use of multiple minimally invasive modalities (laparoscopy and hysteroscopy) to perform thorough evaluation for pregnancy location, 2) incorporation of intraoperative ultrasound, 3) temporary vessel ligation and injection of intramyometrial vasopressin, 4) complete enucleation of products of conception, and 5) closure of the myometrial defect.
Conclusion: We emphasize the benefits of a multidisciplinary approach to localization and resection of interstitial ectopic pregnancy. This patient was discharged home in good condition with no complications.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

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Laparoscopic Resection of Cesarean Scar Pregnancy at 11 Weeks Gestational Age

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Study Objective: To demonstrate a laparoscopic technique for resection of cesarean scar pregnancy (CSP) and revision of cesarean scar defect.
Design: We present a stepwise narrated demonstration of our technique of a resection of a CSP.
Setting: Referral Center in NY.
Patients or Participants: 33-year-old with cesarean scar pregnancy at 11 weeks gestational age, desiring fertility sparing treatment
Interventions: A retroperitoneal dissection is performed, and the uterine blood supply is isolated**.** Hemostatic control is achieved with the use of intrauterine vasopressin and temporary occlusion of the uterine blood supply. The bladder is carefully dissected from the lower uterine segment and cesarean scar pregnancy. Ultrasound guidance is used to assist in hysterotomy location for resection of the ectopic pregnancy. The myometrium is repaired with a 3-layer closure. Uterine ventrosuspension by plication of the round ligaments bilaterally results in anteversion of the previously sharply retroverted uterus, reducing tension on the repair. Hysteroscopy under laparoscopic visualization confirms repair of the scar defect.
Measurements and Main Results: Successful laparoscopic resection of a cesarean scar ectopic pregnancy and resection of scar defect with EBL of 250 mL. Patient discharged home postoperative day one. Normal appearing uterus on 3-month follow-up MRI with no residual cesarean scar defect and residual myometrial thickness of 1.6 cm.
Conclusion: Laparoscopic resection provides a means of addressing cesarean scar pregnancy at advanced gestational age while repairing the associated cesarean scar defect. Control of the uterine blood supply and mobilization of the bladder are critical aspects of the surgery. Intraoperative ultrasound and laparoscopic guided hysteroscopy can ensure full resection of the defect and achieve optimal repair. For the retroverted uterus, ventrosuspension may avoid tension on the repair to promote healing. For this patient, our technique resulted in no residual cesarean scar defect on follow-up imaging.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

2:15 PM

Interstitial Pregnancy: Surgical Management by Laparoscopic Cornuostomy

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Study Objective: Our objective is to add to current literature support for laparoscopic cornuostomy as a safe and effective minimally invasive surgical management for interstitial (cornual) ectopic pregnancy.
Design: Surgical video.
Setting: Highland Hospital, Alameda Health System (safety-net county hospital). Patient was positioned in dorsal lithotomy with both arms tucked at the side. Standard laparoscopic and hysteroscopic equipment was used including four 5mm laparoscopic ports.
Patients or Participants: A single patient was involved in this surgical video.
Interventions: Same-day laparoscopic cornuostomy and diagnostic hysteroscopy with attempted tubal cannulation.
Measurements and Main Results: Multiple telephone visits with the patient to monitor clinical symptoms and post-op recovery, including Beta hCG measurements until Beta hCG level was undetectable. Beta hCG levels: 11, 783 (pre-op) -> 47 (15 days post-op) -> 7 (34 days post-op) -> undetectable (44 days post-op).
Conclusion: Laparoscopic cornuostomy for the surgical management of interstitial pregnancy, as opposed to cornual wedge resection, should be considered, particularly in stable patients with intact ectopic pregnancy. The minimally invasive techniques we demonstrate in this video are reproducible, effective, and efficient. Additional study is required to understand how this surgical approach could impact ipsilateral tubal patency and pregnancy outcomes such as uterine rupture.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

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Laparoscopic Salpingostomy for Tubal Ectopic Pregnancy

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Study Objective: To demonstrate our technique for laparoscopic salpingostomy when indicated for surgical management of tubal ectopic pregnancy and expand access to this fertility sparing option.
Design: Case series presenting a stepwise narrated demonstration of salpingostomy for tubal ectopic pregnancy.
Setting: Referral Center in Upstate NY.
Patients or Participants: Case series of two patients with tubal ectopic pregnancy who required surgical management due to hemoperitoneum and elected to proceed with salpingostomy.
Interventions: Both patients presented to the emergency room and were found to have peritoneal signs on exam with ultrasound suggestive of ruptured ectopic pregnancy. On laparoscopy, hemoperitoneum was

evacuated and diagnosis was confirmed. Using a monopolar hook, a salpingostomy was created on the lateral aspect of the fallopian tube. Gentle traction on pregnancy tissue and hydrodissection were utilized to displace the ectopic and ensure evacuation of all tissue while maintaining integrity of the tubal lumen. The salpingostomy was repaired in a single running closure.

Measurements and Main Results: Successful laparoscopic management of tubal ectopic pregnancy with preservation of the fallopian tube. Patients were discharged home on postoperative day 0. On follow up, beta-hCG trended down to zero and pathology was consistent with ectopic pregnancy.

Conclusion: Salpingostomy for tubal ectopic pregnancy provides a means of preserving the fallopian tube when surgical management of tubal ectopic pregnancy is required. Salpingostomy may increase the chance of subsequent IUP at the expense of an increased risk of future ectopic and is of particular importance for a patient with a damaged contralateral fallopian tube where salpingectomy would result in sterilization.

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VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

2:27 PM

Surgical Management of Second Trimester Cesarean Scar Ectopic Pregnancy with Laparoscopic Wedge Resection

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Study Objective: To review the case of a second trimester cesarean scar ectopic pregnancy managed with laparoscopic resection in a patient with a history of renal transplant.

Design: Video demonstration of surgical technique with narrated description.

Setting: Academic tertiary care site.

Patients or Participants: 36yo G5P0221 found to have a 14-week cesarean scar ectopic pregnancy, desiring fertility sparing intervention.

Interventions: In this video, we demonstrate the case of a second trimester cesarean scar ectopic pregnancy resected laparoscopically. We illustrate several key points including:

- Safe port placement in the setting of prior renal transplant
- Preemptive hemostasis management with temporary uterine artery ligation
- Intraoperative strategies for reducing blood loss
- Considerations for management of gestational sac rupture and abdominal spill of fetal contents

Measurements and Main Results: A 14-week cesarean scar ectopic pregnancy was successfully resected with minimal blood loss and excellent recovery.

Conclusion: Laparoscopic resection can be safely and effectively utilized even for cesarean scar ectopic pregnancies of more advanced gestational ages.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

2:33 PM

Laparoscopic Wedge Resection of a Cesarean Scar Ectopic Pregnancy at Nine Weeks Gestation

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Study Objective: To demonstrate an approach to laparoscopic wedge resection of a cesarean scar pregnancy (CSP).

Design: Video abstract.

Setting: Tertiary care Centre.

Patients or Participants: This case is of a 40-year-old G6P3, with 3 prior cesarean sections who was referred with a possible ectopic pregnancy at 8 +3 weeks gestation after presenting with cramping and irregular bleeding. Following admission to hospital, transvaginal ultrasound revealed a CSP and a type 1 placenta percreta with no bladder involvement. The patient wished for fertility-sparing management which was planned to include pre-operative intragestational methotrexate and uterine artery embolization followed by laparoscopic wedge resection. Before pre-operative interventions could be done, the patient experienced acute vaginal bleeding and she was taken urgently for surgical management.

Interventions: Laparoscopic wedge resection of the CSP.

Measurements and Main Results: Laparoscopy revealed bladder adhesions high over the lower uterine segment and the CSP. Wedge resection of the CSP was successfully achieved with restoration of normal anatomy using a systematic approach to lysis of adhesions as well as intraoperative vascular control using dilute vasopressin and pre-emptive skeletonization of the uterine vessels. Surgical blood loss was 100mL. There were no intraoperative or postoperative complications, and the patient was discharged home post-operative day 1. The patient's beta HCG levels returned to normal within one month.

Conclusion: CSPs account for approximately 4% of all ectopic pregnancies. Management is individualized and often requires a multi-modal approach. This case demonstrates a safe and successful approach to fertility-sparing laparoscopic wedge resection.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

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Laparoscopic Abdominal Cerclage after Prior Radical Trachelectomy

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Study Objective: To present a case and surgical video of laparoscopic abdominal cerclage placement after prior radical trachelectomy and demonstrate techniques in overcoming challenging dissections and an alternative surgical technique in placement of cerclage.

Design: Case report and surgical video.

Setting: In the operating room with a patient in dorsal lithotomy position with both arms tucked. A 10mm port was placed at the umbilicus and 3 additional 5mm ports were placed in the right and left lower quadrant and suprapubic region. A uterine manipulator, flexible laparoscopic, and bipolar sealing device were used.

Patients or Participants: One patient.

Interventions: A 34yo P2 with prior surgical history of exploratory laparotomy, radical trachelectomy, sentinel lymph node mapping, pelvic lymphadenectomy for stage 1B1 cervical squamous cell cancer. She had been disease free for two years and she had erosion of her vaginal cerclage that had been placed at the time of her original surgery. She had two prior cesarean deliveries prior to her cervical cancer diagnosis and desired future fertility. She underwent a laparoscopic abdominal cerclage with cystoscopy and ureteral catheter placement.
Measurements and Main Results: Laparoscopic placement of abdominal cerclage was successful. Surgical techniques in navigating difficult dissections are reviewed in the video. In the absence of a cervicouterine junction, placement a 5mm Mersilene tape cerclage at the neo-cervical region was successful. There were no intra or post-operative complications. Patient had a good surgical recovery.
Conclusion: This video demonstrates challenges in placement of an abdominal cerclage following a radical trachelectomy due to distortion of anatomy and dense post-surgical adhesions. The video demonstrates that laparoscopic placement at the neo-cervical junction can be accomplished successfully and safely.

VIDEO SESSION 7 - LAPAROSCOPY & Reproductive Surgery (2:00 PM — 3:05 PM)

2:45 PM

Tips and Tricks for Laparoscopic Cesarean Scar Ectopic Twin Pregnancy Excision with Hemostatic Clips and Vascular Clamps

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Study Objective: To demonstrate tips and tricks of laparoscopic Cesarean scar ectopic twin pregnancy excision and to demonstrate use of hemostatic clips for uterine artery ligation and use of vascular clamps.
Design: Stepwise demonstration with narrated video footage.
Setting: Patient presents with Cesarean scar ectopic twin pregnancy, desiring surgical management. Patient placed in dorsal lithotomy position.
Patients or Participants: 36-yo G6P2212 presenting with vaginal spotting, diagnosed with Cesarean ectopic twin pregnancy on US.
Interventions: Laparoscopic excision of Cesarean scar pregnancy, with use of hemostatic clips for uterine artery ligation and bulldog clamps.
Measurements and Main Results: Patient underwent successful laparoscopic Cesarean scar ectopic twin pregnancy.
Conclusion: Dissection of retroperitoneal space and use of hemostatic clips and vascular clamps for Cesarean scar ectopic twin pregnancy can assist with hemostasis, and important to develop both the pararectal and paravesical space.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain (2:00 PM — 3:05 PM)

2:03 PM

Systematic Approach to Using Magnetic Resonance Imaging for the Patient with Deep Infiltrating Endometriosis

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Study Objective: To demonstrate systematically how to identify deep infiltrative endometriosis (DIE) on MRI and compare preoperative MRI imaging to intraoperative laparoscopic findings.
Design: Video demonstration of MRI images and surgical footage with narrated description.
Setting: Tertiary care academic teaching hospital.
Patients or Participants: Patients with deep infiltrative endometriosis in the anterior, middle, and posterior compartments.
Interventions: Preoperative MRI was completed for patients with suspected DIE due to reported symptoms or examination findings to confirm DIE presence and extension.
Measurements and Main Results: The diagnosis and evaluation of DIE is difficult with physical examination and laparoscopic exploration alone. MRI is easily reproducible and surveys the anterior, middle, and posterior compartments of the pelvis in single study even if lesions are obscured by adhesions. This video reviews how to systematically identify DIE on preoperative MRI and provides specific tips for each pelvic compartment. This video shows how appropriate preoperative planning allows for one step laparoscopy with subspecialty surgeons (e.g.: case 1 with General Surgery, case 3 with Colorectal Surgery).
Conclusion: Because successful treatment of DIE requires surgical excision, preoperative confirmation of DIE presence and extension is extremely important. Surgeons should understand how to evaluate MRI images for DIE and use these findings to guide preoperative surgical planning and intraoperative exploration.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain (2:00 PM — 3:05 PM)

2:09 PM

Rectosigmoidectomy with Complete Neurovascular Preservation for Deep Endometriosis

Souza C.A.,[1,*] Almeida R.M.,[2] Camargos E.,[3] Joaquim C.M.,[4] Trauczynski P.A.,[5] Menegatti J.E.,[6] Buchen G.,[7] Pazello R.T.[8]. [1]School of Minimally Invasive Surgery, Instituto Crispi _ Brazil, Lages SC, Brazil; [2]Faculty of Medicine - Department of Gynecology, University of Brasilia, Brasília, Brazil; [3]SES/SC, Maternidade Carmela Dutra, Florianópolis, Brazil; [4]School of Minimally Invasive Surgery _ Proctology, Crispi Institute_Brazil, Rio de Janeiro, Brazil; [5]General Surgery, ACSC _ Hospital Santa Isabel, Blumenau, Brazil; [6]Serviço de Cirurgia Laparoscópica, Ophéra, Lages, Brazil; [7]Proctology, ACSC _ Hospital Santa Isabel, Blumenau, Brazil; [8]Serviço de Cirurgia Laparoscopica, Ophéra, Curitiba Paraná, Brazil
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Study Objective: To demonstrate the surgical steps involved in nerve-sparing and mesorectal-sparing segmental rectosigmoid resection.
Design: Step-by-step video demonstration of the technique.
Setting: Tertiary University Hospital.
Patients or Participants: The surgery was performed on a 34-year-old woman with complaints of progressive dysmenorrhea, dyspareunia, chronic pelvic pain, and menstrual dyschezia associated with infertility. Imaging exams showed extensive retrocervical lesions and two confluent intestinal lesions measuring 70mm and 25mm starting at approximately 13cm from the anal verge, with involvement of 40% of its circumference.
Interventions: Believe that the preservation of vascularization promotes adequate healing, and the preservation of the motor innervation that runs through the mesentery promotes good peristalsis.
Initially correctly identifying the extent of the lesion and planning the resection. When the lesion is adhered to the rectovaginal septum or to the cervix, it must initially be isolated through the lateralization of the noble structures and centralization of the disease, keeping the hypogastric nerves, the splanchnic nerves, the inferior hypogastric plexus, and the middle rectal artery preserved.

Start separating the rectum or sigmoid from its mesentery by sectioning it near to the dorsal wall, using energy forceps, dissecting up to above and below the lesion. Traction and counter-traction will show the correct space for dissection. Closer to the wall, the lower the probability of bleeding and the greater the preservation of the vascular-nervous elements.
Rectosigmoidectomy performed with the section of the distal rectum, mini-laparotomy for exteriorization of the surgical piece, and placement of the circular stapler's anvil followed by stapled end-to-end colorectal anastomosis under laparoscopic view.
Measurements and Main Results: Surgical time of 120min, with minimal blood loss, favorable postoperative evolution, being discharged on the third day of hospitalization.
Conclusion: Although many centers already perform rectosigmoidectomy with complete neurovascular preservation, this technique has not yet been widely described. However, it is an effective, safe technique with greater damage control.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain
(2:00 PM — 3:05 PM)

2:15 PM

Surgical Management of Endometriosis of the Bladder and Ureter

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Study Objective: To demonstrate a step-by-step approach for the surgical management of urinary tract endometriosis using conventional laparoscopy for partial cystectomy and robotic-assisted laparoscopy for ureteroneocystostomy.
Design: Surgical video.
Setting: Academic tertiary referral center for endometriosis.
Patients or Participants: The first patient was a 38-year-old G3P3 with a history of hysterectomy presenting with dysuria had an MRI which revealed a T2 hypointense bladder nodule consistent with endometriosis. The second patient was a 25-year-old nulliparous woman with history of stage IV endometriosis with DIE into the bowel and both ureters causing subsequent hydronephrosis requiring bilateral ureteral stents and subsequently bilateral percutaneous nephrostomy tubes.
Interventions: In the first case, a cystoscopy was performed to confirm MRI findings of bladder lesion and to delineate borders and depth of invasion. Conventional laparoscopy was utilized to perform bilateral ureterolysis, bladder mobilization, partial cystectomy for complete excision of the lesion, and two-layered bladder closure. Use of indigo carmine assisted with ureteral orifice identification. In the second case, cystoscopy was performed with injection of ICG to assist with ureteral identification. After ureterolysis, distal ureteric obstruction due to extensive disease was confirmed on laparoscopy and ureteroscopy. Bilateral ureteroneocystostomy with placement of Double-J ureteral stents was performed using a robotic-assisted approach. Each patient had indwelling foley catheter for bladder decompression during recovery.
Measurements and Main Results: Both patients had an uneventful postoperative course. A postoperative retrograde cystogram confirmed adequate repair prior to removal of each foley catheter. Patient two had office stent removal 6 weeks postoperative.
Conclusion: Endometriosis is an increasingly common condition. It is important for gynecological surgeons to have the proper understanding of anatomy, surgical technique, and multidisciplinary care needed with urology for safe and complete excision of bladder and ureter endometriosis.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain
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Intraoperative Ultrasound Elastography Guided Rectal Shaving for Endometriosis

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Study Objective: Rectal surface endometriosis is more common in cases of cul-de-sac obstruction, and it is preferable in endometriosis surgery to remove as much of the deep endometriosis region as possible. The degree of rectal shaving may be confusing because the depth of the rectal superficial lesion cannot be assumed from the outside during surgery. For safe and appropriate resection, we attempted to confirm the location of the endometriosis lesion with intraoperative ultrasonography and elastography.
Design: Case report.
Setting: N/A.
Patients or Participants: A 23-years-old woman with dysmenorrhea diagnosed with left endometrioma and cul-de-sac obstruction by magnetic resonance imaging (MRI).
Interventions: Nerve-sparing endometriosis surgery including left ovarian cystectomy, cul-de-sac adhesiolysis, and deep endometriosis resection was planned. To evaluate the rectal surface endometriosis, a sterilized small ultrasound probe was inserted into the abdominal cavity through an abdominal trocar or small incision in the posterior vaginal fornix. Rectal surface fibrosis and the distance from the rectal muscularis were tried to be visualized with ultrasound elastography.
Measurements and Main Results: Intraoperative ultrasonography clearly indicated the safety distance from the rectal muscularis, and elastography showed hard fibrotic region on rectal surface with color visualization. There was no intra/post-operative complication. The pathological examination revealed the presence of endometriosis in the resected tissue. The visual analog scale (VAS) for dysmenorrhea was reduced from 70 to 10, and the VAS for dyspareunia was reduced from 50 to 0.
Conclusion: Intraoperative ultrasound elastography is considered to be a useful auxiliary means for safe rectal shaving by visualizing the fibrosis caused by endometriosis.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain
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Laparoscopic-Assisted Transanal Total Mesorectal Excision for a Patient with Bowel Endometriosis

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Study Objective: To explore a less-invasive surgical route for patient with bowel endometriosis to undergo segmental colorectal resection.
Design: A case report.
Setting: A university-based tertiary hospital.
Patients or Participants: A 34-year-old female was readmitted two years post-conservative surgery for endometriosis due to consistent digestive dysfunction symptoms. A 3-cm nodule within the muscle layer of lower rectal wall was identified by pelvic MRI.

Interventions: A laparoscopic-assisted transanal total mesorectal excion (TaTME) was performed (a 4-minute video clip included).
Measurements and Main Results: The patient was placed in a Trendelenburg position. For the laparoscopic step, the rectovaginal space was dissected. Lateral, posterior and anterior experitoneal rectal and left sigmoid dissection was performed adequately. Pay attention to protect the ureter and hypogastric nerve. An articulated endoscopic cutter was used to transect the distal rectal segment. For the trans-anal step, the rectal lumen was irrigated, the distal end of rectum was grasped out through anus. A safe margin down to the endometriotic lesion was chosen, 3-0 suture was placed followed by reloaded staplers to close the distal rectal lumen. TME was performed utilizing a "bottom up" approach. An avil was placed inside of proximal sigmoid. Rectosigmoid anastomosis completed successfully by using a circular stapler. No protective ileostomy was adopted. The surgery was uncomplicated with minimal blood loss. Significant improvement of bowel symptoms was reported within the first month postoperatively. During 3-year follow-up period no recurrence of endometriosis or digestive dysfunction symptoms was observed.
Conclusion: As a novel technique, laparoscopic-assisted TaTME shows advantage over laparoscopic surgery, such as better visualization of the distal resection margin while avoiding a bigger abdominal scar. Young women with colorectal endometriosis can benefit for more radical but less invasive surgical outcome. An experienced multidisciplinary team making comprehensive evaluation and discussion before surgery will ensure this technically highly demanding operation feasible and safe.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain
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Cancer Arising from Endometriosis

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Study Objective: Presentation of unique case of postmenopausal patient with previous total hysterectomy, salpingo-oophorectomy and excision of endometriosis who developed cancer originating from endometriosis.
Design: Case report
Setting: Endometriosis Referral center
Patients or Participants: This video presents a 78-year-old G1P1 female with a history of endometriosis who presented with post-coital vaginal bleeding. She had a history of a total abdominal hysterectomy at the age of 46 due to pelvic pain, and later underwent bilateral salpingo-oophorectomy and excision of endometriosis at the age of 56 due to continued pain. She was on hormonal supplementation with transdermal estrogen. Preoperative examination and imaging revealed a 5 cm friable mass at the vaginal cuff and a smaller pelvic mass in the left pelvic sidewall.
Interventions: The patient underwent multi puncture video laparoscopy. The left pelvic sidewall mass near the left ureter was carefully resected and found to be endometriosis on final pathology. The vaginal cuff mass was also resected.
Measurements and Main Results: Pathology reported endometriosis juxtaposed with well-differentiated endometrioid adenocarcinoma. Immunohistochemical tumor staining further confirmed gynecological origin.
Conclusion: The relationship between endometriosis and ovarian cancer has been established, although not fully elucidated. Therefore, among patients with a history of endometriosis, continued regular gynecologic follow up is recommended not only for recurrence but also for possible malignant transformation.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain
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Application of AAGL Endometriosis Classification - An Innovative Tool with Additional Contributions

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Study Objective: To demonstrate application of the innovative newly developed AAGL 2021 endometriosis anatomy-based surgical complexity scoring system and add further contributions.
Design: An overall step-by-step application of the new surgical scoring system developed in 2021 with emphasis on pragmatic utilization of the App through two case reports.
Setting: A university hospital based on Detroit, Michigan; Wayne State University/ Detroit Medical Center
Patients or Participants: A series of two case reports of stage 4 endometriosis based on the Scoring System, including one with endometriosis on the diaphragm. Each patient case demonstrates variety of symptoms and challenges - including pelvic pain and abdominal pain.
Interventions: Application and utilization of the AAGL 2021 Endometriosis Classification.
Measurements and Main Results: Successful identification of intra-operative endometriosis with staging on the AAGL 2021 Endometriosis Classification Scoring System.
Conclusion: Application of AAGL 2021 Endometriosis Classification remains to be very effective in surgical complexity scoring. The classification offers an alternative point system in quantifying endometriotic lesions. This point system allows for a way to numerically scale the disease from a surgical complexity standpoint. Due to its intraoperative utility, the AAGL Endometriosis Classification correlates to pain and avoids limitations that noninvasive imaging may experience and focuses predominantly on pain symptoms. Additional contributions may include addition of extra-pelvic endometriosis, such as the diaphragm. The overall goal is to improve care of endometriosis patients, from addressing chronic pelvic pain, abdominal pain, and fertility complications, with an objective intraoperative staging system.

VIDEO SESSION 8 - ENDOMETRIOSIS & Basic Science & Pelvic Pain
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Superficial Endometriosis: The Ultrasound Diagnosis

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Study Objective: Review the background, clinical presentation, and options for diagnosing superficial endometriosis: 1) Illustrate the steps to visualize SE with ultrasound and the relevant sonographic features and 2) and discuss the clinical importance of a non-operative diagnosis as well as the limitations of ultrasound in this context.
Design: Educational video outlining the potential of ultrasound in aiding in the diagnosis of superficial endometriosis.

Setting: Outpatient ultrasound.
Patients or Participants: Pelvic pain patients in a tertiary-care clinic.
Interventions: Ambulatory advanced ultrasound to identify superficial endometriosis.
Measurements and Main Results: N/A.
Conclusion: Non-operative diagnosis of superficial endometriosis can be helpful for the patient and the gynecologist.
The outpatient diagnosis has multiple advantages over surgical diagnosis, including lower medical costs, decreased morbidity for patients and a shorter interval between clinical suspicion and diagnosis.
Additionally, ultrasound diagnosis provides important information for the surgeon, improving the accuracy of operative booking and allowing for triaging to appropriate surgeons, potentially decreasing the rate of incomplete and abandoned endometriosis surgeries.
The patient prerequisites for ultrasound include symptoms consistent with possible endometriosis or unexplained infertility, Informed consent and being able to tolerate pelvic ultrasound exams.
The imaging prerequisites include: a non-obliterated posterior curl-de-sac, free fluid in the pelvis and no deep or ovarian endometriosis.

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Ureterolysis in Pelvic Peritonectomy

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Study Objective: To demonstrate initiation with ureterolysis during complex pelvic peritonectomy as a method for early identification and prevention of injury to the ureter.
Design: Outpatient laparoscopic surgery.
Setting: Academic medical hospital.
Patients or Participants: 31-year-old female with tethering of bilateral side walls and a 35-year-old with endometriosis on bilateral sidewalls, presenting for surgical management for their pelvic pain.
Interventions: Laparoscopic pelvic peritonectomy.
Measurements and Main Results: Improved symptoms postoperatively.
Conclusion: We demonstrate initiation with ureterolysis during pelvic peritonectomy as a method for early identification of and prevention of injury to the ureter.

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How to Remove Endometriosis? Removing All Peritoneum from the Pelvic Compartment: En Bloc Peritonectomy, a Demonstration of the Technique

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Study Objective: Demonstrate the en bloc pelvic peritonectomy technique for the treatment of all grades of endometriosis.
Design: Edited video of a standard procedure for complete excision of endometriosis.
Setting: Three-port laparoscopic surgery.
Patients or Participants: 28-year-old patient with 3 years of infertility, pelvic pain, and dyspareunia.
Interventions: A systematized surgical procedure by en bloc peritonectomy of the posterior and anterior compartment of the pelvis, for the most complete removal of endometriosis possible.
Measurements and Main Results: The video demonstrates that the technique is feasible and reproducible for surgeons who have a deep understanding of the anatomy and layers of the pelvis (fasciae).
Conclusion: En bloc peritonectomy of the pelvis appears to be an effective and safe way to completely remove endometriosis at all stages of the disease, both as an isolated technique in mild to moderate cases, as well as a step in the technique of removing intestinal disease or deeper infiltration in the lateral pelvic wall. With this technique the ideal removal of endometriosis is possible, with complete preservation of the anatomy and function of the pelvic organs.

VIDEO SESSION 9 - LAPAROSCOPY & Basic Science & Endometriosis
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Laparoscopic Suturing of the Vaginal Cuff: A Surgical Education Module for Obstetrics and Gynecology Residents

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Study Objective: We aim to review the assembly of a laparoscopic box trainer with a validated vaginal cuff model and to highlight principles for efficient two-handed laparoscopic vaginal cuff closure using three unique port configurations (ipsilateral, contralateral, and midline). This video was created as part of a surgical education module for Obstetrics and Gynecology residents.
Design: Surgical education video.
Setting: Laparoscopic box trainer with a validated vaginal cuff model.
Patients or Participants: Education module for Ob/Gyn resident physicians.
Interventions: The validated vaginal cuff model incorporates multiple layers to represent the vaginal epithelium and vaginal wall. We demonstrate laparoscopic suturing using a running technique from ipsilateral, contralateral, and suprapubic port configurations. A braided suture with a knot at the end simulates a unidirectional barbed suture that does not require knot tying. Critical steps needed for proper cuff closure are highlighted.
Measurements and Main Results: In this video, we highlight a reproducible setup of a validated vaginal cuff model within a laparoscopic box trainer. We demonstrate correct needle loading for enhanced accuracy in needle entry and exit. Efficient techniques to achieve adequate exposure, incorporation of vaginal epithelium, appropriate suture tension, and optimized ergonomics are also reviewed.
Conclusion: We present a surgical education video to teach safe and efficient laparoscopic suturing techniques to Ob/Gyn resident physicians using multiple two-handed port configurations. Key surgical principles include proper needle loading, needle entry, exposure, and optimized ergonomics.

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Laparoscopic Nerve-Sparing Radical Parametrectomy for Deep Lateral Parametrial Endometriosis

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Study Objective: To demonstrate the anatomical and technical highlights of nerve-sparing radical parametrectomy for deep lateral parametrial endometriosis (LPE).

Design: Stepwise demonstration of this method with narrated video footage.
Setting: An urban general hospital. LPE may involves ureter, internal iliac vessels, inferior hypogastric plexus, pelvic splanchnic nerves, or sometimes sacral nerve roots. Although LPE is not overly rare, isolation of the autonomic nerves from LPE cannot always be guaranteed. In cases where endometriosis lesions are embedded in the deep parametrium, nerve-sparing techniques are no longer considered feasible, except in cases with unilateral involvement. However, even one-sided radical parametrectomy may actually lead to pelvic organ dysfunctions, which seriously affects quality of life.
Patients or Participants: A 38-year-old woman, para 1, presented with a five-year history of severe chronic pelvic and gluteal pain, all of which were resistant to pharmacotherapy. MRI revealed right ovarian endometrioma with LPE reaching the lateral pelvic wall.
Interventions: Laparoscopic surgery.
Measurements and Main Results: Main outcome measures were releasing from severe pain, avoidance of postoperative morbidity and preservation of fertility. The procedure was performed using 8 steps, as follows: Step 1, adhesiolysis and adnexal surgery; Step 2, complete ureterolysis; Step 3, identification and dissection of the hypogastric nerve and inferior hypogastric plexus with development of the pararectal space; Step 4, dissection of internal iliac vessels; Step 5, identification and dissection of sacral roots S2-S4 and pelvic splanchnic nerves; Step 6, complete removal of LPE; Step 7, hemostasis and assessment of tissue perfusion using ICG; and Step 8, application of barrier agents to prevent adhesion. The patient developed no perioperative complications, including postoperative bladder, rectal or sexual dysfunctions. Pain was completely resolved after surgery.
Conclusion: Laparoscopic nerve-sparing radical parametrectomy is technically safe and feasible for selected patients with LPE. Suitably tailored treatment should be provided for each individual, based on both the latest scientific evidence and life planning for the patient.

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Laser Assisted Appendectomy

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Study Objective: Appendiceal endometriosis is commonly encountered by gynecologists during laparoscopy for endometriosis or chronic pelvic pain. This video reviews appendiceal endometriosis, highlights important anatomical landmarks for appendectomy and demonstrates a novel technique for laparoscopic appendectomy using a CO2 Laser at the time of surgical management of endometriosis.
Design: This video uses still images, video footage and narration to review appendiceal endometriosis and laser-assisted appendectomy. The laser appendectomy approach is reviewed in four steps, addressing preoperative and intraoperative considerations.
Setting: Patient positioned in Trendelenburg position with left lateral tilt.
Patients or Participants: Patients undergoing gynecologic laser laparoscopic surgery for endometriosis or chronic pelvic pain.
Interventions: Laser assisted laparoscopic appendectomy.
Measurements and Main Results: When performing a laparoscopy for endometriosis or chronic pelvic pain assess the appendix for signs of endometriosis. The four key steps when planning a laser appendectomy are (1) patient preparation, (2) isolate the appendix, (3) secure blood supply, and (4) remove appendix.
Conclusion: Appendiceal endometriosis is common and pre-operative diagnosis is challenging. Appendectomy should be considered at the time of gynecologic surgery for endometriosis or chronic pelvic pain. This video can be used as a reference for gynecologists when performing appendectomy at the time of hysterectomy or laparoscopy for endometriosis or chronic pelvic pain.

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Left in the Dark: Laparoscopic Cuff Closure for Left-Handed Learners

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Study Objective: This video seeks to educate both learners and educators on techniques for left-handed laparoscopic vaginal cuff closure through three different port configurations. It also aims to highlight disparities between right and left-handed trainees in surgical training and mentorship.
Design: Narrated surgical video.
Setting: Two teaching hospitals (academic and community based).
Patients or Participants: Three patients undergoing total laparoscopic hysterectomy for various indications.
Interventions: Left-handed laparoscopic vaginal cuff closure through three different port configurations.
Measurements and Main Results: We illustrate several key points for educators and left-handed learners including:
-Port placement options for the left-handed surgeon
-Advantages and disadvantages of various port configurations
-Recommended direction of suturing based on port placement
-Techniques for assisting a left-handed surgeon
-Direct comparison between right and left-handed suturing, demonstrating that they are mirror images of one another
Conclusion: Left-handed laparoscopic vaginal cuff closure can be effectively accomplished through any port configuration. Educators and left-handed learners should be familiar with port placement options, techniques for assisting a left-handed surgeon, and direction of suturing for left-handed cuff closure to optimize surgical education and minimize patient time under anesthesia.

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Laparoscopic Inguinal Gonadectomy in a Case of Partial Androgen Insensitivity Syndrome and Bilateral Gonads in Inguinal Canal

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Study Objective: N/A.
Design: N/A.

Setting: Patient positioned in low lithotomy with Trendelenburg position.
Patients or Participants: One case.
Interventions: Laparoscopic inguinal gonadectomy with bilateral deep inguinal ring repair.
Measurements and Main Results: A thorough history taking, clinical examination with special focus on the development of secondary sexual characteristics is of utmost importance to guide us on further line of investigations and treatment. Imaging, Karyotype and hormonal profile added to the clinical manifestations give a clear idea of the cause of primary amenorrhea and diagnose sex development disorder. Laparoscopic gonadectomy to be performed in AIS preferably after puberty after the development of secondary sexual characteristics but should not be delayed much as the risk of malignancy in abnormally located gonads is 5-10%.
Conclusion: AIS is an important cause of primary amenorrhea. Gonadectomy in AIS to be done after puberty can be delayed in CAIS, preferably by laparoscopic approach and complete removal of gonads to be ensured, a mesh can be used if the defect in inguinal canal is large. Estrogen replacement therapy should be given after surgery

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Posterior Compartment Peritonectomy: Technique Demonstration

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Study Objective: Demonstrate the technique of in block peritonectomy excision of the posterior compartment of the pelvis for endometriosis treatment.
Design: Edited video of a surgery for endometriosis by the peritonectomy excision technique.
Setting: 3-port laparoscopy surgery.
Patients or Participants: Edited video of a usual case of deep infiltrating endometriosis in a 30-year-old patient.
Interventions: Deep infiltrative endometriosis (Grade IV by the AAGL classification), operated by the peritonectomy technique, with excision of the entire peritoneum of the posterior compartment and the connective tissue below, with shaving of a nodule from the rectum.
Measurements and Main Results: The procedure demonstrated in this edited video demonstrates a complete and satisfactory removal of endometriosis, with complete preservation of the ureters, blood vessels, hypogastric nerves, rectum, vagina, cervix and fasciae (Hypogastric and pre-sacral fasciae, more deeply). With complete release of the deep entrapment of somatic nerves. The patient in the exposed case had complete resolution of pain symptoms and spontaneous pregnancy 6 months after.
Conclusion: Endometriosis is a disease of superficial and deep infiltration of endometriotic tissue that spreads diffusely in the connective tissue of the pelvis. The ideal way of surgical removal of the disease is the in block resection of the entire affected compartment, a technique called by the authors as excision by peritonectomy. As shown in this video, it is a safe, effective and reproducible technique, only dependent on a deep knowledge of anatomy and the deep layers of the pelvis by the surgeon.

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TRANS-Peritoneal PARA-Aortic Node Dissection Two Different Technique

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Study Objective: Trans-peritoneal para-aortic node dissection two different approach.
Design: Prospective analysis.
Setting: Patient underwent 3D laparoscopy, all procedure done by experienced and qualified team.
Patients or Participants: CA Endometrium (> 50% invasion), CA cervix patients.
Interventions: Laparoscopic transperitoneal para-aortic lymph node dissection.
Measurements and Main Results: all patient reviewed at monthly interval followed by 3 monthly interval with USG (A+P). PET scan done at 6 months did not reveal any recurrence. median follow up 18 months. all patients are diseased free.
Conclusion: Two different approaches for transperitoneal para-aortic dissection possible laparoscopically. since para-aortic dissection is part of pelvic dissection in radical hysterectomy so without changing position of patient and surgeon (surgeon standing on right side of patient) we can achieve complete nodal dissection.

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Nerve-Sparing Laparoscopic Segmental Bowel Resection for Deep Endometriosis: The Negrar Method

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Study Objective: to demonstrate a nerve-sparing technique during laparoscopic segmental bowel resection for deep endometriosis.
Design: A step-by-step demonstration of surgical procedure of laparoscopic segmental bowel resection.
Setting: In several cases, segmental bowel resection may be necessary to achieve complete removal of the disease and significantly improve the

quality of life. Laparoscopic complete excision of deep-infiltrating endometriosis can seriously affect bladder, rectal, and sexual function. The goal of the nerve-sparing approach is to better identify the visceral neural fibers and surgical landmarks.
Patients or Participants: patients who underwent nerve-sparing laparoscopic complete excision of endometriosis with segmental bowel resection (''The Negrar Method'').
Interventions: Our surgical nerve-sparing bowel resection technique proceeds in 5 steps:
Step 1 Development of the medial pararectal space (Okabayashi's space) and development of the lateral pararectal space (Latzko's space) and isolation of the ureteral course
Step 2 Opening of the presacral space, development of avascular spaces, and identification and preservation of pelvic sympathetic fibers of the inferior mesenteric plexus, superior hypogastric plexus, upper hypogastric nerves.
Step 3 Development of the rectovaginal space
Step 4 The previously skeletonized inferior mesenteric vessels are transected
Step 5 Rectal resection and colorectal anastomosis
Measurements and Main Results: The Nerve-sparing technique appears to be feasible and offers good results in terms of reduced bladder morbidity and apparently higher satisfaction than the classical technique.
Conclusion: This kind of surgery requires uncommon surgical skills and anatomical knowledge; we believe that it should be performed only in selected reference centers.

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Urine Double Trouble: A Case of Voiding Dysfunction Following Gynecologic Surgery

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Study Objective: We present a surgical video that demonstrates postoperative voiding dysfunction following laparoscopic excision of deeply infiltrative endometriosis with rectal involvement. This video highlights the relevant anatomy and physiology involved in postoperative voiding dysfunction.
Design: Surgical Educational Video.
Setting: Tertiary Referral Center at an Academic Residency Program.
Patients or Participants: 37-yo G1P1 with symptomatic deep endometriosis, presenting with a 4cm deeply infiltrative endometriotic rectal nodule.
Interventions: Laparoscopic excision of deeply infiltrative endometriosis and excision of rectal nodule with low anterior bowel resection.
Measurements and Main Results: Excision of deep infiltrating endometriosis within the pararectal fossae and parametria as well as resection of 4 cm rectal endometriotic lesion. Postoperative urinary retention led to bladder overdistension injury and subsequent chronic voiding dysfunction.
Conclusion: Postoperative voiding dysfunction and bladder overdistension is a common postoperative injury that can have long-term consequences. Gynecologic patients may present with multiple risk factors. Understanding the pathophysiology, surgical anatomy, signs and symptoms, and immediate treatment recommendations is important for both the generalist and specialist gynecologist.

VIDEO SESSION 10 - LAPAROSCOPY & Oncology
(3:15 PM — 4:20 PM)

3:36 PM

Management of Vaginal Vault Dehiscence after Laparoscopic Hysterectomy

Benoit Dube S.,[1,] Nguyen D.,[2] Zakhari A.,[3] Mansour F.W.,[2] Papillon Smith J.B.,[1] Krishnamurthy S.[2]. [1]Gynecology, McGill, Montreal, QC, Canada; [2]Department of Obstetrics and Gynecology, McGill University Health Center, Montreal, QC, Canada; [3]OBSTETRICS AND GYNECOLOGY, McGill University Health Center (MUHC): Royal Victoria Hospital - Glen Site, Montreal, QC, Canada*
*Corresponding author.

Study Objective: To review the epidemiology, diagnosis and management of vaginal vault dehiscence, and to illustrate a 5-step surgical approach to laparoscopic vault repair.
Design: Surgical footage was obtained from an emergency case after appropriate consent from the patient.
Setting: A tertiary care centre.
Patients or Participants: A 34-year-old female who presented 8 weeks after a total laparoscopic hysterectomy with a complete vault dehiscence.
Interventions: Vaginal vault dehiscence complicates 0.64% to 1.35% of laparoscopic hysterectomies, and can be categorized as complete cuff dehiscence, partial cuff dehiscence or partial thickness. Protective factors include the use of barbed sutures as compared to non-barbed sutures and laparoscopic closure as compared as compared to vaginal closure. Smoking and low BMI have been associated with an increased risk of dehiscence.
Measurements and Main Results: The surgical approach to a laparoscopic repair of cuff dehiscence can be standardized in 5 reproducible steps: abdominal survey, bladder and/or rectal dissection, vault debridement, vault closure and cystoscopy.
Conclusion: Vaginal vault dehiscence being uncommon, residents may graduate without being exposed to a case. This video represents an educational tool that covers the clinical and surgical approaches to the reproducible management of vaginal vault dehiscence.

VIDEO SESSION 10 - LAPAROSCOPY & Oncology
(3:15 PM — 4:20 PM)

3:42 PM

Robotic-Assisted vs Conventional Laparoscopic Transabdominal Cerclage Placement

Zeng K.W.,[1,] Smith G.L.,[2] Galhotra S.,[1] Norton T.,[3] Mahnert N.D.,[4] Mourad J.[5]. [1]University of Arizona College of Medicine - Phoenix, Phoenix, AZ; [2]Obstetrics & Gynecology, University of Arizona College of Medicine Phoenix, Phoenix, AZ; [3]Ob/Gyn, Banner University Medical Center Phoenix, Phoenix, AZ; [4]Minimally Invasive Gynecologic Surgery, Banner University Medical Center Phoenix, Phoenix, AZ; [5]Minimally Invasive Gynecologic Surgery, Banner University Medical Center - Phoenix, Phoenix, AZ*
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Study Objective: To compare and contrast robotic-assisted versus laparoscopic transabdominal cerclage placement.
Design: Video.

Setting: Tertiary academic medical center with two minimally-invasive gynecologists.
Patients or Participants: Two patients at approximately 13 weeks gestation with cervical insufficiency.
Interventions: Transabdominal cerclage.
Measurements and Main Results: It is important to know useful tools in placement of minimally invasive transabdominal cerclage. These include the 30-degree laparoscope, sacrocolpopexy cup, uterine manipulators, and laparoscopic paddle retractor. Consider use of a suprapubic port for laparoscopic cerclage placement for more ideal angle for dissection of the avascular tunnel and passage of the Mersilene tape. Tying the Mersilene tape anteriorly laparoscopically can be helpful so that no additional port is used for manipulation of the uterus.
Conclusion: Transabdominal cerclage may be placed safely in a minimally invasive fashion both with robotic-assisted and conventional laparoscopic approach.

VIDEO SESSION 10 - LAPAROSCOPY & Oncology (3:15 PM — 4:20 PM)

3:48 PM

Fertility-Sparing Cornual Wedge Resection for Management of GTN

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*Corresponding author.

Study Objective: To describe the case of a 30-year-old female with cornual ectopic pregnancy treated with methotrexate with normalization of beta-hCG who subsequently developed GTN at the prior ectopic site. The patient desired future fertility and was treated with actinomycin-D with optimal response and negative beta-hCG for four months, yet the mass was persistent. The patient desired future fertility, and with guidance from gynecologic oncology and reproductive endocrinology, decision was made to proceed with a conservative operation. We demonstrate the technique of cornual wedge resection for treatment of GTN.
Design: Case-report
Setting: The patient was placed in dorsal lithotomy position with lower extremities in Allen-type stirrups and was placed in steep Trendelenburg position.
Patients or Participants: N/A - single patient, case report
Interventions: Actinomycin-D administered until beta-hCG negative for 4 months, mass noted to be persistent at uterine cornu, laparoscopic cornual wedge resection for removal of GTN given patient's desire to maintain future fertility
Measurements and Main Results: Pathology of the mass demonstrated necrotic chorionic villi and placental remnants, negative for malignancy. Follow up transvaginal ultrasound 3 months postoperatively demonstrated no residual mass and no uterine defect. Checking beta-hCG monthly until 12 months with negative tests, then will attempt to conceive with support from reproductive endocrinology and planned cesarean delivery similar to the management of patient's post-myomectomy.
Conclusion: With subspecialty support from gynecologic oncology and reproductive endocrinology, cornual wedge resection should be considered a viable option for treatment of GTN in patients who desire future fertility.

VIDEO SESSION 10 - LAPAROSCOPY & Oncology (3:15 PM — 4:20 PM)

3:54 PM

Surgical Anatomy of Nerve as Seen in Nerve Sparing Radical Hysterectomy for Endometrial CA (>50% INVASION)

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*Corresponding author.

Study Objective: surgical anatomy of nerves in nerve sparing radical hysterectomy in endometrial CA (>50% invasion).
Design: Prospective analysis.
Setting: Patient underwent 3D laparoscopy all the procedure done by experienced and qualified team/
Patients or Participants: CA endometrium with >50 % invasion.
Interventions: Nerve sparing laparoscopy done.
Measurements and Main Results: in all patients reviewed at monthly interval followed by 3 monthly interval with USG (A+P) PET scan done at the end of 6 month did not reveal any recurrence. median follow-up 18 months. faster recovery of bladder function, good anorectal function, better sexual arousal and response.
Conclusion: By knowing the better knowledge about all pelvic nerves we can achieve a laparoscopic nerve sparing radical hysterectomy and give better life to patient. as a surgeon knowledge of predictive surgical anatomy of nerve is must.

VIDEO SESSION 10 - LAPAROSCOPY & Oncology (3:15 PM — 4:20 PM)

4:00 PM

Second Look Laparoscopy Surgery Boon for Fully Treated Patients of CA Ovary but Raising CA 125 Levels and Localised Tumors

Puntambekar S.P.,[1,] Patil M.,[2] Puntambekar S.,[3] Puntambekar A.[4]. [1]Oncosurgeon, Managing Director and Consultant Oncosurgeon, Galaxy CARE Multispeciality Hospital, Pune, India; [2]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India; [3]Galaxy CARE Multispeciality Hospital, Pune, India; [4]Galaxy CARE Laparoscopy Institute Pvt. Ltd, PUNE, India*
*Corresponding author.

Study Objective: To define role of 2nd look laparoscopy in fully treated in Ca ovary patient with persistent raised Ca 125 levels.
Design: Prospective analysis.
Setting: Patient undervent 3D laparoscopy, all procedures done by experienced and qualified team.
Patients or Participants: Fully treated Ca ovary patient with raised Ca 125 levels.
Interventions: 2nd look laparoscopy with excision of Case1- Retroperitoneal solid cystic mass near left iliac vessels. Case 2- Aortocaval (para-aortic) node. Case 3- solid cystic recurrent mass from remnant of left ovary. Case 4- Peritoneal deposit from anterior abdominal wall and omental nodule.
Measurements and Main Results: all the patient reviewed at monthly interval followed by 3 monthly interval with Ca 125 level & 3 monthly USG (A+P), none of the patient needed further chemotherapy as Ca 125 continues to be normal and USG (A+P) WNL, PET scan done at the end of

6 months did not reveal any evidence of recurrence. Median follow-up 18 months. All patients are diseased free.
Conclusion: 2nd look laparoscopy was always an armamentarium for gynecologist but using laparoscopy 2nd look surgery become beneficial for specific group of patients with persistent raised CA125 level & no major recurrence on imaging.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
(11:30 AM — 12:35 PM)

11:33 AM

Anatomical and Surgical Considerations for Ileocolic Endometriosis

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Study Objective: We aim to review the incidence, location, and management of bowel endometriosis, as well as demonstrate anatomical considerations for surgical resection of ileocolic lesions.
Design: This video briefly reviews the background of bowel endometriosis and indications for surgical excision. We present a case of a patient diagnosed with a symptomatic ileocolic endometriosis lesion and review the preoperative imaging. We demonstrate the steps of a medial-to-lateral surgical approach for ileocolic resection and highlight the relevant surgical anatomy.
Setting: This procedure was performed at a large academic institution with a multidisciplinary team of minimally invasive gynecologists and colorectal surgeons.
Patients or Participants: The case presented is a 44-year-old female with a known history of stage IV endometriosis. She presented with acute abdominal pain, nausea and vomiting associated with her menses, and was found to have a small bowel obstruction from a 3cm lesion thought to be an endometrioma. She failed conservative management and was thoroughly counseled about the need for surgical intervention. Pelvic MRI was performed for preoperative planning.
Interventions: Laparoscopic ileocolic resection is performed utilizing a medial-to-lateral approach for excision of a symptomatic 3cm ileocecal endometrioma.
Measurements and Main Results: Successful excision of the endometrioma with a side-to-side ileocolic anastomosis was performed with resolution of the patient's symptoms.
Conclusion: The bowel is the most common extragenital site for endometriosis to occur, with the highest rate of lesions located in the rectosigmoid colon. Lesions can be either superficial or deeply infiltrative and can lead to a range of symptoms. A serious sequela of bowel endometriosis includes bowel obstruction requiring surgical intervention. We present a case of a 44-year-old female with acute bowel obstruction from a 3cm ileocecal endometrioma and demonstrate a medial-to-lateral surgical technique for ileocolic resection while emphasizing the relevant anatomical structures.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
(11:30 AM — 12:35 PM)

11:39 AM

ICG Enema to Make Rectal Shaving Easier and Safer

Sun C.H.. *OB/GYN, Lucina Women & Children Hospital, Kaohsiung City, Taiwan*
*Corresponding author.

Study Objective: To use ICG enema to improve the surgical quality during rectal shaving.
Design: Surgical video.
Setting: Local GYN MIS hospital, single surgeon.
Patients or Participants: Patients with solitary rectal DIE nodule.
Interventions: After complete adhesiolysis and excision of all other pelvic endometriosis lesions except the rectal nodule, 12.5 mg ICG was diluted in 60 cc normal saline. The diluted ICG solution was injected into rectal lumen through anus and was retained in rectum (ICG enema) during the whole rectal shaving procedure.
Measurements and Main Results: After ICG enema, we started the rectal shaving procedure, carefully mapped the lesion margin, cut into rectal muscular layer with monopolar scissors under pure cutting mode. The submucosa layer can be easily recognized by the ICG green color. As long as we identified the green submucosa layer, we can easily stay precisely between the muscle layer and submucosa layer, keep the green submucosa and mucosa layer intact, with minimal risk of enterotomy. After rectal shaving, the muscular defect of the rectal wall can also be clearly identified by the exposed green submucosa layer. Rectal wall repair can then be confidently performed, transversely re-approximating the seromuscular layer, embedding all the green submucosa layer.
Conclusion: By ICG enema, staining the mucosa and submucosa layer with green ICG color, we can easily identify the submucosa layer during the rectal shaving procedure. The risk of enterotomy, and incomplete rectal wall repair after shaving can both be minimized.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
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11:45 AM

Identification of Ureters with ICG Dye in Endometriosis and Benign Gynaecology

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*Corresponding author.

Study Objective: The purpose of this video is to demonstrate the use of ICG dye to identify and facilitate dissection of ureters in endometriosis and other benign cases.
Design: Technical video demonstrating the laparoscopic identification of ureters with ICG dye (Canadian Task Force classification level III).
Setting: Minimally Invasive Surgery Gynaecology Unit, Liverpool Hospital.
Patients or Participants: 3 cases demonstrated.
Interventions: Indocyanine green (ICG) is a fluorescent dye that, when activated with a specific wavelength of near-infrared (NIR) light, permits the exact measurement of tissue vascularization in real time during surgery. The ICG irreversibly stains the lining of the ureter by binding to the proteins on the urothelial layer. The infrared signals are then captured by the console and electronically converts into green color which then facilitates easy identification of bilateral ureters thus reducing the risk of injury. This video presents one of its uses in benign gynaecology.
Measurements and Main Results: Thus, this is a technology allowing to intraoperatively enhance the visualization of the ureters, potentially reducing the risks and/or favoring an immediate identification of injuries, and will have a relevant clinical impact
Conclusion: We discovered that ICG is a useful method for identifying ureters in challenging situations, particularly those with retroperitoneal fibrosis.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
(11:30 AM — 12:35 PM)

11:51 AM

Laparoscopic Endometrioma Excision Using Hydrodissection with Dilute Vasopressin

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Study Objective: To demonstrate the surgical technique of hydrodissection with dilute vasopressin for laparoscopic endometrioma excision.
Design: A narrated stepwise video demonstration of surgical technique.
Setting: Academic Hospital, demonstrated by an experienced surgeon trained in minimally invasive gynecologic surgery.
Patients or Participants: Two patients with infertility and stage 4 endometriosis. Both with large bilateral endometriomas. Desiring to preserve and improve fertility.
Interventions: We perform laparoscopic excision of large endometriomas using hydrodissection with dilute vasopressin (20 units in 100-200cc). Vasopressin is injected with a laparoscopic injection needle into the potential space between the endometrioma wall and ovarian capsule. This technique helps to develop the correct surgical plane while decreasing blood loss and tissue trauma. The ovarian capsule is dissected off the cyst using blunt dissection and traction-countertraction techniques, with a goal of minimal use of electrocautery and maximum preservation of healthy ovarian follicles.
Measurements and Main Results: Both cases resulted in complete excision of bilateral endometriomas with minimal blood loss and exceptional hemostasis at the conclusion of the procedure.
Conclusion: Hydrodissection with dilute vasopressin is a simple and effective method for decreasing blood loss during laparoscopic excision of endometriomas. This method helps decrease use of electrocautery and potential thermal spread to surrounding viable ovarian follicles.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
(11:30 AM — 12:35 PM)

11:57 AM

A Whole New "Endo-World" for a FMIGS: How to Start?

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Study Objective: to demonstrate a guide for a FMIGS (Fellow in Minimally Invasive Gynecological Surgery) who is starting in the endometriosis surgery, focusing on the nerve-sparing technique and the anatomical landmarks for excision of the endometriosis on the uterosacral ligament.
Design: step-by-step of surgical technique for uterosacral ligament exeresis through narrated surgical video, pointing out the anatomical landmarks
Setting: in semi-gynecological position, 10 mm port was placed on the umbilicus and 3 auxiliary ports were placed following the triangulation technique.
Patients or Participants: A 30-years old woman with chronic pelvic pain and dyspareunia with left uterosacral thickening on physical examination with suspicion of deep infiltrating endometriosis.
Interventions: A minimally invasive approach was done following the steps below:
- Step 0: understand the disease with abdominal inspection
- Step 1: exposure with temporary ovariopexy
- Step 2: identification of anatomical landmarks: ureter and hypogastric nerve
- Step 3: opening of the peritoneum, medially to the ureter
- Step 4: exeresis of the uterosacral ligament superficially
- Step 5: development the Okabayashi space
- Step 6: exeresis of the uterosacral ligament deeply
- Step 7: re-check the integrity of the anatomical landmarks - hypogastric nerves, ureter, uterine vessels, rectosigmoid

Measurements and Main Results: this video demonstrated the nerve-sparing technique with preservation of important anatomical landmarks for this type of surgery: hypogastric nerve, ureter, and uterine vessels.
Conclusion: Most of the endometriosis surgery complications are related with inadvertent lesion of the nerves. In order to avoid that, some authors described the nerve-sparing technique for deep infiltrating endometriosis. This is a surgery expected for a FMIGS to understand and perform after their training. Therefore, for a successful and safe surgery it is essential for the FMIGS to know the anatomical landmarks and the surgical technique

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
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12:03 PM

Laparoscopic Resection of Large Abdominal Wall Endometriosis

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*Corresponding author.

Study Objective: To demonstrate surgical techniques for resection of large fascial and rectus muscle endometriosis implants.
Design: N/A.
Setting: The patient underwent surgery at a tertiary care center. She was placed in dorsal lithotomy position in steep Trendelenburg. Insufflation was carried out to 15 mmHg. A primary 10mm subxiphoid port was used for the camera and three additional 5mm assist ports were placed.
Patients or Participants: The patient is a 44-yo G1P1 with a history of a cesarean delivery, laparoscopic excision of endometriosis, and subsequent hysterectomy who presented with cyclic abdominal wall pain consistent with abdominal wall endometriosis diagnosed on MRI.
Interventions: Laparoscopic excision of abdominal endometriosis lesion with placement of polypropylene mesh.
Measurements and Main Results: Large sub-fascial abdominal wall endometriosis lesion was completely excised and resultant fascial defect successful closed with synthetic mesh. Patient was discharged same day, recovered without issue, and notes complete resolution of pre-operative symptoms.
Conclusion: Abdominal wall endometriosis involving the fascia or underlying structures can be safely and effectively resected using the laparoscopic techniques outlined in this video. This minimally invasive approach allows excellent operative exposure and a quicker recovery. In cases with large fascial defects, synthetic mesh should be utilized, and several techniques can be employed to reduce the incidence of post-op adhesions.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
(11:30 AM — 12:35 PM)

12:09 PM

Laparoscopic Shaving of Rectosigmoid Deep Infiltrating Endometriosis Under Laparoscopic Ultrasound Guidance

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Study Objective: Our study objectives include presenting laparoscopic shaving of rectosigmoid endometriosis and describing the novel approach of using laparoscopic ultrasound guidance to enhance complete excision.

Design: Laparoscopic ultrasound during rectosigmoid deep infiltrating endometriosis excision.
Setting: Tertiary care center.
Patients or Participants: Patient presenting for multidisciplinary surgical excision of DIE.
Interventions: The intervention performed includes excision of rectosigmoid deep infiltrating endometriosis with use of laparoscopic ultrasound.
Measurements and Main Results: N/A.
Conclusion: It is important to perform a complete pre-operative evaluation to determine the extent of disease and the necessity of a multidisciplinary approach. Laparoscopic ultrasound can provide additional information including size and depth of lesions, which could play a role in surgical decision making. Laparoscopic ultrasound may enhance complete excision of DIE lesions and decrease the incidence of recurrence.

VIDEO SESSION 11 - ENDOMETRIOSIS & Laparoscopy & Laparoscopy
(11:30 AM — 12:35 PM)

12:15 PM

Ureterolysis for Deep Infiltrating Endometriosis Using Indocyanine Green on the Robotic Platform

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Study Objective: To demonstrate safe identification of ureters in patients with deep infiltrating endometriosis or severe adhesive disease using indocyanine green under near-infrared fluorescence on the robotic platform.
Design: Stepwise demonstration using narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: A 43-year-old G0 with stage IV endometriosis presented with chronic pelvic pain. Her surgical history is notable for two aborted hysterectomies due to severe adhesive disease, despite extensive lysis of adhesions. She desired surgical intervention.
Interventions: In cases of stage IV endometriosis, localizing the ureters can be challenging due to severe adhesive disease, surrounding fibrotic tissue, and distorted anatomy. Intravenous indocyanine green has previously been described to assist with resection of endometriosis.[1-3] Alternatively, we describe a technique that allows for easier identification of ureters using indocyanine green (ICG) injection retrogradely in ureteral stents while visualized under near-infrared fluorescence (NIRF).[4-5]
1. Perform cystoscopy and place bilateral open-ended 5-French ureteral catheters. Inject indocyanine green retrogradely in each ureteral catheter, and place caps to seal the catheters to maximize ICG retention.
2. Once robotic-assisted laparoscopic surgery is started, use NIRF to identify the ureter. The ureter will emit green fluorescence, whereas the surrounding tissue will not.
3. Once the ureter is identified, NIRF is intermittently used to safely follow the course of the ureter and perform ureterolysis, while excising endometriosis.
Measurements and Main Results: The patient underwent robotic-assisted total laparoscopic hysterectomy, bilateral salpingo-oophorectomy, bilateral ureterolysis, low anterior bowel resection with primary anastomosis, and resection of endometriosis without intraoperative complications or ureteral injury. Her postoperative course was unremarkable. At her 3-week postoperative visit, pelvic pain had completely resolved.
Conclusion: This case demonstrates the use of intra-ureteral ICG and NIRF to identify the ureters and perform ureterolysis in cases of deep infiltrative endometriosis.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids
(11:30 AM — 12:35 PM)

11:33 AM

Laparoscopic Myomectomy in the Retzius Space

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Study Objective: To illustrate a laparoscopic approach for the excision of the rare fibroid found within the Retzius space, to showcase relevant anatomy of the paravesical and Retzius space as well as to review the retroperitoneal vascular anatomy of the female pelvis.
Design: Elective Laparoscopic Myomectomy.
Setting: After verification of informed consent, the patient was taken to the operating room where a safety surgical briefing was performed. The patient was given a general anesthetic. They were then prepped and draped in the dorsal lithotomy position. 2g of Ancef was given. A foley catheter was inserted under sterile conditions and a Mengeshkar uterine manipulator was placed.
Patients or Participants: Previously healthy 36-year-old G1P1 who presented with a growing abdominal mass, she was otherwise asymptomatic. She was consented for laparoscopic myomectomy and underwent GnRH agonist treatment for 3 months prior to surgery.
Interventions: Laparoscopic Surgery.
Measurements and Main Results: Estimated blood loss was 400cc. The patient had no postoperative complications and was discharged home on post-operative day 1. The final specimen pathology was leiomyoma with a specimen weight of 556g.
Conclusion: Leiomyomas within the Retzius space are rare and can be safely excised using a laparoscopic approach. Bladder insufflation along with recognition of pelvic anatomical landmarks optimizes surgical navigation. Awareness of vascular structures present within Retzius space is instrumental for safe dissection.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids
(11:30 AM — 12:35 PM)

11:39 AM

Laparoscopic Myomectomy of Large Broad Ligament Fibroid

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*Corresponding author.

Study Objective: To demonstrate surgical techniques aimed at successfully navigating the anatomic distortion caused by large broad ligament fibroids.
Design: N/A.
Setting: The patient underwent surgery at a tertiary care center. They were placed in dorsal lithotomy position in steep Trendelenburg to aid in performance of pelvic laparoscopy. Insufflation was carried out to 15mmHg. A primary 10mm umbilical trocar was used for the camera and three additional 5mm assist ports were placed.
Patients or Participants: 36-year-old G1P0 who presented with pelvic pressure, dyspareunia, and bowel/bladder dysfunction. Evaluation revealed a 9cm left broad ligament fibroid. The patient desired future fertility and elected to undergo laparoscopic myomectomy.
Interventions: Laparoscopic myomectomy, temporary ligation of ipsilateral uterine artery at the origin.

Measurements and Main Results: Successful fibroid removal with minimal blood loss and no intra-operative complications. Patient had same-day discharge followed by uneventful post-operative recovery.
Conclusion: Large broad ligament fibroids present many surgical challenges due to proximity to and compression of vital retroperitoneal structures, but laparoscopic myomectomy can be safely and efficiently performed using the reproducible techniques outlined in this video.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids (11:30 AM — 12:35 PM)

11:45 AM

Minimally Invasive Surgery for Persistent Uterine Incarceration in a Patient with a History of Prior Colectomy

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*Corresponding author.

Study Objective: 1. Review the diagnosis, risk factors and management options for the incarcerated gravid uterus.
2. Present a case of an incarcerated uterus at 18 weeks gestation which resulted in acute urinary retention and was able to be resolved with minimally invasive surgery after initial noninvasive methods failed.
3. Discuss the management of the incarcerated uterus including the role of minimally invasive surgery and specific suggestions which may be helpful.
Design: Case presentation.
Setting: Operating room at a tertiary academic medical center.
Patients or Participants: A 25-year-old gravida 2 para 0 at 18 weeks gestation with symptomatic and persistent uterine incarceration causing urinary retention. This patient also had a history of prior laparoscopic colectomy for inflammatory bowel disease.
Interventions: Laparoscopic and vaginal approach to reducing uterine incarceration under general anesthesia.
Measurements and Main Results: Resolution of uterine incarceration and urinary retention as well as favorable pregnancy outcome.
Conclusion: The incarcerated gravid uterus is an uncommon but potentially severe complication of pregnancy with risks to the mother and fetus. It can be confirmed on imaging and a stepwise approach to reduction can be employed to minimize invasive interventions. We present a combined laparoscopic and vaginal approach which successfully reduced a case of persistent incarcerated uterus at 18 weeks gestation and resolved urinary retention. Additionally, we suggest history of prior total colectomy as an additional risk factor for this condition as the absence of a mobile rectum in the pelvis may contribute to incarceration of the uterus.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids (11:30 AM — 12:35 PM)

11:51 AM

Temporary Occlusion of the Uterine Artery at the Origin Using Titanium Clips for Laparoscopic Myomectomy

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Study Objective: To demonstrate retroperitoneal dissection to skeletonize and temporarily occlude the uterine arteries at the origin using titanium clips at the time of a laparoscopic myomectomy and to demonstrate simulation of clip application and removal.
Design: N/A.
Setting: Robotic-assisted pelvic laparoscopy.
Patients or Participants: Patient with large fibroid uterus undergoing myomectomy.
Interventions: Placement of titanium clips on the uterine arteries at the origin.
Measurements and Main Results: Minimization of blood loss at the time of myomectomy.
Conclusion: Temporary occlusion of the uterine arteries at the origin with titanium clips can be used to minimize blood loss at the time of laparoscopic myomectomy and other laparoscopic pelvic and uterine surgeries where high blood loss is expected or for patients with a low starting hemoglobin or other pertinent medical co-morbidities.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids (11:30 AM — 12:35 PM)

11:57 AM

Laparoscopic Myomectomy for a Large Incarcerated Posterior Myoma

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Study Objective: To demonstrate a technique for laparoscopic myomectomy with a large posterior fibroid and incarcerated uterus.
Design: We present a stepwise narrated demonstration of our technique for posterior myomectomy.
Setting: Referral Center in Upstate NY.
Patients or Participants: A 35-year-old with large posterior fibroid desiring fertility sparing treatment.
Interventions: Bilateral retroperitoneal dissections are performed, demonstrating both lateral and anterior approaches for isolation of uterine blood supply. Hemostatic control is achieved with the use of rectal misoprostol, intrauterine vasopressin and temporary occlusion of the uterine blood supply. A high hysterotomy is made and the fibroid is dissected away from the pseudocapsule, eventually allowing displacement of the uterus out of the posterior cul-de-sac with a vaginal hand as the dissection continues, demonstrating an approach to hysterotomy when the ideal location is inaccessible. On completion of the myomectomy, a uterine manipulator is placed, and excess serosa is trimmed. The myometrium is repaired with a 3-layer closure followed by a single layer on the uterine serosa.
Measurements and Main Results: Successful laparoscopic myomectomy for a 669-gram fibroid with estimated blood loss of 100ml and benign pathology. Patient discharged home postoperative day one. Normal appearing uterus on 3-month follow-up ultrasound.
Conclusion: Laparoscopic myomectomies can be safely performed on large posterior uterine fibroids even in the setting of an incarcerated uterus. The above techniques can improve hemostasis, access to the fibroid and repair of atypical hysterotomy.

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VIDEO SESSION 12 - LAPAROSCOPY & Fibroids
(11:30 AM — 12:35 PM)

12:03 PM

Laparoscopic Hysterectomy Following Robotic Radical Trachelectomy

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Study Objective: To demonstrate safe laparoscopic technique in performing hysterectomy following a previous radical trachelectomy.
Design: Stepwise demonstration using narrated video footage.
Setting: An academic safety net county hospital.
Patients or Participants: A 38-yo G5P0050 with a history of Stage 1B1 squamous cell carcinoma of the cervix was treated with robotic radical trachelectomy in 2011. She represented ten years later with abnormal uterine bleeding from a large prolapsing fibroid requiring multiple blood transfusions. Patient desires to proceed with definitive surgical management and underwent laparoscopic hysterectomy, bilateral salpingectomy, and cystoscopy.
Interventions: In certain cases of cervical cancer, patients can be offered fertility sparing options such as trachelectomy. Following radical dissection of the parametria, pelvic anatomy becomes distorted due to the development of fibrotic tissue. Additionally, following a trachelectomy a colpotomizer cup cannot be used to help lateralize and protect the ureters from inadvertent injury. Therefore, a completion hysterectomy has an elevated risk of urologic injury. We demonstrate a surgical technique to perform a completion hysterectomy laparoscopically.
1. Ureteral stent placement aids in identification of the ureters in the previously dissected surgical field.
2. Identification of pelvic anatomy and restoring normal anatomy is vital in performing a completion hysterectomy laparoscopically.
Measurements and Main Results: The patient underwent a laparoscopic hysterectomy, bilateral salpingectomy, bilateral ureterolysis, and cystoscopy without intraoperative complications. Her postoperative course was uncomplicated and had no further complaints at her six-week postoperative visit.
Conclusion: This case demonstrates a surgical technique to perform a laparoscopic hysterectomy following a robotic radical trachelectomy.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids
(11:30 AM — 12:35 PM)

12:09 PM

Laparoscopic Repair of a Deep Cesarean Scar Defect Guided by Hysteroscopy: Surgical Technique

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Study Objective: To show a uterus-preserving surgical technique in a patient with a deep cesarean scar defect.
Design: A technical video showing a laparoscopic isthmoplasty guided by hysteroscopy.
Setting: A tertiary referral hospital. For surgery, the patient was placed in dorsal modified lithotomy position. The surgeon was on the patient's left side, the first assistant on the right, and the second assistant between the patient's legs to perform the hysteroscopy.
Patients or Participants: A 41-year-old woman, with a history of two cesarean sections, was referred to our gynecological department for symptomatic isthmocele with abnormal uterine bleeding and abdominal pain. At MRI examination, it was identified a cesarean scar defect of 34 mm length x 34mm depth x 48mm of transverse diameter, with a residual myometrial thickness of 1.7 mm.
Interventions: The procedure started with the resection of adhesions between the uterus and the abdominal wall, followed by cautious mobilization of the bladder below the external cervical os. The cesarean scar was excised until healthy myometrium was identified, guided by transillumination with hysteroscopy. Afterwards, an hysterometer was used to facilitate the myometrial repair, which was performed with two layers of interrupted 2-0 absorbable multifilament suture. An hysteroscopic control was done, using physiological solution with methylene blue as distensor media, which ensured, with a laparoscopic view, that there were no leaks. Finally, the uterine plastic was covered by a peritoneal flap.
Measurements and Main Results: Operating time was of 140 minutes. The postoperative course was uneventful, and the patient was discharged on the first postoperative day. The patient reported resolution of postmenstrual spotting and abdominal pain.
Conclusion: Laparoscopic repair of a deep cesarean scar defect guided by hysteroscopy, is a feasible surgery and it should be considered as an alternative to hysterectomy in women who want to preserve the uterus.

VIDEO SESSION 12 - LAPAROSCOPY & Fibroids
(11:30 AM — 12:35 PM)

12:15 PM

Hysteroscopy Assisted Wedge Resection of an Interstitial Ectopic Pregnancy

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Study Objective: To evaluate the use of hysteroscopy as a tool to aid in the dissection of interstitial ectopic pregnancies.
Design: Educational Video Presentation
Setting: Teaching hospital, Minimally Invasive Gynecology OR Team, patient in the operating room.
Patients or Participants: Patient at a Medical Teaching Facility
Interventions: Hysteroscopy during a wedge resection of a known interstitial ectopic pregnancy.
Measurements and Main Results: This intraoperative video displays a surgical wedge resection of an interstitial ectopic pregnancy. Upon laparoscopic entry, the right fallopian tube was found to be normal and the right cornua was found to be slightly hyperemic, however no clear boundaries of the interstitial ectopic pregnancy were apparent to guide resection. A hysteroscopy was performed to see if the interstitial pregnancy was communicating with, invading into, or creating a mass effect on the endometrial cavity, however no such findings were noted. Following hysteroscopy, the right cornua was found to be altered with the interstitial pregnancy seeming more exophytic, guiding dissection. This change was suspected to be due to the intravasation of the hysteroscopic distention media into the myometrial compartment and possibly floating the pregnancy tissue and villi towards the serosa. The wedge resection was then completed successfully with no complications. This video displays the possible use of a hysteroscopy during wedge resection of an ectopic pregnancy.
Conclusion: Diagnostic hysteroscopy could be a useful tool in recognizing the proper planes of dissection in cases of complex or ill-defined interstitial ectopic pregnancies and could be considered in future cases.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

11:33 AM

Novel Techniques for Deeply Infiltrated Endometriosis in the Rectum and Parametrium Via Robotic Notes

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Study Objective: To demonstrate novel techniques for the proper utilization of the Robotic assisted transvaginal Natural Orifice Transluminal Endoscopy Surgery (NOTES) technique for safely surgical managing deeply infiltrated endometriosis (DIE)
Design: Stepwise demonstration with narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: A 38-year-old G3P3, NSVDx1 and CSx1 for twin pregnancy with severe chronic pelvic pain. Previous history of laparoscopic ablation of endometriosis 10 years ago. Adenomyosis, deeply infiltrated endometriosis and intrapelvic adhesions was demonstrated on the MRI.
Interventions: Robotic transvaginal NOTES hysterectomy has been demonstrated to be feasible and safe in the surgical management of benign gynecology disease compared to traditional NOTES hysterectomy; however, it can be technically challenging to perform, particularly in managing of additional deep infiltrated endometriosis removal surgery after hysterectomy. The research indicates that robotic vNOTES surgeries are feasible in complex benign gynecologic procedures such as endometriosis and sacrocolpopexy. The robotic wristed instruments with 3-D visualization resulting in delicate tissue dissection and uncomplicated suturing and knot typing, are constructive to surgeons for overcoming the cumbersome surgical techniques in transvaginal NOTES complete endometriosis removal. Integration of robotic transvaginal single site surgery and resection of DIE is an innovative alternative minimally invasive route that is more cosmetic and less pain.
Measurements and Main Results: The procedure was successfully completed in approximately 200 minutes with an unevenly postoperative recovery. Patient was discharge home same day. Her pain level was 7/10 in first week, 5/10 in second week, 2/10 in third week. Pathology confirmation of adenomyosis, right ureteral, right uterine artery pedicle and rectal endometriosis involving muscularis propria.
Conclusion: Robotic transvaginal NOTES for deeply invasive endometriosis is challenging but feasible in patients with parametrial and rectal involvement. The advantage of articulating instrumentation and 3-D visualization are especially pivotal in complex transvaginal NOTES surgery.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

11:39 AM

vNOTES Hysterectomy, Adnexectomy and Uterosacral Ligament Suspension: A Walk-through Guide

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Study Objective: To provide a stepwise guide to performing vNOTES hysterectomy, adnexectomy and vault suspension, using two access platform methods.
Design: Video demonstration.
Setting: A single tertiary-care academic centre.
Patients or Participants: Two women consented for surgery for abnormal uterine bleeding and endometrial intra-epithelial neoplasia.
Interventions: Vaginal natural orifice transluminal endoscopic surgery (vNOTES) hysterectomy and adnexectomy are performed for both women, in addition to uterosacral ligament suspension for one.
Measurements and Main Results: Step-by-step walk-through is shown to demonstrate the successful completion of a hysterectomy, adnexectomy, and vault suspension. Use of a traditional glove platform and that of an advanced access system, the GelPOINT Access System® (Applied Medical, Rancho Santa Margarita, CA, USA), are illustrated. The surgical steps are summarized as: (1) colpotomy and abdominal entry; (2) transection of the uterosacral ligaments; (3) placement of an access platform; (4) upper abdominal survey; (5) transection of the uterine and cornual pedicles; (6) identification of the ureters; (7) bilateral salpingo-oophorectomy; (8) uterosacral ligament suspension; (9) cystoscopy; (10) vaginal vault closure and tying of the suspension sutures.
Conclusion: This video demonstrates the steps to safely reproduce a vNOTES hysterectomy, adnexectomy and uterosacral ligament suspension with two techniques of achieving pneumoperitoneum. vNOTES offers scar-free surgery, improved access to high pedicles and surgical fields, and a favourable recovery profile, making it an attractive surgical route in appropriate candidates.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

11:45 AM

Novel Technique for Performing a Minimally Invasive Myomectomy: Robotic vNOTES Myomectomy

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Study Objective: This video demonstrates robotic vaginal natural orifice transluminal endoscopic surgery (vNOTES) for myomectomy.
Design: There are various routes for myomectomy. The vaginal route is preferred for hysterectomy as it eliminates abdominal incisions and is associated with shorter hospital stays, operative time and recovery[1] and this can be assumed with myomectomy. However, visualization may be difficult with limited space. Robotic surgery offers enhanced visualization and precision. vNOTES myomectomy is previously described[2] however traditional laparoscopic instruments offer limited motion which makes suturing difficult. Robotic vNOTES is used for hysterectomy, sacrocolpopexy and endometriosis resection.[3,4,5,6] One study showed that for hysterectomy, there was no difference in operative time, admission length or postoperative pain between robotic and traditional vNOTES. This study proposed that robotic vNOTES was beneficial due to use of wristed instruments.[3] Given advantages of vaginal and robotic surgery, the robotic vNOTES myomectomy technique was developed.
Setting: Academic hospital. Positioning was dorsal lithotomy, steep Trendelenburg.
Patients or Participants: A 28-year-old presented with pain and heavy periods. She had no significant history and had 3 prior vaginal deliveries. Imaging showed an 8cm posterior uterine fibroid and she desired fertility sparing, surgical management.
Interventions: A 3cm posterior colpotomy was made and an Alexis retractor with gel port was placed through the colpotomy. The Da Vinci robot was docked vaginally and myomectomy of an 8cm fibroid was performed. After the fibroid was detached, the myometrium was closed in layers. The robot was undocked and contained morcellation of the fibroid was performed using the ExCITE technique.[7] The posterior colpotomy was closed.
Measurements and Main Results: The patient was discharged home same day with 100cc blood loss.

Conclusion: This video shows that robotic vNOTES is a feasible technique for myomectomy. It offers the benefits of minimally invasive vaginal surgery and the detail and precision of robotic surgery while maintaining quick post operative recovery and minimal blood loss.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

11:51 AM

Management of Pelvic Organ Prolapse with or without Hysterectomy Via Transvaginal Robotic Notes High Uterosacral Ligament

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Study Objective: To demonstrate stepwise techniques for the successful use of the robotic-assisted transvaginal natural orifice transluminal endoscopy surgery high uterosacral ligament suspension (RvNOTES-HUS) technique for pelvic organ prolapse with and without uterine preservation.
Design: Stepwise demonstration with narrated video footage (Canadian Task Force classification III).
Setting: An academic tertiary care hospital.
Patients or Participants: Case 1: 62-year-old G0P0 with a symptomatic stage Ⅱ anterior vaginal prolapse and Stage Ⅱ uterine prolapse. Preoperative vaginal length was measured at 9cm. Case 2: 42-year-old G3P2 with a symptomatic fibroid uterus with stage Ⅱ anterior vaginal prolapse and Stage Ⅱ uterine prolapse. Preoperative vaginal length was measured at 8cm.
Interventions: Since the approval of the robotic platforms in gynecologic surgery by the Food and Drug Administration in 2005[1], robotic assisted surgery has been proliferating in the treatment of benign gynecological diseases including sacrocolpopexy, hysterectomy, myomectomy and endometriosis resection[2-5]. In recent years, publications have demonstrated the feasibility and safety of traditional laparoscopic assisted high uterosacral ligament suspension for pelvic organ prolapse with long term follow up[6-8]. However, robotic assisted RvNOTES-HUS has yet to be investigated in a publication. Utilizing the RvNOTES-HUS technique with or without uterine preservation operations greatly reduces the difficulty of intraperitoneal suture for the surgeon and postoperative pain for the patient.
Measurements and Main Results: Case 1: Procedure was successfully performed with a postoperative vaginal length of 8cm. Pain level was 4/10 in the first week, 2/10 in the second, 0/10 in the third. POP was stage 0. Case 2: Procedure was successfully performed with a postoperative vaginal length of 7cm. She had one day of post-operative pain. POP was stage 0.
Conclusion: RvNOTES-HUS is a practical technique in women with uterine prolapse while choosing whether to preserve the uterus. This technique allows for the better exposure of the ureter, while the articulating robotic joints allow for increased precision of dissection and suturing.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

11:57 AM

vNOTES Under the Hood Technique of Hysterectomy in Obese Patient

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Study Objective: To demonstrate vaginal NOTES under the hood technique of hysterectomy in an obese patient.
Design: Stepwise description of the technique with narrated video.
Setting: Minimally invasive gynecological surgery department with experience in vNOTES at a tertiary care private hospital.
Patients or Participants: A 56-year-old female with post menopausal bleeding and simple atypical endometrial hyperplasia. She was nulliparous with a non-descending cervix and narrow vagina. Her BMI was 39.6 (Obesity grade 2).
Interventions: Vaginally assisted NOTES hysterectomy with bilateral salpingo-oophorectomy using a wet surgical mop.
Measurements and Main Results: The duration of the surgery was 51 minutes. The blood loss was about 15 ml. There were no intraoperative and postoperative complications. The patient was discharged on day two.
Conclusion: The hood made of a surgical mop retracts and protects the bowel and other viscera while hysterectomy is performed 'under the hood' using an energy device. This technique appears feasible and particularly helpful in an obese patient where the obliteration of space due to viscera is more common.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

12:03 PM

Hysteroscopic Removal of Deeply Embedded IUD

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Study Objective: Highlight deeply embedded IUD as a potential complication of IUD placement and review surgical techniques for hysteroscopic removal of malpositioned IUD.
Design: N/A.
Setting: Main operating room suite, lithotomy position.
Patients or Participants: N/A.
Interventions: Operative hysteroscopy to remove deeply embedded IUD.
Measurements and Main Results: Successful recognition and removal of deeply embedded IUD via hysteroscopy including pre-operative ultrasound and MRI to localize IUD position.
Conclusion: Malpositioned IUD is a common complication of IUD use. A hysteroscopic approach is a safe and effective tool in removal of malpositioned or embedded IUD, including those deeply or completely embedded in the myometrium.

VIDEO SESSION 13 - NATURAL ORIFICE & Hysteroscopy (11:30 AM — 12:35 PM)

12:09 PM

Intramyometrial Pregnancy

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Study Objective: Hysteroscopic management of Extra cavitary ectopic pregnancy.
Design: Case presentation.
Setting: Operative Hysteroscopy using 1.8 mm 30degree telescope with operative sheath and hand instruments without electrocautery
Patients or Participants: single case study.
Interventions: Operative Hysteroscopy at low pressure of 8 mm Hg under trans abdominal ultrasound guidance.

Measurements and Main Results: A second para patient was referred to our tertiary center with failed attempt to perform dilatation and evacuation for a missed abortion. They did not find and product of conception in curettage specimen. At our center on 3d transvaginal ultrasound we diagnosed it to be an intra myometrial pregnancy. Under trans abdominal ultrasound guidance with full urinary bladder we decided to remove band of fibrotic adhesion near fundus with cold Scissors to release intra myometrial pregnancy in endometrial cavity. It was followed by suction with disposable cannula under trans abdominal ultrasound guidance for ensure complete evacuation. Integrity of fundal myometrium was checked at the end of the procedure. More than 1 cm myometrial thickness was present above ectopic gestation site.
Conclusion: Hysteroscopy under sonography guidance is safe management option for such complicated intramyometrial ectopic pregnancy.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

11:36 AM

Robotic-Assisted Laparoscopic Repair of Iatrogenic Vesico-Vaginal Fistula

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Study Objective: This video highlights the principles of robotic assisted laparoscopic repair of iatrogenic vesico-vaginal fistula
Design: Surgical video presentation.
Setting: Academic tertiary care center.
Patients or Participants: We present 2 cases of iatrogenic vesico-vaginal fistula repaired robotically. Case 1 is a 49-year-old patient with a vesico-vaginal fistula after an open supracervical hysterectomy with incidental cystotomy and repair. Case 2 is a 61-year-old patient who was referred for management of a supra-trigonal vesico-vaginal fistula as a complication of vaginal hysterectomy.
Interventions: Case 1 started with cystoscopy and placement of ureteral stents. The peritoneum above the vaginal cuff was incised and an anterior colpotomy was created. The bladder was dissected until the fistula was identified and the injured area was 4 cm away from the colpotomy. The fistulous margins where dissected. The bladder mucosa was repaired in 2 layers in a running fashion. The bladder was retrogradely filled, confirming the repair was watertight. The colpotomy was closed in 2 layers. The repair was reinforced with omental interposition. For case 2, a stent was placed through the vaginal fistulous opening. The stent was identified transvesically with cystoscopy. Bilateral ureteral stents were placed. Similar steps from case 1 were carried out. Cystoscopy was performed confirming an adequate repair. Bilateral ureteral stents were removed. A Foley catheter was inserted to remain in place for 3 weeks.
Measurements and Main Results: Both patients were discharged on post-operative day 1. The patient in case 1 had a voiding cystogram showing no evidence of residual or recurrent fistula on post-operative week 3, and urine leakage was resolved. The patient in case 2 is scheduled for follow up on post-operative week 3.
Conclusion: Robotic assisted repair offers optimal surgical exposure and is ideal for supra-trigonal and complex vesico-vaginal fistulas, affording good outcomes for patients.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

11:42 AM

Laparoscopic Nerve-Sparing Sacropexy: Tips and Tricks for a Safe and Anatomical Surgical Procedure

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Study Objective: to demonstrate a nerve-sparing technique during laparoscopic sacropexy (LSP) for treatment of multicompartment pelvic organ prolapse.
Design: A step-by-step demonstration of our surgical procedure of laparoscopic sacropexy (LSP).
Setting: Sacropexy is the 'gold standard' procedure for apical prolapse. This procedure is characterized by a complete dissection of the avascular spaces and is nerve sparing technique saving superior and inferior hypogastric plexus and the hypogastric nerves.
Patients or Participants: Patients with POP-Q Stage III and IV/prolapse of uterine
Interventions: Our surgical nerve-sparing LSP technique proceeds in 10 steps:
Step 1: Suspension of the sigma to the abdominal wall.
Step 2: Opening the peritoneum and exposure of sacral promontory and of the longitudinal anterior vertebral ligament.
Step 3: Dissection of the right medial pararectal space (Okabayashi's Space), respecting the integrity of the presacral fascia and of the rHN contained within it.
Step 4: Dissection of the rectovaginal space with a latero-medial approach expecting the integrity of the rectal fascia. The lateral limits were defined by the uterosacral and rectovaginal ligaments, and the base was represented by the perineal body and levator ani muscle.
Step 5: Dissection of the vesicovaginal space through the creation of an avascular space with the apex at the dorsal end of the bladder trigone and laterally limited by the vesicouterine ligaments.
Step 6: Subtotal hysterectomy.
Step 7: A first synthetic mesh (posterior) fixed with a total of five no. 3–0 non-absorbable sutures.
Step 8: A second synthetic mesh (anterior) fixed with five no. 3–0 non-absorbable sutures.
Step 9: Mesh fixation on the cervical stump and ligamentum longitudinale.
Step 10: Mesh peritonealization.
Measurements and Main Results: LSP combines the high efficacy of reconstructive surgery using non-absorbable mesh with the fast recovery and low complication rate resulting from minimal tissue trauma and laparoscopicalprocedure precision.
Conclusion: A nerve-sparing approach to pelvic spaces during LSP is feasible following well-defined surgical steps.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

11:48 AM

Revival of a Surgical Technique: Marsupialization of Female Urethral Diverticula

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Study Objective: To review the etiology, incidence, basic evaluation and the current treatment options for female urethral diverticula. As well as to describe a case-presentation of female urethral diverticulum and to demonstrate a technique for marsupialization.
Design: A case presentation and educational surgical video
Setting: Single academic institution
Patients or Participants: Single patient
Interventions: Marsupialization of female urethral diverticulum
Measurements and Main Results: We present a case of a 31-year-old female with a painful anterior vaginal wall mass, urinary urgency/frequency and some leakage of urine during pregnancy. MRI was notable for a 3.7 × 2.7cm anterior vaginal wall mass concerning for urethral diverticulum. After her vaginal delivery she underwent aspiration for decompression; however, she then had recurrence of the diverticulum 6-weeks later resulting in repeat drainage. At that time, she referred to Urogynecology. Her exam was notable for a recurrent diverticulum. She as counseled extensively on her options for treatment and decision was ultimately made to proceed with marsupialization due to her current social circumstances, desire not to undergo a more complex surgery nor to have prolonged Foley catheter use. She underwent an uncomplicated marsupialization of her urethral diverticulum and was discharged home the same day and her foley was removed at home on postoperative day zero. She was seen for follow-up at 2-weeks and 6-weeks and was healing well without urinary incontinence or notable recurrence symptoms or diverticulum.
Conclusion: Marsupialization is a simple, quick, and effective treatment option for urethral diverticula with minimal surgical risk and should be considered in appropriately counseled patients as an initial treatment option for female urethral diverticula.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

11:54 AM

Vaginal and Laparoscopic Repair of Vesico-Vaginal Fistulae: A Comparison of Techniques

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Study Objective: To compare vaginal and laparoscopic techniques for vesico-vaginal fistula (VVF) repair and suggest which situations may be appropriate for each technique.
Design: Video is used from two operations: a vaginal fistula repair using the Latzko technique and a laparoscopic repair using the O'Conor technique.
Setting: Both operations were performed in a standard gynecologic operating room with the patient in lithotomy position. For the laparoscopic repair, one 5mm umbilical port was used for the laparoscope, and two 5mm lateral ports were placed on each side to allow suturing by both surgeons.
Patients or Participants: One patient with a VVF resulting from a hysterectomy, and one patient with a VVF resulting from a cystotomy during an emergent cesarian delivery.
Interventions: The first patient, who had sufficient descent of the vaginal apex, underwent a Latzko-style vaginal repair. The vaginal epithelium was dissected away from the fistula opening, and the fistula tract was closed with a purse string suture and inverted with an additional suture. The vaginal epithelium was then closed interrupted sutures.
The second patient, in whom the fistula was located in an inaccessible location high in the vagina, underwent a laparoscopic repair based on the O'Conor technique. The bladder was dissected away from the upper vagina. The bladder was entered near the site of the fistula and the fistula tract was excised. The bladder was closed in two layers, and the vagina was repaired in a single layer.
Measurements and Main Results: Both patients had resolution of urinary leakage and neither fistula recurred.
Conclusion: Vaginal VVF repairs are appropriate when VVF are accessible through the vagina, and a laparoscopic technique is appropriate for inaccessible VVF.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

12:00 PM

Congenital Dysplastic Kidney with Ectopic Ureter to the Uterine Cervix

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Study Objective: To describe a unique presentation of a patient with an ectopic ureter to the uterine cervix, and its associated congenital dysplastic kidney. To highlight relevant anatomy, demonstrate the surgical technique used to identify and treat the ectopic ureter.
Design: Video case report.
Setting: Operating room at an academic hospital.
Patients or Participants: Single surgical patient.
Interventions: Endoscopic resection of dysplastic kidney and ectopic ureter.
Measurements and Main Results: We describe the unusual presentation of a 40-year-old female who was referred to our facility due to the complaint of 6-months of tissue protruding from her vagina. She was noted to have an anterior vaginal mass. In office cystovaginoscopy revealed no left ureteral orifice and large cystic mass adjacent to the cervix on the left. Imaging confirmed the dysplastic left kidney with an ectopic ureter to the uterine cervix associated with a left sided paracervical and paravaginal abscesses. The patient subsequently underwent an uncomplicated robotic-assisted nephrectomy and complete excision of the ureter as well as paravaginal and paracervical abscesses utilizing a multidisciplinary approach.
Conclusion: In this video case report, we demonstrate a successful surgical technique to identify and excise an ectopic ureter and paravaginal/paracervical abscesses using a multidisciplinary approach with combined nephrectomy. This presentation reviews the pertinent pelvic anatomy and highlights the importance of complete resection of an ectopic ureter at the time of nephrectomy for a dysplastic kidney to prevent recurrence of abscess at the location of the insertion point of the distal ureter.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

12:06 PM

Robotic Nerve Sparing Uterosacral Ligament Suspension

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Study Objective: To demonstrate a technique for robotic assisted nerve sparing uterosacral ligament suspension.
Design: Description and demonstration of a novel surgical technique.
Setting: Tertiary care academic center.
Patients or Participants: A 49-year-old woman, who presented with AUB -A, pelvic pain, and vaginal bulge, was diagnosed with stage 2 pelvic organ prolapse, adenomyosis and endometriosis.
Interventions: Robotic assisted hysterectomy and excision of endometriosis for treatment of her pelvic pain and AUB. Robotic approach was

recommended for prolapse repair due to the other underlying conditions; however, decision was made to perform uterosacral suspension over mesh augmentation. Mobilization of the ureter and dissection of the inferior hypogastric nerve was performed. Suspension of the vaginal cuff was performed using barbed sutures. A total of 6 suspension sutures were placed incorporating the uterosacral ligaments to the anterior and posterior vaginal cuff. Obliteration of the enterocele was performed using this method. Care was taken not to include the inferior hypogastric nerve in these suspension sutures performing a nerve sparing uterosacral ligament suspension.
Measurements and Main Results: At 6 weeks, patient suffered no perioperative complications and had excellent apical suspension. Continued follow-up is ongoing.
Conclusion: Identification and avoidance of the inferior hypogastric nerve while performing uterosacral ligament suspension is a safe, feasible procedure and may prevent morbidities.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

12:12 PM

Laparoscopic Left Ureteric Reimplantation for Post Caesarean Section Ureterovaginal Fistula

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Study Objective: To demonstrate laparoscopic ureteric implantation procedure in a case of ureterovaginal fistula.
Design: Stepwise demonstration of laparoscopic ureteric implantation in a case of ureterovaginal fistula with previous history of lower segment caesarean section with narrated video.
Setting: Tertiary care hospital.
Patients or Participants: A 22-year primipara, underwent lower segment caesarean section six weeks back, presented with watery discharge from vagina, fever and pain in abdomen from day five after caesarean section. Per speculum examination showed urinary leakage from left fornix. Methylene blue test revealed no leakage of dye from vagina. Abdominal ultrasound showed left sided moderate hydronephrosis, both kidneys normal, uterus bulky in size with no free fluid in abdomen. CT intravenous pyelography revealed left sided ureterovaginal fistula. Cystoscopy with left ureteric stenting tried stent did not pass beyond 2-3 cm. Percutaneous nephrostomy done for diversion of urine.
Interventions: Ureteric reimplantation done after six weeks of nephrostomy. Left lateral pelvic wall dissection done to identify the course of ureter from pelvic brim to fistula site. Bladder mobilised from anterior abdominal wall and hitched to the psoas muscle. Cystostomy done after creating tunnel over superior aspect of bladder. Lower end of ureter cut and spatulated. Ureteric stenting done with DJ stent. Lower end of ureter implanted over bladder with approximating sutures with 4-0 delayed absorbable sutures. Lower end of ureter covered by bladder muscle to create anti reflux mechanism.
Measurements and Main Results: Post operative recovery was uneventful. Bladder was catheterized with Foleys catheter for 14 days and ureteric stent removed after six weeks by cystoscopy.
Conclusion: Laparoscopic ureteric reimplantation can be done for ureterovaginal fistula with excellent outcome. Delaying the repair till three months allows healing of tissue edema and inflammation with healthy tissue for surgery.

VIDEO SESSION 14 - UROGYNECOLOGY & Pelvic Floor Disorder (11:30 AM — 12:35 PM)

12:18 PM

Laparoscopic Uterovaginal Anastomosis for Cervical Agenesia and Upper Vagina

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Study Objective: Cervical agenesis and the upper third of the vagina is a Müllerian malformation, which presents alterations in the patient's quality of life, with primary amenorrhea, dysmenorrhea, for which treatment was initiated for laparoscopic uterovaginal anastomosis.
Design: Report of a case, followed up 6 months after the surgical event.
Setting: This is a female patient undergoing operative laparoscopy, after performing a neovagina. In the laparoscopy operating room, assisted vaginally.
Patients or Participants: A 21-year-old female patient with primary amenorrhea.
Interventions: Uterovaginal anastomosis was performed.
Measurements and Main Results: Post-surgical surveillance was maintained to assess clinical improvement of pelvic pain, she presented menstruation the first three months in follow-up with oral contraceptives based on ethinylestradiol/levonogestrel, and after three months the treatment was suspended, the silastic uterine catheter, and the patient continued to present cyclical menses.
Conclusion: Vaginal-assisted laparoscopic uterovaginal anastomosis is a technique with satisfactory results for patients with C4 and V4 Müllerian malformations, to improve quality of life and reproductive future.

VIDEO SESSION 15 - ROBOTICS (2:00 PM — 3:05 PM)

2:03 PM

Robotic Multidisciplinary Management of Extensive Deep Endometriosis

Andou M.,[*,1] *Yanai S.,*[1] *Hada T.,*[1] *Kanno K.,*[1] *Sakate S.,*[1] *Sawada M.,*[1] *Kato K.,*[1] *Shimada K.,*[2] *Yoshino Y.*[1]. [1]*Obstetrics & Gynecology, Kurashiki Medical Center, Kurashiki, Japan;* [2]*Kurashiki Medical Center, Kurashiki, Japan*
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Study Objective: To demonstrate a robotic multidisciplinary technique for extensive deep endometriosis ranging from Douglas pouch obliteration, rectal endometriosis and ureteral and appendiceal endometriosis.
Design: Case report.
Setting: Gynecology and Obstetrics department of a general hospital.
Patients or Participants: A 46-year-old para 3-1-2-2 woman who presented with severe dysmenorrhea and difficulty in defecation with right flank pain for 3 years.
Interventions: Robotically assisted hysterectomy with bilateral salpingo-oophrecetomy followed by LAR, appendectomy and urinary tract resection and reconstruction using psoas hitch, and appendectomy was performed on this patient early 2022. As the patient suffered from Douglas pouch obliteration, during hysterectomy we dissected the Douglas pouch and removed the deep endometriosis surrounding the sacral uterine ligament. Low anterior resection was performed using a double stapling technique. The bowel was transected below the pathologic site using a linear stapler. The oral stump of the bowel was extracted through the extended (to 3cms) left iliac port-site and outside the body, the pathologic segment was resected and the anvil for stapling was placed. The bowel was anastomosed using a

circular stapler. Perfusion of the anastomotic site is confirmed via ICG firefly technology. Then the appendectomy was performed. After dissection of the mesoappendix, the appendix was transected at the base using a linear stapler. Finally, the lower segment of the ureter which became stenotic due to ureteral endometriosis was resected. Ureteroneocystostomy was performed using the psoas hitch. All of the procedure was caried out using the double bipolar technique, where the left Maryland forceps are used for coagulation and hemostasis and the right are used only for cutting.
Measurements and Main Results: The duration of the surgery was 4h4m. Estimated blood loss was 100mL. The postoperative course was completely benign.
Conclusion: Even complex procedures can be managed safely using robotic technology and multidisciplinary techniques.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:09 PM

Robotic Tubal Reanastomosis Following Bilateral Partial Salpingectomy of Tubal Infundibula

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Study Objective: Demonstrate how to perform a robotic tubal reanastomosis in a patient who previously had a bilateral partial salpingectomy of the infundibula.
Design: Case report.
Setting: The patient was positioned in dorsal lithotomy and Trendelenburg. 4 arms and an assistant port were used.
Patients or Participants: One patient case is illustrated in this video.
Interventions: Robotic tubal reanastomosis.
Measurements and Main Results: The patient achieved a spontaneous intrauterine pregnancy after the surgery.
Conclusion: Tubal reanastomosis following bilateral partial salpingectomy of the infundibula is challenging, but pregnancy is still possible. Care should be taken to excise the mid-portion of the ampulla if a bilateral partial salpingectomy is performed in case the patient has regret and desires a reversal.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:15 PM

Navigating the Obliterated Anterior Cul-De-Sac with a Novel Zavanelli of the Cervix

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Study Objective: The objectives of this video include to review risk factors for the obliterated anterior cul-de-sac (OAC), discuss patient evaluation for an OAC including ultrasound imaging, and display surgical techniques for approaching an OAC. Surgical techniques include restoring normal anatomy, controlling the uterine vascular supply, beginning dissection posterolaterally, backfilling the bladder, starting the colpotomy posteriorly, and optimizing the surgeon's perspective with a novel Zavanelli maneuver of the cervix.
Design: N/A.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: The obliterated anterior cul-de-sac (OAC) is an obstacle that is becoming much more common in gynecologic surgery with the increasing rate of cesarean section (CS). When patients have risk factors like a history of CS, surgical planning requires a high level of suspicion for preparedness. This video reviews the thorough preoperative patient evaluation, including ultrasound findings that could indicate an OAC. The video exhibits surgical techniques for navigating an obliterated anterior cul-de-sac, including the restoration of normal anatomy, uterine vascular control, posterolateral dissection, backfilling the bladder, posterior colpotomy and a novel Zavanelli maneuver of the cervix, in which the uterine manipulator is removed, and cervix lifted cranially to provide the surgeon with a new perspective for safe dissection.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:21 PM

Da Vinci Xi Port Set-up and Docking Made Easy: 6 Steps to Success

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Study Objective: To demonstrate a step-by-step laparoscopic port set-up and docking method for the da Vinci Xi Robotic-Assisted System that can be adapted to most gynecological surgeries.
Design: Video demonstration of an easy and replicable port set-up that can facilitate operating in both the pelvis and upper abdomen.
Setting: Gynecologic robotic procedure performed in the operating room.
Patients or Participants: N/A.
Interventions: Port set-up and docking can be completed by following six easy steps. First, the surgeon must gain access to the abdominal cavity via the surgeon's preferred approach. The patient is placed in a deep Trendelenburg position. The left lateral robotic port is then inserted. The port should be positioned just above where the bowel meets the abdominal wall. The next step is insertion of the left sided 5 mm assist port midway between the umbilicus and lateral port, but 3-4 cm superiorly. Right sided ports can then be inserted. One or 2 ports can be used depending on whether or not a fourth arm is required. If four robotic arms are being used for the procedure, an additional right sided port can be inserted midway between the umbilicus and right lateral port. The final step includes docking the robot with the robot coming in from the patient's left or right side. Alternatively, the same port orientation can be used to operate in the upper abdomen by rotating the robot boom 180 degrees and docking so that the robot is facing the head.
Measurements and Main Results: N/A.
Conclusion: Although there are many possible methods for port set-up and robotic docking, it can be efficiently performed if the steps outlined in this video are followed.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:27 PM

Optimizing Surgeon Longevity: Ergonomics in Robotic Surgery

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Study Objective: To describe the risk of physical injury to robotic surgeons and review optimal set up of the robotic console, bedside assistant, and uterine manipulator that decrease risk of a work-related injury.
Design: Video demonstration with narrated description.
Setting: Tertiary care academic teaching hospital.
Patients or Participants: Surgeons trained in robotic surgery.
Interventions: Ergonomically favorable operating room set up for the robotic console, bedside assistant, and uterine manipulator.
Measurements and Main Results: Per the US Labor Department, the highest incidence of work-related injuries is in healthcare. Prior research suggests robotic surgery is more ergonomically favorable in the upper back, shoulders, arms and wrists and mentally less stressful than conventional laparoscopy. However, over 50% of robotic surgeons have work related pain with less than 20% of all robotic surgeons having received formalized ergonomic training. This video reviews appropriate operating room set up for the robotic console, bedside assistant, and uterine manipulator along with common positioning and postural errors that may lead to physical strain.
Conclusion: In order to maximize career longevity and minimize work-related injuries, surgeons must understand the ergonomically correct set up that is recommended for the robotic console, bedside assistant, and uterine manipulator. Early adoption of these recommendations can help prevent physical injuries and should be an essential foundation of trainees' operative skills.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:33 PM

Single Port Robotic Hysterectomy after the Previous Robotic Radical Trachelectomy

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Study Objective: The basic treatment for cervix cancer is hysterectomy. For nullipara women, trachelectomy may be considered. In this video, we described the technique of a single port robotic hysterectomy to a patient who underwent a multi-port robotic radical trachelectomy previously.
Design: Case Report.
Setting: Academic medical center.
Patients or Participants: This 32-year-old woman presented with a recurrence of cervical cancer. She had a history of robotic radical trachelectomy with pelvic lymphadenectomy for stage IA1 cervical cancer 9 years earlier.
Interventions: At first, we described the typical multi-port robotic radical trachelectomy which preserved the main uterine artery and round ligament. There was no recurrence in follow up MRI and colposcopy after the surgery. But in December 2021, her pap-smear revealed adenocarcinoma. MRI of the pelvis and PET CT were all normal. After careful consideration, our team used DaVinci SP system to perform the hysterectomy and BS. The operation was similar to a general hysterectomy, but there was an adhesion between the uterus and the ovary due to the previous operation. Although several branches of the uterine artery were ligated, the blood supply to the uterus was sufficient. The uterus and bladder also had moderate adhesion. After the colpotomy, the thread of cervical cerclage in the previous operation was confirmed. The subsequent procedure was similar to that of a typical hysterectomy.
Measurements and Main Results: The operation was performed successfully with no intraoperative complications.
Conclusion: Single port robotic hysterectomy after the previous robotic trachelectomy is a safe and effective approach for the recurrence of cervical cancer patients. There was some difficulty in finding the incision margin between the uterus ithmus and the upper vagina. The bladder and vagina fornix should be carefully dissected. The secondary assistant should push the colpotomizer in the same direction as the incision. Single port Robotics can help to overcome the limitations of laparoscopy, especially in complicated procedures.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:39 PM

Management of Gestational Choriocarcinoma with Combined Robotic Surgery and Suction D&C to Minimize Blood Loss

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Study Objective: Use of combined surgical techniques to minimize blood loss.
Design: video case report of one patient
Setting: OR setting, low lithotomy position.
Patients or Participants: one female patient from clinical practice setting with gestational choriocarcinoma.
Interventions: Combined minimally invasive techniques, in this case robotic surgery and suction D&C.
Measurements and Main Results: With combined surgical techniques the EBL was 350 ml, there were no short- or long-term complications and patient was discharged same day.
Conclusion: Combined minimally invasive techniques can be used to minimize blood loss or other unwanted surgical outcomes.

VIDEO SESSION 15 - ROBOTICS
(2:00 PM — 3:05 PM)

2:45 PM

Management for Ureteral Injury during Laparoscopic or Robotic Hysterectomy: Minimally Invasive Strategies

Andou M.,[1] Yanai S.,[1] Hada T.,[1] Kanno K.,[1] Sakate S.,[1] Sawada M.,[1] Kato K.,[1] Shimada K.,[2] Yoshino Y.[1]. [1]Obstetrics & Gynecology, Kurashiki Medical Center, Kurashiki, Japan; [2]Kurashiki Medical Center, Kurashiki, Japan*
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Study Objective: To demonstrate minimally invasive techniques to repair ureteral injury or ureteral stenosis related to minimally invasive hysterectomy.
Design: Retrospective cohort study.
Setting: Gynecology and Obstetrics department of a general hospital.
Patients or Participants: 23 patients who suffered from ureteral injury during surgery or ureteral stenosis or ureterovaginal fistula after hysterectomy.
Interventions: Between January 2010 and December 2021, 7,154 patients underwent laparoscopic or robotic simple hysterectomy for benign pathology. 16 patients experienced intraoperative ureteral injury found during the procedure. (Group 1) All were repaired in the same operative session using laparoscopic or robotic ureteroneocystostomy using bladder mobilization. In cases with large defects, psoas hitch or boari flap are used to compensate. 7 patients had ureteral injuries undetected intraoperatively and discovered as stenosis or fistula 3 to 12 days postoperatively. (Group 2) All were repaired via laparoscopic or robotic ureteroneocystostomy with or without psoas hitch.
Measurements and Main Results: No patient required reoperation and no patient required laparotomy. Although Group 1 the patients required 3 days placement of an indwelling bladder catheter, the hospital stay of patients was the same as patients who did not experience injury. Operative duration for repair is difficult to evaluate as it is combined with the difficult hysterectomy procedure time. Estimations show intraoperative repair took

40-104 minutes. Group 2 patients required surgical duration ranging from 70- 120 minutes. Blood loss was minimal to 150mL. No patient suffered from stenosis of the anastomotic site. 7 patients suffered from mild vesicoureteral regurgitation which did not require surgical intervention. 7 patients suffered from pyelonephritis, but only one or two episodes. (Follow up period: 3 months to 10 years.)
Conclusion: Avoiding open surgery in cases where injury occurs is important for maintaining the minimally invasive goals of the original surgery. Even if technically demanding, knowledge of laparoscopic and robotic urinary tract reconstruction techniques makes it possible to avoid open surgery for repair.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:03 PM

Double Trouble: Tips for Colpotomy and Vaginal Cuff Closure with Uterine Bicollis and Longitudinal Vaginal Septum

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Study Objective: To describe the laparoscopic technique for colpotomy, approach for laparoscopic excision of longitudinal vaginal septum, laparoscopic cuff closure with and without intact vaginal septum and considerations for uterine manipulation in patients with uterine bicollis and longitudinal vaginal septum.
Design: Two case reports.
Setting: Two laparoscopic cases at a single tertiary care center in the United States.
Patients or Participants: Two patients undergoing total laparoscopic hysterectomy (TLH) with uterine bicollis and longitudinal vaginal septa, one with a bicornuate uterus and one with uterine didelphys.
Interventions: The first patient with bicornuate uterus underwent TLH using a manipulator with small colpotomizer cup to accommodate the small caliber of the hemivagina and cervices. Colpotomy was performed by placing the manipulator first in the right cervix, then the left. Her vaginal septum left in situ as it was not bothersome. The septum was successfully integrated into the vaginal cuff. The second patient with uterine didelphys underwent TLH using a manipulator without a cup. The colpotomy was completed in a similar manner. Her septum was excised laparoscopically as it caused dyspareunia. The vaginal defect was repaired laparoscopically and cuff closed in the usual fashion.
Measurements and Main Results: Options for manipulation include a small manipulator cup, a manipulator without cup, vaginal devices such as sponge stick, vaginal/rectal probe or Briesky-Navratil retractor. Vaginal septa can be successfully incorporated into the vaginal cuff from a laparoscopic closure or excised laparoscopically.
Conclusion: Alternative means for uterine manipulation are often necessary in patients with uterine bicollis and longitudinal vaginal septa. Longitudinal vaginal septa can be successfully incorporated into the vaginal cuff for laparoscopic closure or excised and repaired laparoscopically.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:09 PM

Management of Hemorrhage during Dilation and Evacuation by Mid-Procedure Laparoscopic Uterine Artery Ligation

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Study Objective: To present a video demonstrating a multidisciplinary technique for managing hemorrhage during a dilation and evacuation (D&E) via intraoperative consult to minimally invasive gynecologic surgery (MIGS) and laparoscopic uterine artery ligation
Design: Case report.
Setting: Operating room at tertiary care center.
Patients or Participants: 37-year-old gravida 5 para 4 at 22 weeks gestation.
Interventions: A video demonstration of a laparoscopic, bilateral uterine artery ligation with pregnancy in situ to control mid-procedure hemorrhage. After initiating the D&E procedure, brisk bleeding was encountering with an estimated blood loss of 1600 mL within minutes. Options for controlling the hemorrhage were limited, as uterotonics or balloon tamponade were not possible with the pregnancy still in situ, and interventional radiology was not available for uterine artery embolization. An urgent, intraoperative consultation to MIGS was placed. A diagnostic laparoscopy was performed to evaluate for placenta accreta, uterine perforation, or other injury. No hemoperitoneum or defect was noted, however given ongoing heavy vaginal bleeding and potential need for a hysterectomy, the decision was made to proceed with uterine artery ligation prior to completion of the D&E procedure. Starting on the left side, the round ligament was incised, and the retroperitoneum was entered. The perirectal space was developed using the horizontal push-spread technique The uterine artery was skeletonized and ligated at its origin with a vascular clip. This was repeated on the contralateral side. Excellent hemostasis was noted, and the D&E was completed under laparoscopic guidance.
Measurements and Main Results: N/A.
Conclusion: Mid-procedure laparoscopic uterine artery ligation is a feasible option for controlling hemorrhage during second trimester dilation and evacuation when more traditional methods are not feasible or unavailable. A multidisciplinary, subspecialty approach to management of gynecologic complications can help optimize safe gynecologic procedures.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:15 PM

Laparoscopic Repair of Post-Coital Vaginal Perforation Communicating with the Abdominal Cavity

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Study Objective: The objective of this video is to describe an approach to the work-up and surgical management of postcoital vaginal laceration communicating with the abdominal cavity.
Design: N/A.
Setting: An academic tertiary care hospital.
Patients or Participants: The patient is an 18 y/o G0 who presented 12 hours after intercourse with heavy vaginal bleeding, diffuse abdominal pain, and multiple syncopal episodes. Initial exam was notable for hypotension, diffuse abdominal pain with involuntary guarding, and copious vaginal bleeding from the vagina of unclear origin.
Interventions: A bedside FAST scan demonstrated free fluid in Morrison's pouch. CT scan demonstrated multiple foci of air in the pelvis consistent with vaginal perforation. The patient was taken to the OR for laparoscopic repair of a 4cm full-thickness vaginal perforation communicating with the abdominal cavity, where 300cc of hemoperitoneum was evacuated from the abdominal cavity. An air leak test was performed at the end of the case to ensure no injury to the sigmoid colon.
Measurements and Main Results: The patient received was discharged on POD#1 in stable condition.
Conclusion: Vaginal perforation communicating with the abdominal cavity is a rare complication of intercourse that can have a delayed presentation and occur with hemorrhagic shock. FAST scan can be employed at

the bedside to rapidly identify massive hemoperitoneum. Though prior case reports have mainly reported an open repair, a laparoscopic approach is a safe and effective method to repair vaginal defects communicating with the abdominal cavity. Finally, given the high rate of traumatic recto-vaginal fistula reported in this population, surgeons should consider the use of an intraoperative air-leak test to confirm colorectal integrity after the repair.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:21 PM

Laparoscopic Cerclage during Pregnancy

Siedhoff M.T.,[*,1] Wright K.N.,[1] Molina A.L.,[2] Schneyer R.J.,[2] Truong M.D.*[1]. [1]*Division of Minimally Invasive Gynecologic Surgery, Cedars-Sinai Medical Center, Los Angeles, CA;* [2]*Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA*
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Study Objective: The objective of this study is to demonstrate techniques for successful placement of laparoscopic cerclage in pregnancy, highlighting ways to mitigate the challenges of operating on the gravid uterus, and differences from the procedure performed outside of pregnancy.
Design: Video case presentation illustrative of techniques for laparoscopic cerclage in pregnancy.
Setting: Quaternary care academic hospital
Patients or Participants: 34-year-old with two prior preterm deliveries in the setting of cervical insufficiency, a prior failed vaginal cerclage, and currently 13 weeks gestation.
Interventions: Laparoscopic abdominal cerclage placement.
Measurements and Main Results: The patient had an uncomplicated pregnancy following her laparoscopic cerclage, delivering at 37 weeks by cesarean following spontaneous rupture of membranes.
Conclusion: There are important differences between laparoscopic placement of a cerclage outside of pregnancy and during pregnancy. For the latter, the uterus is more difficult to manipulate, the vessels are larger and more fragile, and the risk of pregnancy loss exists. Creating windows in the broad ligaments helps identify the correct location for cerclage placement and avoid injury to the uterine vessels. An anterior-to-posterior on the left, followed by posterior-to-anterior approach on the right allows for ergonomic needle handling using two 5-mm right-sided ipsilateral ports.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:27 PM

Surgical Management of Ovarian Remnant Syndrome

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*Corresponding author.

Study Objective: To provide a basic overview of the management of ovarian remnant syndrome by discussing evidence from case series and demonstrating advanced dissection techniques commonly required to surgically treat ovarian remnant syndrome.
Design: Surgical video with highlighted anatomy and narration.
Setting: Academic Tertiary Care Hospital.
Patients or Participants: Patients with a history of bilateral salpingo-oophorectomy found to have a pelvic mass and premenopausal hormone levels consistent with ovarian remnant syndrome.
Interventions: In this video, we provide an overview of surgical treatment for ovarian remnant syndrome. Ovarian remnant syndrome occurs when ovarian tissue is inadvertently left behind during salpingo-oophorectomy and can result in pain. We review the diagnostic workup for these patients using information from large case series. We then demonstrate advanced surgical dissection techniques required to successfully remove an ovarian remnant using two surgical cases. These techniques focus on safe ureterolysis, retroperitoneal dissection with identification of avascular spaces and their borders, as well as enterolysis. We highlight relevant anatomy to aid visualization of surgical planes.
Measurements and Main Results: N/A.
Conclusion: Ovarian remnant syndrome presents a surgical challenge. In order to successfully remove an ovarian remnant, surgeons must have a good understanding of surgical anatomy and advanced dissection techniques.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:33 PM

Ovarian Remnant Syndrome Versus Retroperitonealized Ovary: Preoperative Evaluation and Surgical Management

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Study Objective: Our objectives are to compare the definitions of ovarian remnant syndrome and retroperitonealized ovary, present a patient with each condition, describe the preoperative evaluation, and demonstrate the surgical management.
Design: Perioperative evaluation and laparoscopic excision of ovarian remnant syndrome and retroperitonealized ovary.
Setting: Tertiary care center.
Patients or Participants: Reproductive-aged women presenting with pelvic pain and a history of prior pelvic surgery subsequently diagnosed with ovarian remnant syndrome or retroperitonealized ovary.
Interventions: Minimally-invasive retroperitoneal dissection and excision of ovarian remnant or retroperitonealized ovary.
Measurements and Main Results: Ovarian remnant syndrome is the presence of ovarian tissue following an oophorectomy, and retroperitonealized ovary is the presence of ovarian tissue in the retroperitoneum. Patients with a history of pelvic surgery, particularly with extensive retroperitoneal dissection, are at risk for these conditions. Retroperitonealized ovary occurs most frequently following ovarian cystectomy, while ovarian remnant syndrome occurs after oophorectomy. Importantly, ovarian remnant syndrome can usually be anticipated during preoperative evaluation, while retroperitonealized ovary is encountered during the surgery. Patients typically present with chronic pelvic pain. The preoperative workup for patients with suspected retroperitonealized ovary or ovarian remnant syndrome includes a detailed patient history, thorough physical exam, and transvaginal ultrasound evaluation. A follicle-stimulating hormone and estradiol level can evaluate for ovarian function, while a clomiphene provocation test can be used if an ovarian mass is not initially visualized on imaging. Surgical excision is the recommended management option for both conditions. It involves dissection and removal of the ovary from the surrounding structures. In patients with endometriosis, the isolation and removal of the ovarian tissue is typically complicated by dense adhesions to the pelvic sidewall, ureter, and bowel. Complete surgical resection of the ovarian tissue is imperative, as patients are at risk for endometriosis and ovarian cancer.
Conclusion: Both ovarian remnant syndrome and retroperitonealized ovary are potential sequelae of prior pelvic surgery and require surgical resection.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:39 PM

Laparoscopic Hemi-Hysterectomy for Excision of a Functional Rudimentary Uterine Horn Keys to Success

Encalada Soto D.,[1] *Khan Z.*[2]. [1]*Department of Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Mayo Clinic, Rochester, MN;* [2]*Division of Reproductive Endocrinology and Infertility, Mayo Clinic, Rochester, MN*
*Corresponding author.

Study Objective: To present a case of unicornuate uterus with a non-communicating rudimentary horn complicated with hematometra and describe important steps for successful laparoscopic surgical management.
Design: Description of the relevant anatomy and surgical technique with the use of video.
Setting: academic tertiary hospital.
Patients or Participants: A 19-yo female patient with history of dysmenorrhea. Exam revealed normal vagina and cervix deviated to the left, with an adnexal mass on the right. Ultrasound and MRI further delineated a right rudimentary horn with active endometrium, possible hematometra. A renal ultrasound ruled out renal anomaly. Hysteroscopy revealed a normal appearing unicornuate uterus with a tubal ostium. A Rummi manipulator was placed. Then, laparoscopic pelvic survey confirmed a left unicornuate uterus with an enlarged right rudimentary horn, no endometriosis was found. Next, ureterolysis was performed, followed by right salpingectomy with ovarian preservation. Vasopressin was injected to the base of the horn (20 units in 100 ml of normal saline). The right utero-ovarian and round ligament were taken down with ligasure device and bladder flap was developed. Next, monopolar L hook was used to resect the rudimentary horn. This was followed by uterine closure in two layers with 2-0 V lock barbed suture. Rudimentary horn was exteriorized in a 10 cm endobag.
Interventions: surgical procedure: diagnostic hysteroscopy, laparoscopic hemihysterectomy for excision of a functional non communicating rudimentary horn.
Measurements and Main Results: Patient was discharged on the same day of the procedure and had an uncomplicated postsurgical course.
Conclusion: Understanding the nature of the uterine anomaly before surgery is of paramount importance for the management of obstructive anomalies of the female genital tract. Laparoscopy is a safe and effective treatment modality to provide pain relief, avoid sequelae, and allow for the preservation of reproductive function.

VIDEO SESSION 16 - LAPAROSCOPY & Other & Pelvic Pain (2:00 PM — 3:05 PM)

2:45 PM

The Pelvic Pain Exam for the OB/GYN

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Study Objective: The objective of this video was to concisely review a systematic, trauma informed physical exam.
Design: N/A.
Setting: Office setting
Patients or Participants: Target audience of gynecologists working with chronic pelvic pain (CPP) in clinic.
Interventions: N/A.
Measurements and Main Results: Many physicians struggle with treating chronic pain in their clinics, often because they feel that they do not have enough time allotted in the visit or because they do not have the tools to address chronic pain. The goal of this video is to help streamline exams and add to the physician toolbelt. We cover the foundations of the physical exam, as well as how to interpret physical exam findings to target treatment options. We detail an abdominal exam with trigger point testing and evaluation for Carnett's sign. In the pelvic exam we cover identification of the muscles of the pelvis and examination for trigger point tenderness. We stress the importance of identification of these musculoskeletal findings in order to refer to physical therapy in practice. We also discuss the external vulvar exam for vulvodynia and other etiologies of pain. We discuss when other testing such as speculum or rectal exam may be indicated.
Conclusion: This video offers specific instruction on the components of the physical exam to further investigate CPP.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

2:03 PM

Minimally Invasive ICG Sentinel Lymphonodectomy in Vulvar Cancer in 10 Steps

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Study Objective: To create a didactic video demonstrating the surgical steps of incorporating the ICG (indocyanine green) method in sentinel node lymphonodectomy in vulvar cancer.
Design: Sentinel lymphonodectomy is commonly advised in unifocal vulvar cancer of less than 4cm of size and without clinically suspicious groin lymph nodes. Radioactive tracer use has been considered to be mandatory with the additional optional use of blue dye. ICG improves this approach since it is easily detectable and reproducible. The video shows the minimally invasive ICG Sentinel lymph node procedure in 10 steps to aid clinicians in reproducing this technique.
Setting: Tertiary referral center.
Patients or Participants: Vulvar cancer patients suitable for Sentinel lymphonodectomy.
Interventions: In this video we use clips of intraoperative video footage recorded with an ICG exoscope for open surgery (Vitom-ICG, Karl Storz, Germany) with its different video modes applied. Since the Exoscope is used predominantly to capture the video sequences, most of the video shows magnified views of the operating field. Additional video clips have been inserted to show the operating room setting.
Measurements and Main Results: Combining ICG and radioactive tracer is useful in sentinel detection and removal in vulvar cancer patients.
Conclusion: The use of ICG in conjunction with Technetium radioactive tracer in Sentinel lymphonodectomy in vulvar cancer provides excellent vision of the lymph vessels and lymph nodes and allows for minimally invasive and accurate detection and preparation of the Sentinels.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

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Hysteroscopic Resection of Uterine Septum: An Updated Approach

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*Corresponding author.

Study Objective: Demonstrate an updated technique for hysteroscopic resection of uterine septum.
Design: Case Study–Surgical Technique.
Setting: Major academic medical center.

Patients or Participants: Patient with known uterine septum undergoing hysteroscopic resection of septum with concomitant indicated laparoscopy.
Interventions: Operative hysteroscopy with resection of septum, with laparoscopic assistance.
Measurements and Main Results: The purpose of this video is to demonstrate the combined technique of traditional hysteroscopic scissors with an advanced hysteroscopic tissue removal system to optimally remove the avascular septal tissue and restore normal uterine cavity architecture. The patient later underwent a successful intrauterine device insertion with sonographic guidance, demonstrating a normal uterine cavity and fully resected septum.
Conclusion: Use of an advanced hysteroscopic tissue removal system in combination with traditional incision of the uterine septum results in optimal anatomic cavity restoration. This technique can be used alone or in combination with indicated laparoscopy, which provides additional visual confirmation of adequate resection using a "jack-o-lantern" technique. Further prospective studies should be conducted to evaluate the impact of this updated technique on gynecologic (i.e., bleeding) and obstetric outcomes.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

2:15 PM

Pure vNOTES Contained Power Morcellation: First Report

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Study Objective: To demonstrate a new technique of pure vaginal natural orifice transluminal endoscopic surgery (vNOTES) contained power morcellation of a transversely enlarged uterus in an endobag.
Design: Stepwise description of the technique with a narrated video.
Setting: Minimally invasive gynecological surgery department with experience in vNOTES at a tertiary care private hospital.
Patients or Participants: A 45-year-old female with a large fibroid uterus resulting in severe menorrhagia.
Interventions: The surgery is performed in the following manner and sequence-

1. Vaginally assisted NOTES hysterectomy for a large fibroid uterus.
2. Transvaginal insertion of VNMor Endobag (Veol Medical Technologies, Koparkhairane, Navi Mumbai- 400705, India) and bagging the specimen.
3. Application of vNOTES port to the VNMor Endobag followed by power morcellation of large uterus in bag using the Versator NOTES morcellator (Veol Medical Technologies, Koparkhairane, Navi Mumbai-400705, India).

Measurements and Main Results: The duration of hysterectomy was 43 mins, the duration of power morcellation was 14.5 mins, and the duration of other steps was 17 mins. Blood loss was about 75 ml. The weight of the retrieved specimen was 906 grams. There was no conversion to laparoscopy or laparotomy. There were no intraoperative and postoperative complications. The patient was discharged on day 2.
Conclusion: Pure vNOTES contained power morcellation is a feasible new technique using new modified instrumentation. This technique can possibly reduce the time required for specimen retrieval through a narrow vagina. It has the potential to retrieve large uteri or masses transvaginally. However, this should be evaluated in further studies.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

2:21 PM

Easy Steps for Excision of a Deep Infiltrative Endometrial Bladder Nodule

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Study Objective: To demonstrate an efficient and effective method of excising a deep infiltrative endometriotic (DIE) bladder nodule.
Design: A stepwise demonstration of the resection of an endometriotic bladder nodule with narrated video footage.
Setting: This video will demonstrate the steps of a deep infiltrative endometriotic bladder nodule excision, a simple and reproducible technique for all gynecologic surgeons who manage endometriosis.
Patients or Participants: A 30-year-old female with a history significant for endometriosis who previously underwent a right salpingo-oophorectomy presenting with dysmenorrhea, hematochezia, and bladder pain with menstruation. Ultrasound revealed a left ovarian endometrioma, as well as a bowel and bladder nodule, suspicious for endometriosis. After discussing possible treatment options with the patient, she opted for fertility preserving surgical management as well as excision of all endometriotic lesions.
Interventions: Easy steps that can be reproduced for the excision of a bladder nodule include: Identification of the ureters and mobilization of the bladder, identification of the endometriotic bladder nodule, excision of the nodule with full thickness if necessary, accessing the ureteral orifices in relation of the lesion, closing the cystotomy, and confirming a water tight closure.
Measurements and Main Results: Pathology confirmed endometriosis of both bowel and bladder nodules. The patient recovered well without any postoperative complications.
Conclusion: A total excision of a DIE bladder nodule is an effective treatment modality for patients with pelvic pain and suspected endometriosis. This video highlights reproducible steps that can be easily performed by gynecologic surgeons when encountering a DIE bladder nodule.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

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Minimally Invasive Management of a Second Trimester Miscarriage in a Patient with a Non-Communicating Uterine Horn

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Study Objective: We present a rare case of an 18-week missed abortion in a patient with a previously undiagnosed non-communicating uterine horn.
Design: N/A.
Setting: N/A.
Patients or Participants: A patient with a history of suspected bicornuate uterus presented with missed abortion at 18 weeks gestation.
Interventions: Prior attempt at dilation and evacuation was unsuccessful and a diagnostic hysteroscopy confirmed no connection between the uterine cavity and the pregnancy. MRI imaging confirmed a unicornuate uterus with a non-communicating horn. Exploratory laparoscopy with hemi-hysterectomy and removal of uterine horn with fetus was performed.
Measurements and Main Results: N/A.
Conclusion: Timely diagnosis of pregnancy within an unruptured non-communicating horn is exceedingly rare. With adequate workup including proper imaging, surgical planning, and technical expertise, safe laparoscopic removal of both the rudimentary horn and fetus is possible and should be offered to spare the patient the morbidity of laparotomy.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

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Management of Cesarean Scar Pregnancy Via Laparoscopic and Transcervical Approaches

Melendez A.L.,[*,1] *Gonzalez A.K.,*[1] *Salamat-Saberi N.,*[1] *Sauer R.,*[1] *Chuba N.*[2]. [1]*Obstetrics and Gynecology, University of California, Irvine, Orange, CA;* [2]*Department of Obstetrics and Gynecology, Division of Gynecology, University of California, Irvine Medical Center, Orange, CA*
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Study Objective: To detail novel management of sequelae of pre-operative uterine artery embolization in the setting of a cesarean scar pregnancy in a patient undergoing laparoscopic uterine wedge resection.
Design: A video case report with follow up at 2- and 6-weeks post-procedure.
Setting: An operative suite at a tertiary care center.
Patients or Participants: A 30-year-old woman with cesarean scar pregnancy in the setting of one prior cesarean section who underwent uterine artery embolization. Following embolization, she developed significant clot in the uterus, consistent with placental abruption, which was unable to be evacuated with uterine wedge resection alone.
Interventions: Uterine artery embolization followed by laparoscopic uterine wedge resection of a cesarean scar pregnancy with hysteroscopy and dilation and aspiration under direct laparoscopic visualization.
Measurements and Main Results: Approximately 100cc of additional products of conception and clot was evacuated from this patient by using a secondary method of uterine evacuation (dilation and aspiration).
Conclusion: Use of both laparoscopic and transcervical resection of cesarean scar ectopic pregnancy resulted in increased evacuation of products of conception. Further study is warranted to determine if this results in overall decreased blood loss in patients.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

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Strategies to Minimize Blood Loss during Laparoscopic Hysterectomy for Management of Cesarean Scar Ectopic Pregnancy

Thigpen B.,[*,1] *Ajjarapu A.,*[2] *Sunkara S.,*[2] *Kalsi J.,*[2] *Nijjar J.B.,*[2] *Chohan L.*[2]. [1]*Minimally Invasive Gynecologic Surgery, Baylor College of Medicine, Houston, TX;* [2]*Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX*
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Study Objective: Demonstrate techniques to minimize blood loss during laparoscopic hysterectomy for management of cesarean scar ectopic pregnancy.
Design: Stepwise demonstration using narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: 33-year-old G5P4004 with one prior cesarean delivery presented to the ER with abdominal pain and vaginal spotting in early pregnancy. Her vital signs were normal with a Hemoglobin of 8.9. Ultrasound revealed a ~6-week cesarean scar ectopic pregnancy. She was counseled on management options including laparoscopic resection of the ectopic with repair of uterine defect or laparoscopic hysterectomy. The patient was satisfied with her parity and opted for hysterectomy.
Interventions: The patient underwent total laparoscopic hysterectomy, bilateral pelvic wall dissection, bilateral salpingectomy, and cystoscopy. Various considerations and techniques were used intraoperatively to minimize blood loss.

1. Major vasculature (uterine and utero-ovarian arteries) was interrupted before placement of uterine manipulator
2. Uterine manipulator was placed under laparoscopic guidance in a retroverted fashion to avoid disruption of pregnancy
3. The correct plane was identified during dissection between the bladder and pregnancy to avoid injury or bleeding
4. Additional bleeding was anticipated and encountered even after major blood supply was interrupted, likely related to collateral vasculature to the pregnancy

Measurements and Main Results: Successful management of cesarean scar ectopic pregnancy was performed via laparoscopic hysterectomy. Estimated blood loss was 100cc and the surgery was uncomplicated.
Conclusion: Cesarean scar ectopic pregnancy is more common with the rising rate of cesarean deliveries. Risk of hemorrhage in this scenario is higher due to possible trophoblastic involvement up to level of uterine arteries. However, various techniques may be used to decrease blood loss during definitive surgical treatment.

VIDEO SESSION 17 - NEW INSTRUMENTATION & Laparoscopy (2:00 PM — 3:05 PM)

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Treatment of an Inguinal Lymphatic Fistula with Indocyanine Green

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Study Objective: To address iatrogenic lymphocele after inguinal lymphadenectomy for vulvar cancer with a minimally invasive intervention, by localizing the disrupted lymphatic duct with real-time NIR/ICG fluorescent imaging.
Design: Narrated video footage.
Setting: Department of Gynecologic Oncology, Bern University Hospital.
Patients or Participants: Patient A underwent hemivulvectomy with homolateral inguinal sentinel lymphadenectomy for a squamous cell carcinoma of the right vulva, FIGO Ib. Two weeks later she reported a wound dehiscence in her right groin with abundant yellowish discharges, persisting over time and leading to a remarkable progression of the dehiscence.
Patient B was seen after R1 resection of a relapsing FIGO II, already treated with combined chemoradiotherapy one year before. She underwent dorsal hemivulvectomy with bilateral inguinal lymphadenectomy, complete colpectomy and coverage of tissue defects with fascio-cutaneous flaps. Two weeks later she reported a closed inguinal lymphocele. We attempted a conservative treatment with antibiotics and needle aspirations, nevertheless a multibacterial infection occurred on the right side.
Interventions: By failing conservative measures, surgical correction of assumed lymphatic fistulas was called for in both cases. After debridement of the inguinal wound in local anesthesia, an intracutaneous injection of 2 ml ICG was carried out between the 1st and 2nd ipsilateral toe.
Measurements and Main Results: After 7 minutes a fluorescent effusion from the site of the fistula was identified in real-time NIR imaging, performed with an optic device (VITOM® ICG) installed on the operating table for the extracorporeal detection of the fluorescence produced by ICG. The disrupted lymphatic duct could be ligated. The absence of further fluorescent effusion confirmed the successful repair. The wound was closed and healed well in the follow-up. No recurrence or exacerbation of the lymphedema occurred.
Conclusion: Intraoperative NIR/ICG fluorescence lymphatic imaging with an exoscope enables a highly sensitive detection of lymphatic structures and a tailored curative intervention, with a safe toxicological profile and without radiation exposure.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
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Diagnosis and Treatment of Vesico-Peritoneal Fistula after Robotic Surgical Treatment of Deep Endometriosis

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*Corresponding author.

Study Objective: Demonstrate the diagnosis and surgical treatment of vesico-peritoneal fistula after robotic surgical treatment of deep endometriosis.
Design: Case report illustrated with a video.
Setting: Patient is placed in the semi-gynecological position on both surgical approaches.
Patients or Participants: A 38-year-old woman reports right iliac fossa pain, dysuria, and deep dyspareunia for 4 years. A 3 cm hard and painful nodule was palpable in the right iliac region of abdominal wall. MRI shows a $3.0 \times 1.4 \times 1.3$ cm retrocervical lesion and irregular thickening of the uterosacral ligament insertion, suggestive of deep endometriosis. A 2.7 cm endometrioma on left ovary. And a $6 \times 3 \times 1.5$ cm intramuscular nodule on the inferior abdominal aspect that affects virtually the entire muscle thickness.
Interventions: Robotic-assisted laparoscopic resection of pelvic endometriosis and abdominal wall nodules, with abdominal mesh placement. On the 7th postoperative day, the patient developed acute abdominal pain due to abdominal wall abscess and bladder catheter mechanical obstruction. Collection drainage was US-guided, but patient kept having recurrent urinary tract infections. CT showed a fistulous path communicating the bladder dome and the extraperitoneal space, and cystoscopy confirmed the fistula. Robotic-assisted laparoscopy was performed, Retzius space was developed for better exposure of the bladder and fistulous tract, with subsequent resection of the fistula and partial cystectomy with resection of the necrotic segment and part of synthetic mesh.
Measurements and Main Results: We obtained efficient diagnosis and treatment. The patient had complete resolution of the symptoms.
Conclusion: Vesico peritoneal fistula is a rare entity of epithelialized communication between peritoneal cavity and bladder, and it is usually associated with postoperative complications. As it has no specific symptoms, diagnosis is difficult.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
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Robotic Assisted - Laparoscopic Excision of Abdominal Wall Endometriosis

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Study Objective: The objective is to demonstrate a minimally invasive approach to treating abdominal wall endometriosis with robotic assisted – laparoscopic resection and repair.
Design: We present a video presentation documenting resection and repair of an abdominal wall endometrioma via a robotic assisted - laparoscopic approach, rather than the more traditional and often used open approach.
Setting: This surgical case was performed at a tertiary care center by Minimally Invasive Gynecologic Surgery with General Surgery available for assistance to close abdominal wall defect. Patient was positioned in the low lithotomy position. Robotic ports placed in such a manner to allow triangulation to both the abdominal wall lesion and pelvis.
Patients or Participants: 29-year-old who presented with left sided abdominal pain and palpable mass. Patient had undergone extensive evaluation, eventually leading to ultrasound guided biopsy which demonstrated endometrial glandular tissue within lesion
Interventions: Patient underwent robotic assisted - laparoscopic resection of abdominal wall endometrioma and repair of abdominal wall defect, and as well as ablation and resection of multiple additional endometrial implants within the pelvis.
Measurements and Main Results: The patient has experienced relief of her symptoms in the month following her surgical intervention.
Conclusion: Minimally invasive approaches to complete resection of abdominal wall endometriomas should be considered for lesions within the posterior recuts sheath and may afford patients relief of symptoms with the traditional benefits of minimally invasive surgery.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
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Upper Vaginectomy for Rectovaginal Endometriosis: Manual Guidance for Deep Rectovaginal Dissection

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Study Objective: The objective of this video is to demonstrate a robotic-assisted excision of a rectovaginal endometriosis nodule.
Design: This case involves a 31-year-old nulligravid patient with dysmenorrhea, dyschezia, and dyspareunia.
Setting: This surgery was performed at an academic tertiary care center. The patient was in the dorsal lithotomy position and the robot was docked from the patient's left side.
Patients or Participants: The patient had a palpable rectovaginal nodule, which was confirmed with magnetic resonance imaging.
Interventions: The patient underwent diagnostic laparoscopy which showed bilateral pelvic sidewall endometriosis and cul-de-sac obliteration. The ovaries and fallopian tubes were normal. Pelvic sidewall dissection with extensive peritoneal stripping was required to remove all of the endometriosis implants. Bilateral uterosacral ligaments were excised.
Within the posterior cul-de-sac, the rectocervical nodule was not visible due to tethering of the rectum. The rectovaginal space was carefully dissected with monopolar scissors. Despite opening the left para-rectal space, the nodule was still not visible. An assistant placed a single digit into the posterior fornix to mobilize the nodule to guide the surgeon. The surgeon dissected the rectovaginal space until the fibrosis was visualized abdominally. Chocolate cyst fluid was expelled, consistent with deep infiltrating endometriosis. Full-thickness entry into the vagina was required, and the colpotomy was closed with running barbed suture. After complete excision of endometriosis, a flat-tire test was performed to confirm rectal integrity. The surgery was then completed.
Measurements and Main Results: The patient did well and was discharged home from the recovery room. She had significant improvement in her pain, and her recovery proceeded without complications.
Conclusion: This surgical video demonstrates the importance of careful pre-operative planning and intra-operative use of resources to accomplish complete excision of endometriosis. Surgeons often need to be creative when tissue planes are obscured, and the target pathology is not clearly visible.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
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Fertility Preserving Robotic Surgery for Infiltrating Bladder Endometriosis

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Study Objective: The uterus is normally lined by endometrium, when any other site has endometriotic tissue it is known as pathological endometriosis. If this endometroitic tissue is found in the gynaecologist most feared organ the bladder it is bladder endometriosis which is a rare entity almost to the tune of 1-2%.
Design: Mrs V, nulligravida with primary infertility presented to Gyane OPD with complaints of dysmenorrhea, dyspareunia and heavy menstrual bleeding for last one and a half years. She had cyclical hematuria. On history a strong clinical suspicion of bladder endometriosis was confirmed by transvaginal ultrasound (TVS) and MRI
Setting: Cystoscopy performed by Urologist reaffirmed the diagnosis of bladder endometriosis. A 3.5 × 2cms nodule was visualized in bladder mucosa on posterior wall away from the uteric orifice. Using operative cystoscopy transurethral coring of the endometroitic nodule in the bladder was uptil the muscularis.
Patients or Participants: 1
Interventions: Robotic Fertility Sparing Surgery for Infiltrating Bladder Endometriosis
Measurements and Main Results: Multidisciplinary approach towards bladder endometriosis and complete disease resection
Conclusion: Bladder endometriosis can be diagnosed both clinically & radiologically. With the advent of robotic surgery, it has now become easier to perform such complex surgeries with better postoperative

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
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Robot-Assisted Excision of Abdominal Wall Endometrioma Utilizing Intra-Operative Ultrasound and Transabdominal Needle Placement

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Study Objective: Demonstrate technique for robot-assisted laparoscopic excision of abdominal wall endometriosis with intra-operative ultrasound-guided needle placement.
Design: Description and demonstration of surgical technique.
Setting: Tertiary care, academic center.
Patients or Participants: Patient with previous history of 2 cesarean sections and right lower quadrant cyclic abdominal wall pain.
Interventions: Intra-operative ultrasound-guided needle placement to map location of the lesion. Minimally invasive resection of the lesion with the advancement of needles to confirm clear margins.
Measurements and Main Results: Complete resection via a minimally invasive approach.
Conclusion: Minimally invasive resection of abdominal wall endometriosis using intra-operative ultrasound guided needle placement to guide surgical dissection accomplishes clear surgical margins as well as successful treatment.

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Robotic Disc Excision with Sutured Repair for Full Thickness Deep Infiltrating Endometriosis of the Sigmoid Colon.

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Study Objective: To clearly demonstrate technique for full thickness disc resection and sutured closure for deep infiltrating endometriosis of the sigmoid colon.
Design: N/A.
Setting: Community Hospital.
Patients or Participants: A 36-year-old patient with deep infiltrating endometriosis of the rectovaginal septum, left ovary, and sigmoid colon.
Interventions: A robotic surgery was performed with TLH and LSO, as well as shave resection of rectal endometriosis. A large nodule of sigmoid deep infiltrating endometriosis is identified. Full thickness excision with sutured closure is demonstrated. We include instruction on proper technique for stay suture placement and mucosal suture placement to ensure a wide-lumen closure perpendicular to the axis of the colon.
Measurements and Main Results: N/A.
Conclusion: Full thickness disc resection of the sigmoid colon is both feasible and reproducible using these techniques, either robotically or laparoscopically. Conservative excision techniques such as this allow full excision of diseased tissue while preserving the continuity of the bowel.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
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Deep Infiltrating Endometriosis Affecting Ileoanal Anastomosis (J-Pouch): Surgical Approach

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Study Objective: To review a patient case of deep infiltrating endometriosis of an ileoanal anastomosis.
Design: Case report.
Setting: Academic institution, Minimally Invasive Gynecologic Surgery and Colorectal combined procedure.
Patients or Participants: 38-year-old with history of ulcerative colitis status post ileoanal anastomosis (J-pouch) with deep infiltrating endometriosis.
Interventions: Robotic-assisted total laparoscopic hysterectomy with bilateral salpingectomy, left oophorectomy, excision of deep infiltrating endometriosis of J-pouch, ureteral ICG injection, and pouchoscopy.
Measurements and Main Results: Patients with endometriosis are at increased risk of co-morbid inflammatory bowel disease. Ileoanal anastomosis is indicated in patients with disease affecting the entire colon and rectum such as ulcerative colitis. The J-pouch is created with an anastomosis of folded terminal ileum following total resection of the colon and rectum. An enterotomy of the pouch and anal anastomosis are then completed, forgoing the need for ileostomy. The primary vascular supply consists of terminal branches of the superior mesenteric artery and is therefore limited. The

patient presented with pain and on MRI was found to have deep infiltrating endometriosis of the ileoanal anastomosis approximating 3.2 by 1.0 cm, as well as a left endometrioma. Intra-operatively, the deep infiltrating lesion was identified on the efferent limb on the antimesenteric border of the J-pouch ileum and removed using a shave technique. Care is taken to avoid the vascular supply to the J-pouch on the mesenteric aspect, as no collateral supply is available. An omental pedicle flap was created and secured overlying the pouch to reduce the risk of fistula formation. The patient underwent the procedure without complications.
Conclusion: Patients with endometriosis are at increased risk of comorbid inflammatory bowel disease. Knowledge of J-pouch anatomy is crucial to dissection in cases of endometriosis involvement, including delicate blood supply. The use of an omental flap can be helpful to prevent formation of future adhesions. A multidisciplinary approach is key to patient care.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
(2:00 PM — 3:05 PM)

2:45 PM

Robotic-Assisted Laparoscopic Treatment of Diaphragmatic Endometriosis

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Study Objective: To demonstrate the surgical technique used for a robotic-assisted diaphragm endometriosis treatment.
Design: Case report illustrated with a video.
Setting: Patient is placed in the semi-gynecological position, left lateral decubitus and proclivity. Robotic side docking set for upper abdomen using da Vinci Si platform.
Patients or Participants: A 34-year-old woman reports dysmenorrhea and pain in her right shoulder during menstruation for 5 years, ceased after combined oral contraceptive use. When she stopped the contraceptive, symptoms recurred. On MRI, hematic foci were identified in the right subphrenic space, suggesting endometrial implants.
Interventions: A 12 mm incision is performed in the umbilicus for endoscope port. Other two 8mm robotic ports and a 5 mm accessory laparoscopic trocar were placed. Patient's cart side docking enters obliquely through patient's left shoulder. Inspection shows superficial and deep typical endometriotic lesions on right diaphragmatic surface, falciform ligament is sectioned for better liver mobilization. Most superficial lesions are removed before accessing thoracic cavity. For deeper lesions, the diaphragm is opened, showing pleural involvement of endometriosis. No pulmonary lesions were identified. Diaphragm is repaired carried out by a double-layered barbed suture. Before first layer closure, a laparoscopic suction tip is introduced into the thoracic cavity and the aspiration of the pneumothorax is done concomitantly with the forced Valsalva maneuver.
Measurements and Main Results: Patient was discharged in the second postoperative day, showing great evolution in respiratory physical therapy and normal chest X-ray. Painful shoulder symptoms have completely resolved.
Conclusion: Diaphragm endometriosis has been gaining more attention in the practice of gynecologist surgeons. Robotic system improves access to the subdiaphragmatic space due to the articulated instrument movements and 3D high-definition static vision. Excision of diaphragmatic lesions is a standardized feasible procedure that allows complete treatment and good clinical results.

VIDEO SESSION 18 - ENDOMETRIOSIS & Robotics
(2:00 PM — 3:05 PM)

2:51 PM

Laparoscopic Excision of Parametrium Endometriosis

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Study Objective: To present a case of parametrium and bladder endometriosis.
Design: Case report illustrated with video.
Setting: Patient placed in semi-gynecological position, legs in stirrups and Trendelenburg tilt. A minimally invasive laparoscopic surgery was performed helped by a uterine manipulator.
Patients or Participants: We present the case of a 29-year-old woman complaining of chronic pelvic pain, severe dysmenorrhea radiating to lumbar region and coccyx, and intense deep dyspareunia. At the pelvic examination, she had a 4 cm painful nodule affecting the left parametrium, extending to the paravaginal aspect and ipsilateral uterosacral ligament. The complementary investigation with pelvic ultrasound evidenced a uterus with 83cc volume, a 1.5cm leiomyoma, a 1cm infiltrating vesical nodule, a 2 cm nodule in the right round ligament, and a 4 cm retrocervical nodule affecting left parametrium and vaginal wall.
Interventions: Laparoscopic surgical removal of all endometriotic lesions.
Measurements and Main Results: Patient was discharged in the 1st postoperative day and maintained the use of foley catheter up to the 14th day. She had a negative post-void residual test, no urinary impairment and complete remission of symptoms. The final pathological report confirmed endometriosis and leiomyoma.
Conclusion: Parametrium endometriosis can affect around 17% of women with deep endometriosis, and the surgical treatment can cause voiding disfunctions due to inferior hypogastric nerve and plexus proximity. We should always perform a nerve-sparing surgery when possible.

VIDEO SESSION 19 - FIBROIDS
(3:15 PM — 4:20 PM)

3:18 PM

Making Use of the Tools in the Toolkit: Combined Transcervical Radiofrequency Ablation and Hysteroscopic Myomectomy

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Study Objective: To highlight and describe the combined use of radiofrequency ablation and hysteroscopic myomectomy to address symptomatic uterine fibroids.
Design: Video presentation.
Setting: Academic tertiary care center.
Patients or Participants: This is a 41-year-old patient G2P1011 patient with a history of abnormal uterine bleeding and uterine fibroids. Her past surgical history was significant for an exploratory laparotomy for an ectopic pregnancy, a robotic-assisted laparoscopic myomectomy, as well as a 2-staged hysteroscopic myomectomy.
Interventions: Preoperative pelvic ultrasound showed an enlarged uterus with a 4.1 × 3.7 × 5.2 cm FIGO type 1 fibroid extending from the left uterine fundus into the endometrial cavity. The patient opted for a combined

procedure of transcervical radiofrequency ablation and hysteroscopic myomectomy to maximize her chances of success; given her prior failed treatments.
Measurements and Main Results: The radiofrequency ablation portion of the case was completed first; with three overlapping zones of ablation completed on the fibroids. The submucosal component of the fibroid was then resected using the resectoscope. The patient tolerated the procedures very well, no complications were encountered. She was discharged on the same day of her procedure with non-opioid analgesics.
Conclusion: Uterine preserving, concomitant use of multi-modality surgery can be considered for patients presenting with symptomatic uterine, including those with significant intramural and submucosal components. Combining minimally invasive tools such as radiofrequency ablation and hysteroscopic myomectomy can offer patients safe and effective alternatives in management of recurrent and recalcitrant leiomyomas.

VIDEO SESSION 19 - FIBROIDS
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Staged Colpotomy for the Management of the Large Myomatous Uterus

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Study Objective: Demonstrate the surgical benefit and technical key steps of a staged colpotomy in a large myomatous uterus at the time of laparoscopic hysterectomy (LH).
Design: Educational surgical video.
Setting: University medical center.
Patients or Participants: Two symptomatic patients with large myomatous uteri.
Interventions: Robotic-Assisted laparoscopic hysterectomy via staged colpotomy.
Measurements and Main Results: Successful completion of minimally invasive hysterectomy.
Conclusion: Staged colpotomy is a strategic and efficient technique that improves the ability to safely perform a hysterectomy on a large myomatous uterus.

VIDEO SESSION 19 - FIBROIDS
(3:15 PM — 4:20 PM)

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Laparoscopic Myomectomy of Vaginal Leiomyoma: A Video Case Report

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Study Objective: To demonstrate the surgical steps of a laparoscopic excision of a vaginal leiomyoma.
Design: We present a video of laparoscopic excision of a vaginal myoma.
Setting: Private hospital in Curitiba, Paraná, Brazil.
Patients or Participants: A 45 years-old woman, G2 P2, was referred to our outpatient clinic with a complaint of abdominal pain, frequent urination and nocturia over five months. She underwent vaginal hysterectomy one year earlier due to uterine myoma. On digital examination a round and firm mass was palpable in the left vaginal wall. Magnetic resonance imaging of abdomen and pelvis reported a solid tumor in the left side of vaginal fornix measuring 28 × 26 mm, located 2mm from ureter. The patient underwent a laparoscopic excision of the vaginal tumor. The post-operative histopathology confirmed leiomyoma.
Interventions: A laparoscopic myomectomy was recorded and presented in the video.
Measurements and Main Results: We described the main steps of laparoscopic myomectomy of vaginal leiomyoma. Step 1: Exposure of the operation field. Step 2: Incision and dissection with ultrasonic instrument of visceral peritoneum over the vaginal fornix and towards the rectovaginal space. Step 3: Vaginal opening and excision. Step 4: Dissection towards the leiomyoma to reach the cleavage plane. Step 5: Grasping and traction of the leiomyoma with a traumatic forceps to its enucleation and excision. Step 6: Extraction of leiomyoma through the vagina. Step 7: Vaginal closure with intracorporeal suturing in two layers: first with continuous suture, followed by a second layer with three X stitches of zero poliglecaprone 25. Step 8: Bipolar hemostasis.
Conclusion: The laparoscopic myomectomy of vaginal leiomyoma presented can be an effective and safe treatment due to the advantages of minimally invasive surgery. Our patient was previously hysterectomized, but laparoscopy is a prudent approach as well when necessary to undergo myomectomy of vaginal and uterine fibroids concomitantly.

VIDEO SESSION 19 - FIBROIDS
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Laparoscopic-Assisted Myomectomy during the Second Trimester of Pregnancy

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Study Objective: Through this surgical video, we aim to review the literature, indications and a stepwise approach to performing a laparoscopic-assisted myomectomy safely in the second trimester of pregnancy.
Design: Surgical video - case report, laparoscopic technique education and literature review.
Setting: University teaching hospital.
Patients or Participants: Case report of single patient with indication for laparoscopic myomectomy in pregnancy.
Interventions: Surgical management of degenerated, necrotic fibroid in pregnancy.
Measurements and Main Results: Successful surgery and resolution of symptoms with ongoing pregnancy using the techniques described in this video.
Conclusion: Laparoscopic-assisted myomectomy has traditionally been avoided in pregnancy but has several indications and can be performed safely and effectively in select patients.

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The Roeder Knot: An Innovative Tool for Laparoscopic Myomectomy

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Study Objective: Demonstrate and describe an innovative Roeder knot technique during a laparoscopic myomectomy.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Traditionally myomectomy has been performed via a laparotomy; however, recent advances in minimally invasive surgery have allowed for increased utilization of a laparoscopic approach for myomectomy. Key to a successful myomectomy is control of bleeding and manipulation of a large irregular uterus, both of which are challenging laparoscopically. An absorbable suture can be used to create a Roeder knot, or slip knot, around the base of a fibroid and tensioned during a myomectomy to improve hemostasis, tissue traction, and uterine manipulation.
Patients or Participants: The case depicts a patient with a symptomatic multi-fibroid uterus with a 7cm pedunculated fibroid and a smaller 3cm pedunculated fibroid desiring surgical intervention. Dilute vasopressin was injected under the serosa prophylactically for hemostasis. A suture was secured around the base of both fibroids using a Roeder knot, and the suture secured to the laparoscopic port using a hemostat. The laparoscopic myomectomy was performed with a combination of monopolar and bipolar electrosurgery.
Interventions: This video demonstrates the Roeder knot technique utilizing a 120cm 0-absorbable suture. The technique for tensioning and securing the Roeder knot and application for tissue traction and uterine manipulation are demonstrated.
Measurements and Main Results: The patient underwent an uncomplicated laparoscopic myomectomy with minimal blood loss.
Conclusion: Utilizing the Roeder knot technique to ligate the base of the fibroid during laparoscopic myomectomy facilitates superior hemostasis with improvements in tissue tension and uterine manipulation. Creation and use of this knot is an easily reproducible technique performed at a lower cost than commercial ligating loops. Additionally, the flexible loop size allows for customization to be utilized with larger fibroids.

VIDEO SESSION 19 - FIBROIDS
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Cervical Fibroids - Key Surgical Steps

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Study Objective: To review critical steps during robotic assisted total laparoscopic hysterectomy in patients with large cervical fibroids, focusing on tips for safely performing ureterolysis, isolation of uterine vasculature, and colpotomy.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Surgery is the primary therapy for cervical leiomyomas, which account for 0.6-2% of uterine fibroids. Cervical fibroids significantly alter anatomy, making a minimally invasive approach prohibitive to many providers. The size and location of the fibroid can cause alterations in ureter course and uterine vasculature, inability to use a uterine manipulator, and deformation of the colpotomy.
Patients or Participants: The first case depicts a patient with a 7.9-cm, midline, cervical fibroid. She received preoperative Leuprolide twice, resulting in a decrease in maximum diameter to 5.5 cm intra-operatively. The second case demonstrates a patient with a 13-cm cervical fibroid on imaging, noted to be at least 15 cm intra-operatively, causing bilateral hydroureters and hydronephrosis.
Interventions: This video demonstrates how to navigate the main challenges afforded by cervical fibroids when performing robotic hysterectomy. It includes how to create the space needed for ureterolysis and demonstrates using the ureter as a tool for navigation in the altered retroperitoneum. It highlights the importance of ligating the uterine arteries at their origin and reflecting the uterine arteries from medial to lateral. Finally, it reviews tips for completing a colpotomy using an end-to-end anastomosis (EEA) sizer as a guide and dynamic tool.
Measurements and Main Results: Both patients did well postoperatively with resolution of their symptoms. The second case had complete resolution of hydroureters and hydronephrosis.
Conclusion: Surgery is the primary therapy for cervical leiomyomas. A minimally invasive approach has proven benefits over open surgery but poses challenges due to distortion of normal anatomy. In the appropriate patient with a large cervical fibroid, robotic and laparoscopic hysterectomy can safely be performed by a skilled minimally invasive surgeon.

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Enhancing Myomectomies with 3D Uterine Modeling

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Study Objective: 3D modeling of uterine fibroids allows for preoperative surgical planning and patient education, as well as intraoperative fibroid identification.
Design: This video demonstrates utilization of 3D uterine modeling to assist a robotic assisted laparoscopic myomectomy.
Setting: Community Hospital.
Patients or Participants: 35-yo with pelvic pain and abnormal uterine bleeding - heavy menstrual bleeding, secondary to uterine fibroids
Interventions: robotic assisted laparoscopic myomectomy.
Measurements and Main Results: Successful myomectomy of >20 large bulky fibroids performed through minimally invasive technique.
Conclusion: 3D modeling assists in patient education and surgical planning. It helps to minimize number of incisions to remove fibroids, thus decreasing trauma to the myometrium and improving efficiency. It also helps intraoperatively with fibroid identification to ensure complete fibroid removal.

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Laparoscopic Myomectomy Simulation Model for Post-Graduate Learners: Mastering Enucleation

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Study Objective: The objectives of this video are to highlight the fundamentals of laparoscopic myomectomy for postgraduate learners, and to describe a low fidelity simulation model for fibroid enucleation during straight stick laparoscopic myomectomy.
Design: Surgical simulation pilot.
Setting: Surgical simulation lab with use of laparoscopic box trainer.
Patients or Participants: Feedback on the simulation model was obtained from 2 fellowship trained minimally invasive gynecologic attending surgeons (MIGS) and 17 OB/GYN residents evenly distributed across post-graduate year.
Interventions: Using the described model, we assessed user experience and face validity via pre- and post-tests.
Measurements and Main Results: On post-test, 94% of post-graduate learners felt the tactile feedback on the fibroid to be realistic or very realistic. 100% felt starting the plane of enucleation to be realistic or very realistic.

88% felt as though the density of fibroid and number of tenaculum tear-offs was realistic or very realistic. Lastly, 94% of participants felt peeling fibers from the fibroid to be realistic or very realistic. Difficulties with the injection of vasopressin and excess mobility of the uterus during enucleation were cited as points for improvement. After the simulation, 76% felt comfortable or very comfortable with creating the hysterotomy and identifying the correct plane for enucleation as compared to 29% prior. Similarly, 82% of learners felt comfortable or very comfortable with enucleation via traction-counter traction approach as compared to only 35% prior.
Conclusion: This proposed low-fidelity model for laparoscopic myomectomy realistically simulated the fundamental steps of fibroid enucleation and served as a promising method to teach the nuances of haptic feedback on pilot testing. As no historical data is available, in future studies we aim to measure construct validity with predictive validation techniques in a cohort of attending surgeons, MIGS fellows, and OB/GYN residents across several sites.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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Uterine Artery Occlusion Techniques: Tips and Tricks... and Some Pitfalls

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Study Objective: To demonstrate the benefits and challenges of various uterine artery occlusion techniques available to minimally invasive gynecologic surgeons.
Design: Educational Video Presentation.
Setting: Teaching hospital, Minimally Invasive Gynecology OR Team, patients in lithotomy position with various port configurations.
Patients or Participants: Patients at a Medical Teaching Facility.
Interventions: Uterine Artery Occlusion during Myomectomy and Hysterectomy.
Measurements and Main Results: Various research has shown that uterine artery occlusion is associated with decreased blood loss during laparoscopic and robotic hysterectomy and myomectomy. This video compares the benefits and challenges to each of the follow occlusions techniques: bipolar coagulation, bulldog clamps, polymer clips, laparoscopic clip appliers, and suture ligation. Comparisons are made between these options related to cost, technical difficulty, the extent of dissection needed, risk of thermal spread, port size requirements, and other notable differences. Intraoperative video demonstrates tips and tricks for successful application of each of these occlusion options. In addition, we also include intraoperative video of various pitfalls that surgeons can encounter with suboptimal applications of these various methods, so as to help surgeons prevent running into these foreseeable pitfalls.
Conclusion: Various uterine artery occlusion techniques are available to help reduce blood loss during minimally invasive gynecologic surgery. Knowing the benefits and challenges to each method can assist surgeons in choosing the best technique for each clinical circumstance.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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From the Pelvis to the Sciatic Nerve: Anatomy of the Pelvic Sidewall

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Study Objective: The objectives of this study are to describe the neuroanatomy of the right pelvic sidewall and describe the proper technique for dissection of the pelvic structures including the avascular spaces and pelvic arteries and nerves.
Design: Robotic footage of pelvic anatomy from an Endometriosis-related gynecologic surgery is pieced into a video.
Setting: The study setting was the OR.
Patients or Participants: Patient recruited by the institution that had laparoscopic surgeries performed.
Interventions: Patient had robotic surgery for pelvic pain.
Measurements and Main Results: The anatomy of the right pelvic sidewall and the relationship between the structures and neuro-vasculature is clearly visible in the video.
Conclusion: In Gynecology, it is essential to understand the anatomy of the pelvic sidewall in order to avoid injury of important arteries and nerves, especially when the anatomy is damaged by disease processes such as endometriosis. Hence, this project was intended as an educational resource on the anatomy of the pelvic sidewall and the location of structures in relation to important arteries and nerves.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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Building a Hysteroscopic Simulation Model

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Study Objective: Demonstrate the construction and implementation of a low-fidelity simulation model for hysteroscopy training to Obstetrics and Gynecology (OB/Gyn) residents.
Design: OB/Gyn residency training program.
Setting: Community-based hospital program.
Patients or Participants: PGY1 through PGY4 OB/Gyne residents from a community-based program.
Interventions: A hysteroscopic simulation model was constructed using low-cost, reusable, and readily accessible materials and supplies. This hysteroscopic model is used to assess residents' identification of a normal cervical canal, junction of the cervical canal and lower uterine segment, and both fallopian tube ostia. The residents should also be able to identify normal intrauterine anatomy and pathology. Learners are taught basic instrument use with proper scope rotation to minimize uterine manipulation and torque.
Measurements and Main Results: The "bell pepper" model is typically used as part of basic hysteroscopy simulation. There are some deficiencies of that model with its inability to accurately simulate proper cervical entry and identify normal intrauterine anatomy. This hysteroscopic simulation model better demonstrates proper insertion technique with angled lens resulting in improved visualization of lateral structures without angling the scope. It also provides training of proper scope rotation using the light post as a guide.
Conclusion: Low fidelity simulation models can be easily implemented into an OB/Gyn residency curriculum to enhance residents' procedural knowledge and skill development. Building this hysteroscopic simulation model provides a useful, practical, and low-cost training tool for teaching basic hysteroscopy techniques.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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Laparoscopic Suturing from Any Port Configuration: Techniques for Both the Right- and Left-Handed Surgeon

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Study Objective: To provide a comprehensive guide for laparoscopic suturing including considerations for ipsilateral and suprapubic port configurations, needle driver selection, and techniques for success for both the right- and left-handed surgeon.
Design: Video demonstration with narrated description.
Setting: Academic tertiary care site.
Patients or Participants: N/A.
Interventions: Demonstration of laparoscopic suturing in multiple port configurations.
Measurements and Main Results: The laparoscopic surgeon has the choice of several port configurations and instruments for suturing. This video reviews advantages and challenges to each and demonstrates the key techniques for successfully suturing from any configuration for both the right- and left-handed surgeon to aid in mastery of this core laparoscopic skill.
Conclusion: Laparoscopic suturing is a core skill for the minimally invasive surgeon, mastery of this technique from multiple port configurations will allow the surgeon to select a technique best suited for each patient.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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Robotic Trachelectomy: Surgical Techniques and Principles

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Study Objective: To demonstrate a technique for robotic assisted trachelectomy using EEA sizer as an alternative manipulator to colpotomizer cup.
Design: Description and demonstration of a surgical technique.
Setting: Tertiary care academic center.
Patients or Participants: A 66-year-old woman with previous supracervical hysterectomy and bilateral salpingo-oophorectomy who presented with extensive vaginal bleeding. On exam she had a cervical erosion and her workup included pap and cervical biopsies which were normal.
Interventions: Robotic assisted trachelectomy was performed for treatment of her vaginal bleeding. Mobilization of the ureters and dissection of the uterine arteries was performed. Uterine arteries were coagulated at their origins. Use of EEA sizer helped in vesicovaginal space dissection and delineating the landmarks for colpotomy. Vaginal cuff was sutured using barbed suture.
Measurements and Main Results: At 6 weeks, patient suffered no perioperative complications and reported no further bleeding.
Conclusion: EEA sizer is a good alternative to the use of colpotomizer cup and can be safely used when the colpotomizer cup is unavailable or cannot be placed. Ureteric dissection to the level of cervix can prevent intraoperative complications.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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Ureteral Tract Injuries: Management and Post-Operative Considerations

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Study Objective: Review surgical management of ureteral injury, review postoperative care considerations, discuss complications and long-term follow-up.
Design: Educational video.
Setting: Tertiary care, academic center.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: In this video, we review the management of different types of ureteral injury repair depending on the mechanism and location of injury. In particular, we illustrate ureteroureterostomy (end to end anastomosis), Boari flap, and psoas hitch. We review key surgical principles and evidence-based post-operative considerations, including ureteral stenting, drain placement and bladder decompression. Long term complications and care are discussed.
Conclusion: The ability to identify the location and extent of ureteral injuries critical to choosing the appropriate type of surgical repair. Understanding key surgical principles and postoperative considerations will assist in the prevention of short and long-term complications.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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Surgical Tips for Robotic Transabdominal Cerclage Placement

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Study Objective: The objective of this video is to present indications for an abdominal cerclage placement, review the steps of a robotic abdominal cerclage, surgical variations in the procedure, and different instruments used.
Design: Surgical Video.
Setting: The operative room.
Patients or Participants: We present two cases of patients who were referred from Maternal Fetal Medicine for robotic abdominal cerclage placement. The first patient was a 31-year-old G11P0290 who had a known history of cervical incompetence. She had a history of several second trimester fetal loss despite having a vaginal cerclage attempted twice. The second patient is a 40-year-old G3P1021 with a history of a 19-week spontaneous vaginal delivery followed by a 20-week vaginal delivery after a failed vaginal cerclage placement at 13 weeks.
Interventions: Surgical management.
Measurements and Main Results: Both patients underwent placement of a robotic abdominal cerclage with 1 cm Mersilene tape. Two different surgical techniques for tape placement are presented in each patient case. The first case demonstrates passage of a blunted needle while the second case demonstrates tunneling with passage of the tape.
Conclusion: Robotic abdominal cerclage placement is an effective procedure for treatment of cervical incompetence when indicated. There are a number of variations in surgical technique which are discussed in this video. We review tunneling with Mersilene tape versus passage of Mersilene tape on a blunted needle.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
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4:00 PM

Use of Vascular Clips to Ligate Uterine Arteries for Dissection of Anterior Lower Uterine Wall Outpouching from Bladder

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Study Objective: To present a difficult anterior compartment surgery in which vascular clips were utilized to ligate the uterine arteries prior to dissection of the bladder from a lower uterine wall outpouching during a robotic-assisted hysterectomy.
Design: Demonstration of the technique using narrated surgery video footage.
Setting: The uterine blood supply is typically ligated at the level of the internal os during a typical hysterectomy. When adhesive disease presents abnormal anatomy, there are multiple methods to secure the uterine arteries. This includes identifying it at the pelvic brim branching from the internal iliac artery, identifying the median umbilical artery and tenting upwards to find the uterine artery origin, or following the ureter down to the ureteric tunnel as it crosses under the uterine artery. The latter method was used in this case and the uterine arteries were ligated with vascular
Patients or Participants: A patient with 6 prior cesarean deliveries and subsequent development of an anterior lower uterine wall outpouching was found to have malpositioned IUD within this defect, resulting is persistent pelvic pain.
Interventions: Robotic-assisted hysterectomy was performed in a case of extensive anterior compartment adhesions, with several strategies for safe dissection and minimal blood loss:

1. Placement of ureteral stents prior to start of case
2. Dissection of uterine arteries retroperitoneally down to the ureteric tunnels and ligation with vascular clips to secure blood supply prior to dissection of the bladder
3. Backfill the bladder to help define the peritoneal reflection between bladder and lower uterine segment
4. Assess for bladder injury by backfilling after dissection

Measurements and Main Results: N/A.
Conclusion: Here, we demonstrate several strategies for difficult bladder dissection from a lower uterine wall outpouching to minimize blood loss, maintain visualization, and avoid injury to bladder or ureters.

VIDEO SESSION 20 - BASIC SCIENCE & Robotics
(3:15 PM — 4:20 PM)

4:06 PM

The Fine Balance between Radical and Functionally Conservative Excision of Endometriosis

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Study Objective: Present 3 different cases of deep endometriosis where we attempted radical but functionally conservative excision.
Design: Video compilation of 3 cases.
Setting: University hospital.
Patients or Participants: We present 3 different cases of deep infiltrating endometriosis.
Interventions: Surgical techniques in endometriosis.
Measurements and Main Results: The first case includes a 37-year-old nulliparous female with advanced endometriosis involving the right dorsolateral parametrium. Vascular clips were used to temporarily clip the uterine artery while completing the dissection of endometriotic nodule tethered to the uterine artery and ureter. Clips were removed after the dissection was complete. Our second case demonstrates the principle of dissecting diaphragmatic endometriotic nodule while avoiding entry to the pericardium. Our third case demonstrates managing cecal endometriosis with partial cecectomy to preserve the ileocecal valve.
Conclusion: Balance between complete excision and preserve organ function in cases with advanced endometriosis should be attempted. These techniques ensure that patients have a faster post-operative recovery. Resection of endometriosis using these conservative approaches have satisfactory symptom relief while decreasing long term morbidity.

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Virtual Poster Presentations

7292 Laparoscopic Foetal Extraction and Repair of Uterine Rupture at 20 Weeks of Gestation

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Study Objective: To demonstrate the viability of laparoscopic intervention for uterine rupture in selected cases.
Design: Case report.
Setting: Hospital with ICU facility.
Patients or Participants: A 28-year-old G4 P2 A1 with uterine rupture at 20 weeks looking to preserve her fertility.
Interventions: Laparoscopic intervention instead of laparotomy for a ruptured uterus.
Measurements and Main Results: Termination of pregnancy is a common medical procedure performed in the second trimester when the foetus has multiple anomalies. Termination of mid-trimester pregnancy constitutes about 10 to 15% of all abortions worldwide. We demonstrate a laparoscopic approach for foetal extraction which will definitely benefit the patient especially when she is planning to have another baby.
Conclusion: Uterine rupture is a rare complication following induction of labour for the termination of pregnancy with previous surgeries. It is usually associated with severe lower abdominal pain and sudden cessation of contractions along with haemorrhagic shock caused by intra- abdominal haemorrhage. Laparotomy is the standard procedure to repair uterine rent or to perform a hysterectomy. Here, we present a case of uterine rupture in a patient at 20 weeks of gestation who underwent termination of pregnancy by induction of labour for multiple fetal anomalies. Patient was successfully managed by laparoscopy. It suggests that laparoscopy can be an effective approach in the treatment of uterine rupture for hemodynamically stable patients.

7331 Surgical Removal of Mucinous Cystadenoma Arising from Urachal Remnant Initially Mistaken for Ovarian Mass

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Study Objective: The objectives of this study are to describe diagnosis, surgical excision and follow up of a mucinous cystadenoma arising from a urachal remnant.
Design: Case report of one patient.
Setting: Patient was admitted in ambulatory surgery for laparoscopic resection of 12.9 cm cystic lesion originally read on MRI to be arising from the left ovary with concern for epithelial neoplasm. On laparoscopic survey the mass was found to be arising from and densely adhered to the bladder.
Patients or Participants: This is a case report of a 50-year-old P0 with a pelvic mass on physical exam.
Interventions: Laparoscopic resection of the mass was conducted with intentional cystotomy and bladder dome resection. The bladder was reapproximated laparoscopically in two layers.
Measurements and Main Results: The patient was discharged with Foley catheter in place on post operative day zero, patient passed trial of void on post operative day ten. Pathologic diagnosis described a mucinous cystadenoma of low malignant potential likely arising from urachal remnant.
Conclusion: Urachal remnants exist in up to 32% of adults. Due to the rarity of this condition, malignant transformations of the urachal remnant can be mistaken for ovarian tumors. Understanding the etiology to this condition can aid in diagnosis and management.

7344 Effect of Unilateral Hydrosalpinx on Chances of Spontaneous Conception

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Study Objective: The aim of the study is to present a successful surgical management of a case of unilateral hydrosalpinx resulting after cesarean delivery that appeared to have interfered with spontaneous conception from a healthy patent contralateral fallopian tube.
Design: Case report with 6-month post-operative follow-up.
Setting: Operative laparoscopy was done in a teaching hospital operation room with the patient in dorsal lithotomy position.
Patients or Participants: 30 years- old female with a history of primary cesarean section which was complicated by postoperative infection. She presented with a history of secondary infertility of 5 years duration and was found to have a right hydrosalpinx and a patent left fallopian tube on hysterosalpingogram.
Interventions: Minimally invasive preservation of the left fallopian tube was done by performing neosalpingostomy instead of salpingectomy.
Measurements and Main Results: The patient conceived spontaneously after two *months,* and she is currently at 14 weeks gestation.
Conclusion: Minimally invasive neosalpingostomy in selected patients with unilateral hydrosalpinx can increase the chances of spontaneous pregnancy by eliminating the unfavorable effect of the hydrosalpinx.

7360 Surgical Management of Ileocecal Endometriosis, 6 Cases Treated with Laparoscopic Ileocecal Resection

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Study Objective: To present and discuss clinical features of ileocecal endometriosis (ICE) and feasibility of laparoscopic surgery for ICE.
Design: Retrospective cohort study.
Setting: Gynecology and Obstetrics department of a general hospital.
Patients or Participants: All patients who underwent laparoscopic surgery for ICE.
Interventions: Between December 2010 and January 2021, 6 patients underwent laparoscopic ileocecal resection for ICE.
Measurements and Main Results: A total of 6 patients (median age 37.0) underwent laparoscopic ileocecal resection. Five of the six cases had

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preoperative symptoms from ileocecal lesions such as bowel obstruction and abdominal pain. Three cases were diagnosed with ileal stenosis by contrast X-ray with nasointestinal tubes, and the other three were diagnosed with ICE by colonoscopy or double contrast barium enema (DCBE). All 6 patients had concomitant rectal endometriosis and underwent simultaneous laparoscopic lower anterior resection. In one case, ureteral stent placement was required for ureteral injury, and in one case, intestinal obstruction occurred postoperatively, but both cases improved without sequel. Postoperative hormone therapy with dienogest was performed in five patients. One patient underwent bilateral adnexectomy. No recurrence was observed in all patients (the median observation time: 48 month).
Conclusion: All patients with ileocecal endometriosis had rectal endometriosis and required two segmental intestinal resections. Laparoscopic surgery for ICE needs deep understanding of the gastrointestinal tract and advanced techniques of laparoscopic surgery, as well as cooperation with surgeons.

7369 Conventional Vaginal Hysterectomy vs vNOTES Hysterectomy: A Retrospective Cohort Analysis of Two Techniques

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Study Objective: The aim of this study was to compare the surgical outcomes in women undergoing a vaginal hysterectomy for abnormal uterine bleeding through a conventional vaginal hysterectomy (TVHH) vs. hysterectomy using the vaginal natural orifice transluminal endoscopic surgery (vNOTES) method.
Design: Retrospective cohort.
Setting: Tertiary academic center.
Patients or Participants: Seventy-eight patients with the diagnosis of abnormal uterine bleeding underwent a hysterectomy. Forty-five of them had a TVH and thirty-three of them had a hysterectomy via the vNOTES approach.
Interventions: A group of surgeons trained in conventional vaginal hysterectomy and vNOTES hysterectomy performed the surgeries from July 2017 to December 2021.
Measurements and Main Results: Our primary surgical outcomes were surgical time, rate of surgical complication, and blood loss. Average age for patients who underwent TVH was 41 years old and 41.2 for vNOTES; however, the average BMI for TVH was 31.7 and 30.8 for the vNOTES. 17% of the TVH group had a prior cesarean delivery (n=8) and 42.4% of them had a prior cesarean (n=14). The complications in the vNOTES group included three patients that required blood transfusions and one was readmitted within 30 days. All four of these patients had uteri weighing more than 100 g (102-840g) and one had a previous cesarean delivery. For the conventional group, nine cases resulted in complications including three blood transfusions, four patients with postoperative fever, one with a vaginal laceration and one ureteral injury. Three patients had a previous cesarean delivery and only two of them had a uterine larger than 100 g.
Conclusion: Overall vNOTES hysterectomies were faster and had lower complications compared to conventional vaginal hysterectomy; however, our analysis did not reach statistical significance. Patients in the vNOTES group had a higher proportion of prior cesareans and overall larger uteri, although less complications were noted. Randomized clinical trials are required to better characterize the findings of our study.

7378 Correction of Uterine Anomalies and Its Effect on Infertility and Recurrent Miscarriages in a Study Including 10000 Patients over 6 Years

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Study Objective: use of hysteroscopic metroplasty to enhance and promote the uterine receptivity in infertile women and those who had recurrent miscarriages.
Design: prospective study for 6 years from 2016 including 12000 cases of primary infertility and recurrent miscarriages.
Setting: operative hysteroscopy both 5mm and 9mm, patient on lithotomy position under either general or spinal anaesthesia.
Patients or Participants: cases were selected as primary infertility for more than 2 years, recurrent IVF or ICSI failure, recurrent miscarriages who had 3D transvaginal ultrasound assessment that revealed anomalies including Narrow T shaped, tubular, subseptated and septated cavities.
Interventions: hysteroscopic metroplasty to reach the normal cavity shape and dimensions. If excessive raw area levonorgestril triple dose for 21 days used post operative to enhance healing and putting Foleys catheter size 10 F for 3 days post operative.
Measurements and Main Results: 3D transvaginal ultrasound +or - saline sono hystrography done post hysteroscopic correction by one cycle to compare the shape and dimensions with the preoperative one and to ensure absence of intrauterine adhesions. 88% of cases had successfully got pregnant and continued their pregnancy beyond 36 weeks, 6 % had preterm labour between 30-36 weeks, 2% had preterm labour 28-30 weeks and 4 % still under follow up.
Conclusion: correction of uterine anomalies has a strong significance on success of implantation in cases of infertility, recurrent IVF and ICSI failure and recurrent miscarriages after prober 3D transvaginal ultrasound.

7389 Progesterone Hypersensitivity: Challenges in Longitudinal Care Management. A Case Report

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Study Objective: Progesterone Hypersensitivity. Challenges of Longitudinal Case Management. A case report.
Design: A case report.
Setting: Clinical practice in a community setting.
Patients or Participants: 19-year-old patient with 6-year history of Progesterone Hypersensitivity.
Interventions: Drosperinone contraception, GnRH Agonist with estradiol add-back; Hysterectomy with oophorectomy.
Measurements and Main Results: Patient experienced menarche at age 11. Her second menstrual cycle occurred at age 13 and was accompanied by anaphylactic episodes requiring four single-use epinephrine injections. She was immediately placed on an oral contraceptive of ethinyl estradiol and the 19-nortestosterone-derived progestin, norgestimate, but she required six epinephrine administrations for anaphylactic episodes in her next cycle. Her allergist referred her to the presenting author, who immediately switched her to continuous drosperinone/ethinyl estradiol contraception. (Drosperinone is a spironolactone analogue progestin.) This rapidly controlled the anaphylactic episodes. Over the next 6 years, rare anaphylactic episodes occurred with formulary substitution to generic drosperinone preparations. A large, framed woman, she required 6 mg of drosperinone daily when her weight exceeded 85 Kg. She was counseled on long-term treatment options including progesterone desensitization and GnRH agonist therapy with add-back estradiol. Psychosocial aspects of her options including reproductive options were counseled. After an 8-month trial of GnRH with add-back estradiol, she underwent robotic laparoscopic total hysterectomy with bilateral salpingo-oophorectomy. Findings at time of surgery included endometriosis of the left utero-sacral ligament (AAGL score = 2 points). The patient is very happy with her surgical outcome. Vasomotor symptoms are being treated.
Conclusion: Progesterone Hypersensitivity in the patient arose with her second menstrual cycle. Effective management of her condition required (1) hypothalamic suppression of ovulation, by reliable doses of the

spironolactone analogue progestin, drosperinone, or by GnRH agonist, (2) adequate social support and (3) consideration of hysterectomy and oophorectomy.

7400 Gastric Injury at Laparoscopy for Gynaecological Indications: A Systematic Review

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Study Objective: To identify causes of gastric injury at laparoscopy for gynaecological indications and determine optimal management.
Design: A prospectively registered systematic review (PROSPERO CRD42021237999) was undertaken and performed according to PRISMA guidelines.
Setting: Databases searched included Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Database of Systematic Reviews (CDSR), Medline, Embase, Web of Science, SCOPUS and Google Scholar from to January 2021.
Patients or Participants: All study types were included involving female patients of any age with gastric injuries undergoing laparoscopic surgery for any gynaecological indication.
Interventions: Laparoscopic surgery for any gynaeoclogical indications.
Measurements and Main Results: 6294 articles were screened from which 67 studies were selected for a full-text review. 28 articles satisfied inclusion criteria which contained 42 cases which were comprised of 7 observational studies (1 prospective, 6 retrospective) observational studies, 4 case series and 17 case reports. 93% (39/42) of reported injuries occurred at the time of laparoscopic entry where Veress entry technique was utilised in 74% of cases (31/42). Eighteen cases had entry point reported, with 33% (14/42) occurring at periumbilical entry point with 5% (2/42) occurring at Palmer's point. The commonest site of gastric injury was superficial, on the anterior stomach (n=8) or at the greater curvature (n=5). Of the reported aetiology, 21% (9/42) were anaesthetic related (i.e., inadvertent oesophageal intubation, prolonged or failed oxygenation). Of the patients with reported management (32/42), a similar proportion of patients were managed conservatively (n=11) when compared to laparotomy (n=13) or via laparoscopy (n=8). All injuries were detected intraoperatively with all patients recovering well with no reported long-term sequelae
Conclusion: This review of the literature reveals that gastric injury at laparoscopy for gynaecological indications is a rare complication predominantly occurring during laparoscopic entry, most commonly at periumbilical entry point. When detected intraoperatively, conservative management or laparoscopic repair in the appropriate patient is often adequate with no apparent long term sequalae.

7404 Tips and Tricks for Diagnostic Laparoscopy for Endometriosis

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Study Objective: The objective of this video is to provide Obstetricians and Gynecologists (Ob/Gyns) with tips and tricks for effective preoperative planning, minimally invasive surgical evaluation and treatment, and postoperative management for endometriosis.
Design: Narrated video.
Setting: Endometriosis is a prevalent disease that can be effectively treated with surgical excision. It is important for all Ob/Gyns to be able to effectively evaluate for and treat endometriosis via laparoscopy.
Patients or Participants: Patients with endometriosis.
Interventions: This video describes 1) preoperative evaluation for endometriosis through history, physical exam, and imaging 2) when further preoperative evaluation is required 3) when consultation with a minimally invasive gynecologic surgeon and/or other specialists such as colorectal or urology is recommended 4) tips and tricks for effective minimally invasive surgical excision of endometriosis 5) postoperative management of endometriosis.
Measurements and Main Results: This video can serve as a resource for Ob/Gyns to effectively evaluate for and treat endometriosis.
Conclusion: Endometriosis is a prevalent and debilitating disease that all Ob/Gyn's will encounter in practice. It is imperative that Ob/Gyns are able to effectively surgically evaluate for and treat endometriosis.

7407 A Self-Made Bag Assisted LESS in Ovarian Teratomectomy during Pregnancy

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Study Objective: To show how ovarian teratoma during Pregnancy can be safely managed with laparoendoscopic single-site surgery.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: The reported incidence of ovarian cysts in pregnancy varies from 0.05% to 1.2%, Compared with open surgery, laparoscopic surgery adnexal cyst during pregnancy does not increase the risk of mother and fetus. LESS has better postoperative recovery. However, conventional laparoscopic surgery is safer than LESS.
Patients or Participants: The patient was a 31-year-old woman, gravida 3, para 2, at gestational age of 15 weeks who was diagnosed with 5.6*4.1cm right ovarian teratoma and 2.0*2.3cm left ovarian cyst. Teratomectomy was performed at the same time of the previous cesarean section in 2018.
Interventions: A Self-made Bag Assisted LESS approach to ovarian teratoma with several key strategies to minimize fetal impact, ovarian damage, blood loss: 1. Make a retrieval bag before surgery with inner packaging bag of the disposable suction tube. 2. Place the affected ovary in the retrieval bag and pull the bottom of the retrieval bag to the umbilicus. To reduce the stimulation of the uterus by surgical procedures. 3. Cut the surface of the affected ovary with a cold blade to reduce ovarian damage. 4. Cut the teratoma pedicle with an ultrasonic knife to reduce bleeding.
Measurements and Main Results: N/A.
Conclusion: When performing an ovarian cystectomy under LESS, we could use upside-down specimen bag to remove the cyst from abdominal cavity conveniently, quickly and with no pollution. Self-made specimen bag is cost-saving, convenient to use. The operation has the least impact on the pregnant uterus and avoids the impact on the fetus. And cold knife and suture are used in the operation to maximize the protection of ovarian function.

7413 Preoperative Hematocrit and Transfusion Risk for Myomectomy Based on Surgical Route and Fibroid Burden

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Study Objective: To determine the association between preoperative hematocrit and rate of transfusion for abdominal and laparoscopic myomectomy based on fibroid burden.
Design: Retrospective cohort study utilizing the National Surgical Quality Improvement Program (NSQIP) database.

Setting: NSQIP participating institutions.
Patients or Participants: 26,229 women who underwent a myomectomy from 2010 - 2020.
Interventions: Abdominal or laparoscopic myomectomy.
Measurements and Main Results: 2,345/26,229 (9%) patients received a blood transfusion intra or postoperatively. Compared with patients who did not require transfusion, those who required transfusion had lower median preoperative hematocrit levels (34.7 vs. 38.2, p<0.01). The preoperative hematocrit levels were inversely associated with the rate of transfusion both overall (53%, 42%, 32%, 20%, 11%, 6%, 5% 4% for preoperative hematocrit level categories <24, 24-27, 27-30, 30-33, 33-36, 36-39, 39-42, >42, respectively) and stratified by surgical approach and fibroid burden (abdominal/1-4 myomas/weight ≤250g: 63%, 30%, 34%, 19%, 9%, 6%, 5%, 3%; laparoscopic/1-4 myomas/weight ≤250g: 30%, 19%, 11%, 5%, 2%, 1%, 2%, 1%; abdominal/≥5 myomas/weight >250g: 61%, 68%, 52%, 35%, 22%, 15%, 12%, 8%; and laparoscopic/≥5 myomas/weight >250g: 25%, 52%, 17%, 7%, 6%, 4%, 3%; all p<0.01). In addition, compared with abdominal, laparoscopic myomectomy is associated with a lower risk of transfusion both overall (3% vs. 13%, odds ratio: 0.20, 95% confidence interval: 0.18 - 0.22, p<0.01) and stratified by fibroid burden (1-4 myomas/weight ≤250g: 2% vs 9%, p<0.01; and ≥5 myomas/-weight >250g: 5% vs. 19%, p<0.01).
Conclusion: A laparoscopic approach and higher preoperative hematocrit were associated with a lower risk of transfusion for myomectomy. This study provides valuable data to optimize anemia prior to myomectomy to decrease the risk of transfusion, perform patient counseling regarding risk of transfusion for myomectomy, and select the optimal surgical route for myomectomy.

7419 Vaginally Assisted Laparoscopic Sacrocolpopexy

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Study Objective: The objective of this video is to demonstrate the surgical technique for attaching sacrocolpopexy mesh using a vaginal approach. We will highlight the steps of the procedure and discuss findings in the literature to support this approach.
Design: Surgical video recording of vaginal and laparoscopic procedures to demonstrate the steps of this technique for prolapse repair.
Setting: Operating Room
Patients or Participants: 69-year-old female with stage III anterior and apical pelvic organ prolapse who desired surgical management.
Interventions: Total vaginal hysterectomy, followed by mesh attachment via a vaginal approach for stage III pelvic organ prolapse.
Laparoscopic sacrocolpopexy was then performed in the routine fashion. Excellent apical support was noted at completion of the procedure.
Measurements and Main Results: Vaginal mesh attachment after hysterectomy and prior to laparoscopic sacrocolpopexy has shorter mean operating room times with no significant difference in complication rates or anatomic outcomes. Mesh exposure is not significantly higher in those who have vaginal mesh attachment vs. laparoscopic mesh attachment.
Conclusion: Vaginally attached mesh prior to laparoscopic sacrocolpopexy is an efficient way to perform minimally invasive sacrocolpopexy in patients with stage 3 or greater pelvic organ prolapse, and with the appropriately selected patient, allows for same day discharge.

7426 Hysteroscopic Resection of an Endocervical Cesarean Scar Fibroid

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Study Objective: To present a case of a hysteroscopic resection of an endocervical fibroid from within a Cesarean scar defect (CSD), also known as an isthmocele.
Design: Video case presentation.
Setting: Operative hysteroscopic procedure performed at an urban, academic surgical center.
Patients or Participants: 37-year-old G4P3013 with a history of 3 prior Cesareans, a hysteroscopic and abdominal myomectomy. For 3 months following a spontaneous abortion, she experienced abnormal uterine bleeding. Saline infusion sonogram and MRI revealed a 2.9 cm anterior endocervical fibroid. Options for management were reviewed. Following a short course of progestins that resulted in persistent intermenstrual spotting, and considering desire for future pregnancy, hysteroscopic resection was subsequently decided.
Interventions: Hysteroscopic myomectomy of CSD myoma.
Measurements and Main Results: Successful hysteroscopic resection and techniques to limit intraoperative and postoperative bleeding are described. Postoperatively, the patient had heavy bleeding in PACU with a quantitative blood loss of 700 mL.
Conclusion: Preoperative, intraoperative, and postoperative considerations for this case are reviewed. Preoperative considerations include adequate counseling, imaging such as MRI, thorough discussion of the risks and understanding of the patient's desires in the event of possible hysterectomy. Intraoperatively, primary prevention of bleeding can be attempted with the use of vasoconstrictive agents for both parametrial and intramyoma instillation to reduce blood flow to the uterus and fibroid. Minimizing the use of electrosurgery may be preferable given the high risk of perforation. Postoperatively, uterotonics are often ineffective at controlling CSD bleeding given the minimal residual myometrium, but antifibrinolytics such as tranexamic acid may be more helpful. If not placed in the operating room under hysteroscopic or ultrasound guidance, an intrauterine balloon can also be inserted postoperatively for tamponade.

7428 Oncologic Safety of Minimally Invasive Surgery in Non-Endometrioid Endometrial Cancer

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Study Objective: This study was aimed to compare the oncologic outcomes of patients with non-endometrioid endometrial cancer who underwent minimally invasive surgery with the outcomes of patients who underwent open surgery.
Design: retrospective study.
Setting: multi-institutional study.
Patients or Participants: patients with non-endometrioid endometrial cancer who were surgically staged by either minimally invasive surgery or open surgery.
Interventions: Oncologic outcomes of the patients were compared according to surgical approach.
Measurements and Main Results: 113 patients met the inclusion and exclusion criteria. 57 underwent minimally invasive surgery and 56 underwent open surgery. Patients who underwent minimally invasive surgery had smaller tumors (median size, 3.3 vs. 5.2%, p=0.0001) and a lower lymphovascular space invasion rate (29.8% vs. 48.2%, p=0.045). In the overall population, the numbers and rate of recurrence were significantly higher in the open surgery group (p = 0.016). In multivariate analysis, disease stage and tumor size were associated with DFS in contrast to surgical procedure.
Conclusion: Minimally invasive surgery showed similar survival outcomes when compared to open surgery in non-endometrioid endometrial

cancer patients, irrespective of disease stage. When minimally invasive surgery is managed by expert surgeons, non-endometrioid histological subtypes should not be considered a contraindication for minimally invasive surgery.

7434 A Nomogram to Predict the Probability of Laparoendoscopic Single-Site Extracorporeal Cystectomy in Patients with Benign Ovarian Cysts

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Study Objective: To develop a nomogram to predict the chances of laparoendoscopic single-site extracorporeal (LESS-E) cystectomy in patients with benign ovarian cysts.
Design: A multivariate logistic regression analysis of preoperative indicators was performed, and a nomogram was developed to predict the probability of LESS-E cystectomy.
Setting: Department of gynecology at a tertiary medical center.
Patients or Participants: 243 patients conducted LESS-E cystectomy (n=105) or laparoendoscopic single-site intracorporeal (LESS-I) cystectomy (n =138) between August 2016 and October 2018 in our institution.
Interventions: Patients were randomly assigned into training (n = 183) and validation sets (n = 60).
Measurements and Main Results: A multivariate logistic regression analysis of preoperative indicators was performed in the training set, age, BMI, height and the diameter of ovarian cysts were considered to be independent predictors of LESS-E cystectomy. A nomogram was developed based on these four factors with the concordance index (C-index) being 0.838, R2=0.415. Both external and internal calibration curves of the nomogram fitted well. Also, the DCA (decision curve analysis) exhibited satisfactory positive net benefits of the nomogram among the majority of threshold probabilities. To simplify the score, the predicted indicators in the regression model were scored by dividing the beta coefficient by the absolute value of the minimum beta coefficient, and the sum of each predictor score established a predictive scoring system (PSS). The areas under the receiver operating characteristic curve of the PSS in the training and validation sets were 0.837 and 0.835, respectively. In the total sets, the selected cut-off value of the PSS according to the maximum point of the Youden index is 8, and a preoperative score ≥8 identified patients undergoing LESS-E cystectomy.
Conclusion: A nomogram was built to predict the chances of LESS-E cystectomy in patients with benign ovarian cysts. And a PSS was established, patients with preoperative score ≥8 were recommended undergoing LESS-E cystectomy.

7446 Teaching the Teacher: Performance of a Laparoscopic Complete Peritonectomy

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Study Objective: To present our surgical technique for performing and teaching a complete peritonectomy.
Design: A stepwise demonstration of our complete peritonectomy technique with narrated video footage.
Setting: As the complete peritonectomy procedure for endometriosis is becoming more generally accepted we aim to review key principles and techniques to safely perform and teach a laparoscopic peritonectomy. Several laparoscopic robotic assisted videos exist describing the surgical technique for performing a peritonectomy, we demonstrate a laparoscopic approach which differs from performing it robotically.
Patients or Participants: A 25-year-old-female with chronic pelvic pain and abnormal uterine bleeding who presented for a surgical consultation for the management of suspected endometriosis as the source of her chronic pelvic pain.
Interventions: A diagnostic laparoscopy was advised for the definitive exclusion or inclusion of endometriosis. The key principles for performing and teaching a laparoscopic complete peritonectomy include:
- Detailed anatomic knowledge
- Proper identification and dissection of the ureter
- Providing traction
- Electrocautery to maintain hemostasis
- Structured dissection of the peritoneum

Measurements and Main Results: Pathology confirmed endometriosis as the etiology of her pain and the patient recovered well without any postoperative complications.
Conclusion: A laparoscopic complete peritonectomy can be used to assist with the diagnosis and management of pelvic pain. It can be safely performed and taught with adequate knowledge of anatomy and basic surgical principles.

7455 Long Term Outcomes after a Uterine-Sparing Approach to Essure Contraceptive Device Removal: A Case Series and Follow up Survey

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Study Objective: To analyze long-term effectiveness of a conservative, uterine-sparing approach to laparoscopic Essure contraceptive device removal. Specific outcomes of interest include patient satisfaction, symptom resolution and need for subsequent surgical intervention.
Design: Retrospective case series and follow up survey.
Setting: Large academic medical center.
Patients or Participants: Patients who underwent laparoscopic Essure removal without concomitant hysterectomy between January 2016 and December 2019.
Interventions: Patient underwent surgical removal of Essure device by laparoscopic salpingectomy or salpingostomy. Greater than 18 months after removal participants completed a survey assessing outcomes.
Measurements and Main Results: Twenty-nine patients underwent conservative Essure removal and there were 19 survey respondents, for a response rate of 65.5%. Among survey respondents, the mean length of time from Essure placement to removal was 56.7 months (range 5-117), and the mean length of time from removal to survey administration was 49.7 months (range 23-86). The most frequently reported symptom was pain (100%), followed by bleeding (52.6%), headache (42.1%), and dyspareunia (42.1%). The majority of patients underwent laparoscopic salpingectomy (79.3%); 3 patients (13.8%) underwent a combined hysteroscopic and laparoscopic approach, and 2 (6.9%) underwent laparoscopic cornuectomy. In reporting symptom improvement after Essure removal, 47.4% of patients reported total improvement, 36.8% reported almost total improvement, 5.3% reported some improvement, and 10.5% reported no improvement. The majority of patients (89.5%) reported satisfaction with their surgical results, and only 2 patients required subsequent surgical intervention for symptom management.
Conclusion: The majority of patients in our cohort reported almost total or total improvement in symptoms almost two years after Essure removal, with low rates of reintervention. A uterine-sparing approach to Essure removal, using laparoscopic and hysteroscopic modalities, may be a feasible and effective approach to addressing Essure-attributed symptoms.

7458 Approach to the Fertility-Preserving Surgical Management of a Unicornuate Uterus with a Noncommunicating, Functional Rudimentary Horn

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Study Objective: To demonstrate how a unicornuate uterus with a functional non-communicating rudimentary horn in a patient desiring fertility can be safely managed with a robotic approach
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: A tertiary academic hospital
Patients or Participants: A healthy 22-year-old presenting with complaints of cyclic dysmenorrhea and desire for future fertility.
Interventions: A robotic-assisted laparoscopic approach to the resection of a functional non-communicating rudimentary horn with several key strategies to minimize blood loss, damage of normal tissue, and prevention of adhesion formation.

1. Placing a stay suture through the tissue of the rudimentary horn to aid with traction and counter traction necessary for enucleation of the horn in the correct tissue cleavage plane.
2. Minimizing blood loss by dilute vasopressin injection at planned incision site along with care to stay within the fibrotic tissue layer connecting the rudimentary horn to the unicornuate uterus.
3. Removing canalized fallopian tube attached to rudimentary horn to prevent rudimentary horn pregnancy.
4. Combination cold dissection with careful and deliberate use of electrosurgery following principles to minimize thermal injury to surrounding normal myometrium.
5. Two-layer non-locking suture to restore tissue integrity, ensure hemostasis, and prevent adhesion formation.
6. Surgical treatment (excision preferred) of all endometriosis at the time of surgery.

Measurements and Main Results: Final pathology confirmed a rudimentary horn with functioning endometrial tissue, endometriosis implants, and endometriosis of the appendix.
Conclusion: This technique allows for the surgical removal of a non-communicating rudimentary horn with: Restoration of anatomy, prevention of rudimentary horn pregnancy, removal of endometriosis, and optimization of future fertility.

7464 Minimizing Fluid Absorption at Time of Hysteroscopy: A Systematic Review and Meta-Analysis

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Study Objective: To determine which interventions are effective in reducing fluid absorption at time of hysteroscopy.
Design: Systematic review and meta-analysis.
Setting: N/A.
Patients or Participants: Online databases were searched from inception to February 2022 for observational and randomized-control trials (RCTs) reporting interventions aimed at reducing hysteroscopic fluid absorption.
Interventions: Following PRISMA guidelines, all English-language, full-text articles reporting fluid balance, with an intervention and comparator arm were included. Risk of bias was assessed using the Cochrane Risk of Bias Tool for RCTs and Newcastle-Ottawa Scale for observational studies.
Measurements and Main Results: The search identified 898 studies, 27 of which were eligible for inclusion, examining the following interventions: GnRH agonist (GnRH-a), ulipristal acetate, vasopressin, danazol, and local, general, and regional anesthesia. Pooled data for pharmacological interventions showed a significant reduction in mean fluid absorption compared to controls (mean -182.41ml; 95% CI: -225.8, -138.9, $p<0.05$). These results were primarily driven by pre-operative treatment with danazol (-175.7ml; 95% CI: -325.4, -26.0, $p<0.05$) and GnRH-a (-168.2ml; 95% CI: -204.3, -132.3, $p<0.05$). Ulipristal acetate and type of anesthesia showed no difference. Data on type of anesthesia and vasopressin use were not amenable to meta-analysis, however four studies favored vasopressin over control regarding fluid absorption. Mean operative time was reduced following pre-operative treatment with ulipristal acetate (-8 min; 95% CI: -11.6, -4.4, $p<0.05$), danazol (-7.5 min; 95% CI: -8.7, -6.3, $p<0.05$), and GnRH agonist (-3.9 min; 95% CI: -5.9, -1.8, $p<0.05$). Overall risk of bias was found to be low across all categories in RCTs. Prospective and retrospective studies assessed by their respective tools were generally deemed high quality with minimal risk of bias.
Conclusion: Pre-operative treatment with GnRH-a and danazol was effective in reducing fluid absorption and operative time during hysteroscopy. High-quality research aimed at evaluating other interventions, such as combined hormonal contraception, progestin therapy, and vasopressin, are still lacking in the literature.

7488 Robotic-Assisted Resection of a Cornual Ectopic Pregnancy: A Focus on Technique and a Discussion on Pathology

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Study Objective: To demonstrate the robotic-assisted laparoscopic surgical technique in the resection of an advanced cornual ectopic pregnancy in a morbidly obese patient.
Design: Video recording of the cornual ectopic resection edited to highlight the principal steps.
Setting: Operating room at an academic medical center.
Patients or Participants: An asymptomatic morbidly obese (BMI 45) 37-year-old G6P1041 at 9 weeks and 5 days gestation by her LMP who was sent to the emergency room for further management after a transvaginal ultrasound confirmed her gestational age and detected a 4.8cm x 4.9cm x 4.8cm right-sided interstitial ectopic pregnancy with cardiac activity. She was hemodynamically stable with a beta-hCG of 47,458. She was considered a poor candidate for medical management and was taken to the operating room.
Interventions: Robotic-assisted laparoscopic resection of a cornual ectopic pregnancy using vasopressin, the purse-string circumferential suture, and resection of the ipsilateral fallopian tube with securement of collateral blood vessels as hemostatic techniques.
Measurements and Main Results: The robotic resection took approximately 98 minutes to complete with no complications and minimal blood loss. The patient met all postoperative milestones and was discharged from the hospital on postoperative day 1 in stable condition. Her follow up beta-hCG on postoperative day 3 was 3,034. Interestingly, the final pathology resulted in myometrium with a placenta increta with negative margins.
Conclusion: Minimally invasive techniques for the management of cornual ectopic pregnancies have continued to advance as more institutions are adopting these methods. Our case demonstrates that robotic-assisted resections of a cornual pregnancy can achieve minimal blood loss, adequate multi-layer myometrial closure, reduced postoperative

complications, and overall safety. Our case highlights the necessity for a complete and careful resection of the myometrium given the very small, but possible association of a placenta accreta spectrum disorder even at this early gestational age.

7489 Conjunction of Cystoscopy and Robotic-Assisted Bladder Trigone Endometriosis Nodule Removal with Ureteral Preservation

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Study Objective: Demonstrate tips for successful execution of robotic-assisted resection of large bladder trigone endometriosis nodule while preserving the ureters.
Design: Stepwise demonstration with narrated video footage.
Setting: An academic-tertiary-care hospital.
Patients or Participants: 36-year-old G0 with symptomatic full-thickness ill-defined nodule located in the posterior wall and trigone of the urinary bladder with anterior cul-de-sac endometriosis.
Interventions: Cystoscopy was first performed, and large mid-trigonal endometriosis nodule was noted to be extending within millimeters of the ureteral orifices. Bilateral ureteral orifices were identified, and double-J ureteral stents were sequentially guided up to the kidneys. The robotic instruments were docked, and inspection of the pelvic space conducted. The peritoneum lateral to the bladder bilaterally was incised to better define the edges of the bladder. Bilateral distal ureters were dissected out circumferentially and the dissection was carried distally. Flexible cystoscopy with Firefly technology was then utilized to define precise location and extent of the trigonal nodule in effort to minimize removal of uninvolved bladder tissue and preserve ureters. Using cystoscopic-guidance, the dissection was first carried through the serosal and muscular layers, and once the circumference of the nodule had been defined, we proceeded with the mucosal layer. The bladder lumen was entered, and the nodule meticulously excised to avoid injury to the intramural ureters as the dissection was carried distally. Bilateral ureters were preserved despite the close proximity to ureteral orifices and also maintain enough bladder tissue for bladder closure. Once resection was completed, running 3-0 V-loc sutures were utilized in 2-layer closure.
Measurements and Main Results: Patient was discharged in one-day with Foley catheter and ureteral stents with minimal pain. Cystogram at 10 days postop was negative for leak and Foley catheter was removed.
Conclusion: Robotic-assisted resection of bladder trigone endometriosis with cystoscopic guidance offers the most precise and delicate dissection of large bladder trigone endometriosis nodules, thus providing optimal bladder trigone and ureteral preservation.

7490 Perioperative Outcomes of the "Chopsticks Technique" Single-Site Laparoscopy Versus Traditional Laparoscopy for Endometrial Cancer

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Study Objective: To describe the new “chopsticks technique” single-site laparoscopic surgery technology and to compare the perioperative outcomes of the new “chopsticks technique” laparoendoscopic single-site surgery (LESS) versus traditional laparoscopic surgery (TLS) in the staging surgery of endometrial cancer (EC).
Design: Retrospective case-control study based on propensity score matching (PSM).
Setting: Department of gynecology at a tertiary medical center.
Patients or Participants: From August 2018 to August 2020 at Southwest Hospital in Chongqing, China, patients diagnosed with endometrial cancer, a total of 26 cases conducted LESS were matched with a cohort of 52 cases who underwent TLS.
Interventions: A propensity score matching was performed to reduce the bias due to the imbalanced baseline features between the two groups, and the perioperative outcomes were compared between matched cohorts.
Measurements and Main Results: We retrospectively reviewed 535 cases of patients diagnosed with endometrial cancer from our institutional database. A 1:2 propensity score matching was conducted matched by age, BMI, history of surgery, FIGO staging between the two groups. After matching, the variables were well balanced with no differences at baseline between groups. The operations in both groups were successfully completed without conversion to laparotomy. There were no statistically significant differences in the amount of intraoperative blood loss, number of lymph nodes removed, postoperative exhaust time, postoperative indwelling drainage time, postoperative hospital stay, etc. between the two groups ($P>0.05$). Meanwhile, compared with the TLS group, the LESS group has longer operation time, a lower pain score of 24-hour after surgery and a more satisfactory postoperative cosmetic effect, of which the difference was statistically significant ($P<0.05$).
Conclusion: It is undoubtedly safe and feasible for staging endometrial cancer to employ the “chopsticks technique” single-site laparoendoscopic with minimum scars from abdominal incisions, which results less pain and outstanding cosmetic effects. However, further prospective, randomized studies with larger samples are needed.

7491 Laparoscopic Removal of a Perforated Adnexal Copper IUD

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Study Objective: The objectives of this video are to review the 1) inflammatory sequelae of a perforated intra-abdominal copper intrauterine device (IUD) 2) surgical technique to safely and effectively remove a perforated copper IUD from the adnexa and 3) considerations for management of the affected adnexa.
Design: This is an educational video. Institutional review board approval was not required for this video as the video describes a de-identified clinical case.
Setting: The procedure was performed in a gynecologic operating room with the patient in dorsal lithotomy position with steep Trendelenburg.
Patients or Participants: This video reviews a clinical scenario involving a de-identified patient.
Interventions: A copper IUD was found to have perforated through the uterus and into the left adnexa with a subsequent inflammatory reaction. The foreign object was removed from the patient’s adnexa using blunt dissection and electrosurgery. This video describes the sequalae of a perforated Copper IUD, surgical technique used to remove the copper IUD, and considerations for removal or retention of the adnexa.

Measurements and Main Results: The video can serve as a resource for gynecologists to understand the sequalae and surgical management of a perforated copper IUD.
Conclusion: A possible complication of IUD placement is uterine perforation. Migration of the foreign object into an unlikely location must be considered when a patient presents with pelvic pain following placement. Copper IUDs generate an inflammatory reaction and may require advanced surgical technique for effective surgical management.

7513 Acupuncture for Pelvic Floor Disorders: A Literature Review

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Study Objective: Pelvic floor disorders, including chronic pelvic pain, urinary incontinence, and pelvic organ prolapse, significantly impact the quality of life of nearly 1 in 4 women. Symptoms are sometimes refractory to conservative measures such as behavioral modifications and physical therapy. The objective of this study is to identify the quality of current literature regarding the efficacy of acupuncture as treatment for pelvic floor disorders.
Design: A search of PubMed and Scopus databases was conducted using the search string “acupuncture" AND ("pelvic pain" OR "pelvic floor" OR "vaginismus" OR "vulvodynia" OR "atrophic vaginitis" OR "prolapse"). Two reviewers independently screened the articles, and 17 papers were selected. Articles were excluded if they were case reports or reviews, published more than 10 years ago, subjects were men or pregnant women, or English full text was not available.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: Eight of the 17 studies described acupuncture’s effect on chronic pelvic pain, 7 of which were randomized controlled trials (RCT’s) and 1 of which was a qualitative study. All demonstrated that acupuncture reduced perceived pain intensity, but 3 reported no difference compared with control groups. Seven of the 17 articles studied acupuncture use in urinary incontinence, all of which were RCT’s, and all but one concluded acupuncture was at least non-inferior to other conservative treatments. The remaining 2 studies looked at pelvic floor dysfunction. One was an RCT and 1 was a clinical trial, and both showed acupuncture significantly reduced symptoms.
Conclusion: Though higher-powered RCT’s still need to be conducted, a survey of the current literature demonstrates acupuncture is a versatile tool that may be utilized for a variety of pelvic floor disorders including chronic pelvic pain, incontinence, and pelvic floor dysfunction. Acupuncture may be a viable alternative for patients with pelvic floor disorders whose symptoms are refractory to other conservative measures.

7536 Can Body Mass Index be a Predictor of Pain during Office Hysteroscopy? Findings from a Single-Center Study

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Study Objective: Improved technology and miniaturization of the hysteroscopes has allowed for the implementation of office hysteroscopies. One of the most common factors resulting in failure to complete the procedure during office hysteroscopy is pain. Given a society with increasing rates of obesity, there is no available evidence as to whether there is an impact of obesity in a patient’s pain tolerance, therefore we seek to determine the relationship between BMI and pain level during office hysteroscopy.
Design: Retrospective chart review of 115 office diagnostic hysteroscopies performed without anesthesia using vaginoscopy technique.
Setting: University-based clinic.
Patients or Participants: Patients older than 18 years old presenting for in-office hysteroscopy.
Interventions: In-office hysteroscopy without anesthesia performed using vaginoscopy technique with rigid 5 mm diagnostic hysteroscope with 30-degree optic lens.
Measurements and Main Results: VAS pain scale from 0-10 was used immediate after the procedure to quantify pain.
Conclusion: There is no association between BMI and pain during office hysteroscopy procedures, therefore BMI is not a predictor of pain. Further studies may consider using a larger sample. In a society with increasing rates of obesity, it is important to address potential barriers to care for our evolving population.

7542 Post-Operative Complications of Appendectomy in Benign Gynecologic Surgery: National Surgical Quality Improvement Program Analysis

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Study Objective: This study was conducted to assess if concomitant appendectomy in women undergoing laparoscopic surgery for benign gynecologic indications is associated with increased rates of post-operative complications in the 30-day post-operative period.
Design: Retrospective cohort study.
Setting: National database study.
Patients or Participants: American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database was utilized to identify women who underwent laparoscopic surgery by a gynecologist. Patients were excluded if they underwent open abdominal surgeries, bowel resections, urogynecologic surgeries, or if cancer or appendicitis was present. There were 247,700 patients included in population cohort between 2010 and 2020.
Interventions: Patients were identified using Current Procedural Terminology codes. Patients who underwent concomitant appendectomy were compared to patients who did not undergo appendectomy. Demographic variables included age, body mass index, and medical co-morbidities. Post-operative complications included superficial, deep, or organ space infection, sepsis, thromboembolic events, blood transfusion, hospital re-admission, and re-operation. A matched cohort was created by computing propensity scores. Outcomes were compared between groups using Fisher and Mann-Whitney tests.
Measurements and Main Results: 1,815 patients (0.7%) underwent concomitant appendectomy. In the propensity matched sample, there were comparable rates of post-operative surgical site infections at 2.8% in the appendectomy group and 2.4% in the no appendectomy group (p-value 0.469). There were higher rates of sepsis in the appendectomy group with 1.3% of patients being diagnosed with sepsis compared to 0.3% in the no appendectomy group (p-value 0.003). There were higher rates of hospital re-admission in the appendectomy group at 4% compared to 3% in the no appendectomy group (p-value 0.006). There were no differences in the rates of post-operative thromboembolic events, blood transfusion, or re-operation.

Conclusion: Patients undergoing concomitant appendectomy at the time of benign gynecologic laparoscopic surgery have increased risk of postoperative sepsis and hospital re-admission. Additional studies may be conducted to identify patients with optimal risk-benefit profiles when considering concomitant appendectomy.

7547 Opioid-Sparing Versus Standard Postoperative Pain Regimen for Total Laparoscopic Hysterectomy: A Randomized Controlled Trial

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Study Objective: This study investigated whether ICE-T, a multimodal opioid-sparing pain regimen using ice packs, acetaminophen (Tylenol), and ketorolac (Toradol) provided effective postoperative pain management compared with a standard pain regimen for total laparoscopic hysterectomy (TLH).
Design: This randomized controlled trial was designed to achieve over 90% power. Patients who underwent TLH were randomized to the ICE-T or standard pain regimen and outcomes were followed until postoperative day 4.
Setting: Intra-operatively patients were in dorsal lithotomy and Trendelenburg position.
Patients or Participants: Patients undergoing TLH for benign indications at the academic center from August 2019 until June 2021 were assessed for eligibility. Sixty-seven patients were enrolled preoperatively; 36 were randomized to the ICE-T regimen and 31 to the standard regimen.
Interventions: The ICE-T regimen prescribed around-the-clock ice-packs, acetaminophen and ketorolac. The standard protocol prescribed as needed ibuprofen and acetaminophen/oxycodone based on pain score. Both regimens included hydromorphone for breakthrough pain. These regimens were used inpatient and outpatient from post-anesthesia care unit discharge onwards.
Measurements and Main Results: Postoperative day 1 and 4 outcomes were evaluated using visual analog scales, validated Quality of Recovery Questionnaires, patient satisfaction scores, inpatient narcotic consumption and outpatient pain medication consumption. Patient and surgical demographics were evenly distributed. The median visual analog score and quality of recovery scores on postoperative day 1 were not significantly different; p=0.44 and p=0.85 respectively. However, the ICE-T arm median narcotic consumption on postoperative day 1 was significantly lower; 480.6 morphine milligram equivalents (MME) versus 619.2 MME, p=0.02. ICE-T arm postoperative day 4 median visual analog scores were also significantly lower in the per-protocol analysis (p=0.014). There were no significant differences in the postoperative day 4 median quality of recovery or satisfaction scores.
Conclusion: The ICE-T regimen is an effective multimodal opioid-sparing postoperative pain regimen for TLH. ICE-T has comparable pain control and patient satisfaction to the standard regimen while significantly decreasing narcotic consumption.

7548 "Second Parts Were Never Good:" Early Repeated Deep Infiltrating Endometriosis Surgery for Persistent Dyschezia

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Study Objective: To raise awareness of how complicated second and subsequent surgeries for deep infiltrating endometriosis are. To emphasize the relevance of good quality preoperative imaging when planning the first surgery for suspected DIE.
Design: Observational cohort study.
Setting: Single institution, Single-center endometriosis unit.
Patients or Participants: Five consecutive patients referred for persistent dyschezia after recent DIE surgery and postoperative hormonal support treatment with Dienogest.
Interventions: DIE imaging study protocol and second surgery by Endometriosis unit Surgical team.
Measurements and Main Results: Patients age ranged from 36 to 41 years. All 5 patients had previous DIE surgery within 12 months of referral/consultation in our unit. All patients presented with persistent dyschezia as their main complaint. Only one patient declared fertility desire. Previous surgical procedures included pelvic adhesiolysis (5), rectal shaving (3), subtotal hysterectomy (1), rectal segmental resection (1), unilateral adnexectomy (1) and unilateral oophorectomy. Imaging studies (Ultrasound Endometriosis systematic mapping protocol and pelvic contrasted MRI) depicted gross rectal nodules (1,5-4,5 cm), all of which had transmural rectal infiltration with variable distance to the anal verge (11-6 cm). All surgical procedures included rectal resection (2 discoid, 3 segmental), with 1 patient requiring a protective ileostomy. Operative time ranged from 150 to 210 minutes. All patients were discharged between 3-5 days. Follow up after surgery (8-20 months) show no late complications and no dyschezia recurrence.
Conclusion: An incomplete surgical excision of DIE rectal nodules can result in persistent dyschezia and prompt the need for further complex surgical procedures. We believe the first surgery for DIE should be preceded by an exhaustive clinical and imaging workup to plan an adequate personalized surgical procedure.

7553 Laparoscopic Management of Rectal Prolapse

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Study Objective: to study surgical management aspect of rectal prolapse.
Design: It's a single case study.
Setting: Laparoscopic mesh rectopexy performed in a hospital located in rural place.
Patients or Participants: 1.
Interventions: Laparoscopic mesh rectopexy.
Measurements and Main Results: Follow up till 1 year post surgery. Complete relief from symptoms and no fresh complaints.
Conclusion: Rectal prolapse management by laparoscopic anterior mesh rectopexy may also be domain of gynaecologic laparoscopic surgeons if one is competent.

7554 Pneumoliner Containment System Using Power Morcellation: Case Report of Two Unexpected Uterine Malignancies

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Study Objective: Few reports have documented the outcomes of uterine malignancies after power morcellation in a containment system. Here we describe two cases of an unexpected fibroid malignancy (Leiomyosarcoma and STUMP tumor) that was morcellated in a contained tissue extraction system.
Design: Case study.
Setting: University Hospital.
Patients or Participants: We present two cases: 35-year-old African American female with secondary dysmenorrhea and uterine fibroids and a 37-year-old Hispanic female with Abnormal Uterine Bleeding and uterine fibroids.
Interventions: Electromechanical morcellation (LINA) was introduced into a large containment system (PneumoLiner) during Laparoscopic tissue extraction.
Measurements and Main Results: The first case describes a 35-year-old patient that underwent a laparoscopic myomectomy for an intramural fibroid (8 cm) that was removed via power morcellation in a containment system. The pathology documented a multifocal Leiomyosarcoma within the Leiomyoma with a grossly intact bag. Two months after her myomectomy procedure, the patient underwent a Total Laparoscopic Hysterectomy and pathology confirmed no evidence of uterine malignancy with negative peritoneal washings. The second case describes a 37-year-old Hispanic female that underwent a laparoscopic myomectomy for multiple uterine fibroids (removal of 9 fibroids) that was removed via power morcellation in a containment system with a grossly intact bag. The patient underwent a Total Laparoscopic Hysterectomy 12 weeks after her myomectomy. Her final pathology confirmed a STUMP tumor, and the post-operative staging was negative. In both cases, the containment tissue extraction system was evaluated intraoperatively for bag rupture with a water-seal leak test and also sent to pathology for gross inspection.
Conclusion: The diagnosis of an unsuspected fibroid malignancy after a myomectomy is very rare, however may result in a worse prognosis if morcellated in an uncontained fashion. We report 2 cases of contained morcellation with fibroid malignancy with a 1-year follow-up.

7563 Association between Race and Utilization of Hysterectomy and Non-Hysterectomy Surgeries for Endometriosis

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Study Objective: To evaluate the association between race and self-reported prevalence of hysterectomy and non-hysterectomy surgeries for endometriosis treatment.
Design: This cross-sectional study used data from the National Survey of Family Growth (NSFG). The main study outcome was self-reported receipt of hysterectomy and non-hysterectomy surgeries for endometriosis. Multivariable logistic regression estimated adjusted prevalence odds ratios (aPOR) and 95% confidence intervals (CI). Differences in social determinants of health (SDH) among women who did and did not receive non-hysterectomy endometriosis surgery were tested using Rao-Scott chi-square analysis.
Setting: Data from the 2017-2019 NSFG cycle was collected from participants throughout the United States via in-person interviews and self-administered questionnaires.
Patients or Participants: This study included persons who identify as female, ages 15-49 years, who reported receiving a diagnosis of endometriosis by a healthcare provider.
Interventions: The main exposure was race, stratified by Non-Hispanic White, Non-Hispanic Black, Hispanic and other.
Measurements and Main Results: Of 6,141 survey participants, 314 (5.11%) answered yes to ever being diagnosed with endometriosis. Among women with endometriosis, there was no statistically significant difference in age, parity, history of PID and insurance status by race. Although there were no statistically significant differences in the odds of having a hysterectomy for endometriosis when stratified by race, Black women had a significantly lower odds of having non-hysterectomy endometriosis surgery compared to White women (aPOR=0.22, 95% CI 0.06, 0.77). The analysis of SDH revealed a lower prevalence of poverty among women who received non-hysterectomy endometriosis surgery (p=0.0041). However, including this variable in the logistic regression model did not change the findings.
Conclusion: White women have over four times higher odds of receiving non-hysterectomy endometriosis surgery compared to Black women in our full adjusted model, which cannot be explained by a secondary analysis of SDH. Further examination of factors that may influence decisions for non-hysterectomy surgery for endometriosis is warranted to better understand disparities in care.

7572 Bladder Endometriosis: Robotic Surgery with 2 Low Accessory Ports - Two Case Reports

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Study Objective: To show the diagnosis and safe robotic surgical approach of two cases of vesical endometriosis using only 2 low accessory ports
Design: A presentation of the surgical approach of two clinical cases, with narrated video footage.
Setting: Patient is placed in the semi-gynecological position. Robotic side docking set for left lateral pelvic using da Vinci Si platform.
Patients or Participants: The first case is a 37-year-old patient, nulligest, complaining of increased urinary frequency and urinary urgency with worsening of the menstrual period, who presented, on physical examination, a palpable 2cm nodule in the anterior vaginal wall. Nuclear magnetic resonance (MRI) confirmed a solid nodule in the midline of the posterior wall of the bladder, measuring $2 \times 1.5 \times 1.8$ cm. The second case is a 37-year-old woman, nulligest, complaining of dysmenorrhea, chronic pelvic pain and infertility, refractory to clinical and surgical treatment for endometriosis. The MRI showed a solid hypoechoic nodule on the left posterior wall of the bladder dome, infiltrating the detrusor muscle, measuring 2.5×2.1 cm, without involvement of the bladder trigone.
Interventions: Two partial cystectomies performed entirely by robotic surgery for the treatment of vesical endometriosis using only two accessory punctures of 8mm with good surgical performance, less invasive and with better aesthetic results for the patient. In addition, urethral extraction can be a possibility to optimize surgical time and avoid widening the incisions.
Measurements and Main Results: The patients were discharged early, showing good clinical evolution, with excellent aesthetic results.
Conclusion: We can conclude that robotic surgery for bladder endometriosis with only two low accessory punctures is possible, being less invasive and aesthetically better for the patient. In addition, minimal resection of the bladder tissue must be sought and the trigone preserved to avoid damage to the nerves.

7578 Hysterectomy with or without Oophorectomy for Transgender Male Patients: Preoperative and Intraoperative Considerations

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Study Objective: To review the preoperative and intraoperative considerations for gynecologic surgeons when performing hysterectomy with or without oophorectomy for transgender male patients.
Design: Stepwise demonstration of techniques with narrated video footage.
Setting: Approximately 0.3% of hysterectomies performed annually in the U.S. are for transgender male patients, most commonly to alleviate gender dysphoria. A hysterectomy with or without oophorectomy can be offered to patients who have met criteria outlined by the World Professional Association for Transgender Health (WPATH) guidelines.
Patients or Participants: Transgender male patients seeking hysterectomy with or without oophorectomy.
Interventions: Important perioperative counseling points for transgender male patients include:

- Establishing terminology to minimize gender dysphoria
- Discussing options for fertility preservation
- Discussing the importance of continuing testosterone therapy post-oophorectomy to reduce the loss of bone density
- Reviewing intraoperative and postoperative expectations

Important intraoperative considerations for the performance of safe and effective hysterectomy with or without oophorectomy for transgender male patients include:

- Maintaining a margin of at least 2 cm between the surgical instrument and the ovary during coagulation and transection of the infundibulopelvic ligament to prevent ovarian remnant syndrome
- Performance of a two-layer vaginal cuff closure to reduce the risk of vaginal cuff complications

Measurements and Main Results: The patients recovered well without any postoperative complications.
Conclusion: In conclusion, it is essential to minimize the patient's experience of gender dysphoria by providing gender-affirming care before, during and after surgery. In particular, the surgeon should take care to perform oophorectomy with an adequate margin to minimize the risk of ovarian remnant syndrome and use a two-layer laparoscopic vaginal cuff closure to decrease the risk of vaginal cuff complications.

7585 A Systematic Approach to Endometriosis Lesion Mapping and Radical Excision

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Study Objective: To illustrate a systematic approach to laparoscopic endometriosis lesion mapping and radical wide field excision. Significant variation exists regarding the optimal approach to surgical management of endometriosis with attempts for standardization being fairly recent. We hereby contribute to these efforts by presenting our approach to radical, wide-field endometriosis excision in our institution.
Design: Edited surgical video demonstrating laparoscopic radical wide field endometriosis excision.
Setting: Academically affiliated community hospital.
Patients or Participants: Surgical videos of multiple surgical cases from our practice
Interventions: Laparoscopic radical wide field excision of endometriosiss.
Measurements and Main Results: As illustrated in this video, important considerations are the non-contact, mm by mm dissection along the avascular planes, use of the perirectal tissue fat as an insulator and landmark for dissection, as well as the deliberate use of rectal and vaginal probes in order to delineate anatomy and optimize dissection geometry.
Conclusion: With a systematic approach to radical wide field excision of endometriosis, both in high and low ASRM stage disease, via a lateral to medial approach and clockwise progression from the left pelvic brim to the left pelvic sidewall and so on, virtually all cases will be completed safely and efficiently.

7600 Identifying Risk Factors for Adhesion Formation in the Left Upper Quadrant - Preliminary Findings of a Prospective Study

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Study Objective: To identify risk factors for development of adhesions in the left upper quadrant (LUQ).
Design: Multi-site, prospective study approved by each institution's local institutional review board.
Setting: Two large academic tertiary referral centers.
Patients or Participants: All laparoscopic cases performed by study staff on adult patients were eligible. Cases were performed per standard protocol with entry approach and location per surgeon preference. Intraoperative photo documentation of four abdominal quadrants was obtained at the onset of each case, and additional areas as indicated. A data collection form was completed after each case to capture data on adhesiogenic events (such as prior surgeries, infections, endometriosis, radiation), time spent for adhesiolysis, route of entry, location and grade of adhesions, if present.
Interventions: No interventions were included in this study. The primary outcome of this study is the presence and severity of adhesions identified in the LUQ at the time of laparoscopy for benign gynecologic disease.
Measurements and Main Results: We present interval findings from study onset in 2019 until February 2022. A total of 520 laparoscopic cases have been collected, with an overall adhesion incidence of 59.4%. The overall incidence of adhesions present in the LUQ was 1.9%. Among patients with a history of gastric banding, sleeve gastrectomy, and Roux-en-Y bypass (n=24), there were 2 cases with adhesions in the LUQ (8.3%); one with filmy adhesions and one with dense cohesive adhesions between bowel and the anterior abdominal wall. These two patients had prior open gastric bypass and open gastric bypass revision with colectomy. No visceral or vascular injuries were noted when LUQ entry was performed.
Conclusion: Our early data suggests that the overall rate of adhesions in the LUQ is low, especially with prior laparoscopic gastric procedures. While a history of gastric surgery should not preclude abdominal entry in the LUQ, vigilance is important to avoid inadvertent injury to underlying structures.

7606 Prospective Study Investigating Change in Carboxyhemoglobin Blood Level during Operative Hysteroscopy

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Study Objective: Evaluate whether the use of radiofrequency energy during operative hysteroscopy leads to increases in patient blood levels of carboxyhemoglobin and to investigate procedural variables associated with these elevations.
Design: A cross-sectional study of 40 patients undergoing a hysteroscopic procedure using bipolar radiofrequency energy.
Setting: Ambulatory surgery center
Patients or Participants: Procedures for uterine leiomyoma, septa, products of conception, or a combination of these pathologies were included. Blood carboxyhemoglobin (COHb) levels were measured prior to and after surgery. Abnormal post-op carboxyhemoglobin level was defined as an increase of plasma carboxyhemoglobin $\geq$ 3.0%. All patients with abnormal post-operative levels were contacted and screened for carbon monoxide toxicity symptoms. No additional follow-up was conducted.
Interventions: Operative hysteroscopy was performed per standard protocol and the COHb blood levels were measured as described above. No additional interventions occurred.
Measurements and Main Results: 17.5% of patients met the criteria for abnormal post-op COHb levels. None of these patients reported symptoms of carbon monoxide toxicity. One patient with an elevated post-op COHb level had intra-operative hemodynamic changes. Summary statistics included frequency for categorical variables and averages for continuous variables. An abnormal postop COHb level was associated with a higher fluid deficit (p-value 0.024) and greater fibroid volume (p-value 0.04).
Conclusion: This study demonstrates that systemic absorption of carbon monoxide is a reproducible phenomenon in hysteroscopic resections using bipolar diathermy. Greater absorption is associated with a higher fluid deficit and greater fibroid volume. Although none of the patients with an abnormal increase screened positive for symptoms in the post-op setting and only one experienced hemodynamic changes intra-operatively, our study looked at a healthy and young patient population. More research is needed on the safety of this COHb exposure in patients with medical comorbidities. Special consideration should be given to the possibility of carbon monoxide absorption and the uncertain long-term effects when planning extensive resections.

7633 Laparoscopic Myomectomy: When and How?

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Study Objective: The objective of the video will be to review common fibroid symptoms, and diagnostic modalities that assist with surgical planning. A technique for laparoscopic myomectomy approach with the use of methylene blue will be reviewed.
Design: During this 6-minute video we will review fibroid symptoms including its effects on assisted reproductive technology. This video will review preoperative imaging and its assistance in surgical approach planning. Finally, it will focus on a 5-step surgical video tutorial of a laparoscopic myomectomy technique with methylene blue to assist with endometrial cavity identification. The presentation will end with concluding remarks.
Setting: Surgical management of fibroids.
Patients or Participants: Female's with symptomatic fibroids.
Interventions: Laparoscopic Myomectomy.
Measurements and Main Results: N/A.
Conclusion: Fibroids are a common female problem. Surgical management of fibroids should be considered if symptomatic i.e., pelvic pain, heavy vaginal bleeding or infertility issues secondary to endometrial cavity deforming fibroids. Usage of methylene blue throughout the laparoscopic myomectomy assists with assessing cavity integrity and decreasing the risk of intrauterine adhesions.

7643 Use of Augmented Reality Training to Improve Laparoscopic Vaginal Vault Closure Metrics

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Study Objective: To assess the impact of Augmented Reality Training on improving Laparoscopic Vaginal Vault Closure using objective performance metrics.
Design: Utilising the LapAR by Inovus Medical Ltd (UK), we asked Obstetrics and Gynecology trainees to perform several Augmented Reality simulated vaginal-vault closures interspersed with LapPass (UK equivalent of FLS) tasks. Objective metrics measured includes: time to completion, distance travelled, smoothness, acceleration, handedness and time in view. Comparison was made with a benchmark score set by an experienced MIGS surgeon. Subjective performance feedback was also provided by experienced MIGS surgeons using the OSATS framework.
Setting: Within an NHS (National Health Service) University Teaching hospital in South London.
Patients or Participants: Obstetrics and Gynecology junior trainees (SHO's and registrars) - US equivalent of residents and fellows.
Interventions: During the course, benchmarks of both LapPass tasks and Vaginal Vault closures were set by each trainee in addition to an experienced MIGS surgeon. Trainees were then asked to perform a series of tasks including further Vaginal Vault closures and LapPass tasks. Following this period of intervention, trainees were set one final benchmark to compare to their original.
Measurements and Main Results: We found that the performance metrics improved when comparing initial & final benchmarks. In addition, the final benchmark metrics of the trainees were compared in a standardisation exercise to the benchmark set by the experienced MIGS surgeon. Of note, time to completion and distance travelled were both markedly reduced following the intervention period. OSAT based review of performance demonstrated a marked improvement in surgical skill.
Conclusion: Augmented Reality task training using a high-fidelity Laparoscopic box trainer such as the LapAR improves objective and subjective performance in vaginal vault closure. It can be inferred that this technique improves the surgical learning curve whilst safely taking it away from the live patient.

7675 Tri-Topic Pregnancy: A Case of Spontaneous Triplets in Three Distinct Locations

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Study Objective: To present a case of spontaneous triplet pregnancy consisting of a single intra-uterine pregnancy and two distinct ectopic pregnancies and review the literature regarding interstitial pregnancy management.
Design: Case report.
Setting: Tertiary care hospital.
Patients or Participants: One patient.
Interventions: 29-y/o G3P2002 at approximately seven weeks gestational age by LMP with history significant for two prior full-term cesarean sections presented to the emergency department with severe, sudden onset abdominal pain. Beta-HCG was greater than 200,000. Bedside transabdominal ultrasound was limited by degree of pain; however, it revealed a fetal pole measuring eight weeks with cardiac activity surrounded by a sizable layer of myometrium, as well as an additional fetal pole with cardiac activity laterally with a thin surrounding layer of myometrium. Given severe pain in early pregnancy, ruptured ectopic pregnancy was presumed and the patient was consented for a diagnostic laparoscopy and removal of ectopic pregnancy. Intraoperatively, approximately 500cc of hemoperitoneum and both an interstitial pregnancy and an ampullary pregnancy were appreciated. Laparoscopic unilateral salpingectomy and cornuectomy were performed. Ultrasound postoperatively surprisingly demonstrated a third remaining viable intrauterine pregnancy. The patient denied any history of ART.
Measurements and Main Results: Pathology confirmed ectopic pregnancies in both specimens. Laparoscopic excision of two ectopic pregnancies was safely performed in this patient with maintenance of a viable, intrauterine pregnancy. Excision of the interstitial pregnancy posed greatest risk to both the patient and concurrent intrauterine pregnancy. Care was taken during cornuectomy to minimize entry depth into surrounding myometrium and blood loss.
Conclusion: The incidence of heterotopic pregnancy without ART is approximately 1 in 30,000. Furthermore, interstitial pregnancies make up only 1-4% of ectopic pregnancies. Laparoscopic management of interstitial pregnancies has been repeatedly demonstrated as a safe approach. We present a rare case of a ruptured triplet heterotopic pregnancy with minimal risk factors managed successfully with laparoscopic removal technique and maintenance of intrauterine pregnancy.

7676 Association between BMI and Race and Positive Pathological Confirmation of Endometriosis Lesions

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Study Objective: To compare the association between BMI and race and the pathologically confirmed positivity rate of endometriosis lesions.
Design: Retrospective cohort study.
Setting: University teaching hospital.
Patients or Participants: All women above 18 years-old who underwent laparoscopic surgery for endometriosis at tertiary care hospital from October 2011 to October 2020 were screened for inclusion. Patients who underwent open surgery or whose primary indication for surgery was not endometriosis were excluded. Procedures performed by non-gynecologic surgeons were also excluded. A total of 401 patients were included in the study. BMI was defined by WHO standards with race categorization obtained from previously available demographic data.
Interventions: N/A.
Measurements and Main Results: Patients were classified as having reached or not having reached 80% positivity in pathological confirmation of endometriosis lesions. Chi-square and Fisher's exact tests were used to assess statistically significant differences. Among patients of white race (n=266), 74.1% reached an 80% positivity rate, compared to 70.9% and 50% in the African American and Hispanic patient groups, respectively (p=0.04).
A total of 147 (36.7%) patients comprised the normal BMI subgroup, of which 68.7% reached 80% positivity rate. In comparison, the percentage of overweight and obese women who reached 80% positivity rate were 74.5% and 74.1% respectively (p=0.72). Among patients with preoperative diagnosis of adenomyosis, 68.2% had 80% or more pathological positivity rate compared 72.8% of patients without adenomyosis. (p=0.52).
Conclusion: In this retrospective study, statistically significant racial disparities were still found in regards to pathological positivity rate for endometriosis. Future prospective studies are needed to further investigate this finding. BMI subgroups or adenomyosis diagnosis did not show any significant differences in positivity rate.

7690 Association between Prior Surgery and Concomitant Conditions and Positive Pathological Confirmation of Endometriosis Lesions

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Study Objective: To compare the association between prior surgical intervention and concomitant conditions and pathologically confirmed positivity rate of endometriosis lesions.
Design: Retrospective cohort study.
Setting: University teaching hospital.
Patients or Participants: All women above 18 years-old who underwent laparoscopic surgery for endometriosis at a tertiary care hospital from October 2011 to October 2020 were screened for inclusion. Patients who underwent open surgery or whose primary indication for surgery was not endometriosis were excluded. Procedures performed by non-gynecologic surgeons were also excluded. A total of 401 cases were included in this study. Patients were classified according to whether prior surgery for endometriosis or prior hysterectomy was done, concurrent hysterectomy or bilateral oophorectomy were performed, and whether fibroids and adenomyosis were diagnosed. To examine differences in positivity rates of endometriosis lesions, patients were classified as having reached or not having reached 80% positivity in pathological confirmation. Chi-square and Fisher's exact tests were used to assess statistically significant differences.
Interventions: N/A.
Measurements and Main Results: The percentage of patients reaching 80% positivity on pathological confirmed endometriosis was lower in women who had undergone previous laparoscopy for endometriosis

compared to surgery naïve women, 66.5% vs 76.5% respectively, (p=0.03). Additionally, a higher percentage of women who underwent concomitant hysterectomy (83.5% vs 68.8% for non-hysterectomy, p=0.005) or bilateral oophorectomy (92.7% vs 70.0% for non-oophorectomy, p=0.002) achieved 80% positivity. Although women who had an associated diagnosis of fibroids (79.7% vs 70.5%) or adenomyosis (76.4% vs 71.7%) were more likely to reach 80% positivity compared to undiagnosed women, these differences were not statistically significant (p>0.05).
Conclusion: Prior laparoscopic surgery for endometriosis might cause tissue changes that decrease the pathological positivity rate of endometriosis lesions. This is beneficial when discussing post-operative findings and pathological results with patients.

7692 An Approach to Imaging and Surgical Excision of Abdominal Wall Endometriosis

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Study Objective: To demonstrate an approach to the imaging and surgical management of abdominal wall endometriosis (AWE) including the surgical repair of abdominal wall defects.
Design: Video case presentation.
Setting: Pre-operative imaging suite and operating room.
Patients or Participants: To illustrate our approach, we present two surgical cases. The first is of a patient who was referred with catamenial pain in the left lower abdominal wall. She has a history of 2 previous cesarean sections and a lesion, consistent with abdominal wall endometriosis was demonstrated on ultrasound, adjacent to her previous cesarean section scar. The second case is a patient with peri-umbilical abdominal wall endometriosis.
Interventions: In both cases, we demonstrate our technique for resection of abdominal wall endometriosis. We discuss a 3-step approach: 1. Landmarking and incision making 2. Dissection and excision 3. Fascial repair. Larger fascial defects may require fascial mobilization off surrounding tissue to allow for a tension-free closure or mesh placement in the abdominal wall. These techniques may be performed together in consultation with a general surgeon and are further described within this video.
Measurements and Main Results: Pre-operative ultrasound accurately predicted abdominal wall endometriosis and surgical excision results in symptom relief.
Conclusion: Ultrasound is the first line diagnostic test to confirm clinical suspicion of abdominal wall endometriosis. MRI can be used to further characterize lesion extent and structures involved. Surgical excision of abdominal wall endometriosis can be safely performed by the gynecologic surgeon in conjunction with general surgery if resection results in a large abdominal wall defect.

7693 Deep Infiltrating Endometriosis: Laparoscopic Treatment with Discal Resection

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Study Objective: To show how deep intestinal endometriosis can be managed safely and effectively with laparoscopic discoid resection.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: The surgical management of deep endometriosis infiltrating the rectum employs either colorectal segmental resection or conservative techniques, i.e., shaving and discoid resection. When the nodule measures less than 3 cm in diameter, the discoid resection is applicable as an alternative to segmental colorectal resection. For surgery, the patient was placed in a dorsal modified lithotomy position. The surgeon was on the patient's left side, the first assistant on the right, and the second assistant between the patient's legs.
Patients or Participants: A 32-year-old patient presented to our center with dysmenorrhea, dyspareunia, dyschezia and chronic pelvic pain. On physical examination, in the pouch of Douglas, a painful nodule of approximately 2 cm was palpable, involving the left uterosacral ligament. In the MRI, it can be observed in the sagittal section T2 a hypointense nodule that obliterates the pouch of Douglas and involves the anterior wall of the rectum. The nodule contacts with the anterior wall of the rectum with a 27 mm expansion and a 9 mm maximal invasion. The distance between the nodule and the anal margin is 8 cm.
Interventions: Laparoscopic approach with discal resection to treat deep infiltrating endometriosis. Step-by-step demonstration of the surgery with the key points through a narrated video.
Measurements and Main Results: Patient evolves favorably in post operative care. Hospital discharge is given 48hs after the intervention. At 6-month follow-up, the patient reported resolution of all initial symptoms.
Conclusion: Discoid resection is an effective and safe alternative for trained surgeons with the aim of better preserving rectal function and reducing the risk of low anterior rectal resection syndrome that can be generated with bowel resection.

7709 Tips and Tricks for Vaginal Hysterectomy

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Study Objective: The objective of this video is to review surgical techniques and tips for vaginal hysterectomy to improve provider confidence and serve as an educational tool.
Design: Audio narration, still images, and surgical footage will be used to review difficult scenarios and present an evidence-based approach to troubleshoot common issues.
Setting: Video footage was filmed with patients in dorsal lithotomy positioning in the operating room.
Patients or Participants: Patients with varying degrees of pelvic organ prolapse, ranging from stage 0-IV on POP-Q (Pelvic Organ Prolapse Quantification), were filmed during vaginal hysterectomy for heavy menstrual bleeding or prolapse repair.
Interventions: This video will review four common difficulties faced during vaginal hysterectomy: patient selection, the colpotomy, vaginal salpingectomy, and laparoscopically assisted vaginal hysterectomy.
Measurements and Main Results: This video discusses how to select candidates for vaginal hysterectomy including commonly misquoted contraindications. An approach, using the physical exam as guidance, is given for the anterior and posterior colpotomy and video footage is used to review how to troubleshoot the anterior entry. Steps to improve

visualization for vaginal salpingectomy are discussed. Finally, laparoscopically assisted vaginal hysterectomy and how to divide the case between laparoscopic and vaginal approaches is reviewed to optimize success in the operating room.
Conclusion: This video reviews important steps of vaginal hysterectomy and provides tips to improve surgeon confidence. It can serve as an educational resource for trainees and early-career surgeons to improve their knowledge and confidence in performing vaginal hysterectomy. These types of resources are important to counter declining rates of vaginal hysterectomy and decreasing provider comfort in performing this operation.

7722 Improved Safety Awareness and Intraoperative Complication Reduction after Implementation of Artificial Intelligence in Hysterectomies

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Study Objective: To perform an in-depth analysis of safety awareness, operative times and complications in laparoscopic hysterectomies after the integration of a surgical artificial intelligence (AI)-powered platform to all our endoscopic procedures.
Design: Cross-sectional study.
Setting: Gynecological department in a tertiary hospital with an average of 6500 procedures a year.
Patients or Participants: All laparoscopic hysterectomies during a 4-month period before and 4 months after the implementation of a surgical AI platform.
Interventions: Integration of an AI-powered surgical platform that utilizes advanced computer vision technology to routinely capture all surgical video data, de-identify it and upload it to a secure cloud-infrastructure. Procedures were automatically annotated with all surgical steps, intraoperative events and key safety milestones.
Measurements and Main Results: we recorded and quantifies safety milestone (view of both ureters) as well as procedure length, intraoperative events (significant or notable hemorrhage, parenchymal injury, pus spillage, lesion contents spillage in all procedures before and after the implementation of the platform. A total of 82 patients were included, 40 cases before and 42 cases after the intervention.
Conclusion: Using endoscopic vision-based AI, we were able to improve our performance in terms of safety milestones and intraoperative events. The implementation of such a system holds enormous promise for future surgical education and improvement.

Characteristics	Before routine review of surgical intelligence platform implementation (n=40)	After routine review of surgical intelligence platform implementation (n=42)	P-value	Trend
Safety milestone achievement % (# of procedures)	43% (17)	67% (28)	0.03	+56%
Surgical procedure duration (median, minutes)	100	87	0.34	-13%
Intraoperative events average (sum of events)	0.45 (18)	0.21 (9)	0.18	-53%
Significant hemorrhage average (sum)	0.075 (3)	0.095 (4)	-	+27%
Notable hemorrhage average (sum)	0.075 (3)	0.024 (1)	-	-68%
Parenchymal injury repair average (sum)	0	0.024 (1)	-	
Pus spillage average (sum)	0	0.024 (1)	-	
Lesion content spillage average (sum)	0.3 (12)	0.048 (2)	-	-84%

7723 Adverse Events Using Advanced Sealing Devices during Vaginal Hysterectomy: An Analysis of the Maude Database

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Study Objective: To identify visceral injuries associated with the use of advanced sealing devices at the time of vaginal hysterectomy.
Design: Retrospective review.
Setting: Analysis of the Manufacturer and User Facility Device Experience (MAUDE) database for reported visceral injuries from 11/1/1990 – 11/1/2021.
Patients or Participants: MAUDE was queried for the Brand Name 'LigaSure Impact' and 'ENSEAL x1' and Event Type 'Injury' associated with vaginal hysterectomy. Two individuals independently reviewed events identified.
Interventions: N/A.
Measurements and Main Results: A total of 102 events were recorded. Following removal of duplicate entries, there were a total of 92 reports of injury [LigaSure Impact n=50, ENSEAL x1 n=42]. Of these reports, 29 were during hysterectomy of all types [LigaSure Impact: 11/50 (22%), ENSEAL x1: 18/42 (43%)], of which 9 were during vaginal hysterectomy [LigaSure Impact: 4/11 (36%), ENSEAL x1: 5/18 (28%)] including 2 thermal skin injuries, 1 ureteral injury, 1 bladder injury and 5 unspecified injuries attributed to device malfunction. No bowel injuries were identified.
Conclusion: Thermal injury is a rare but important complication associated with use of advanced sealing devices during vaginal hysterectomy. Vaginal surgeons must be aware of this potential adverse outcome and remain vigilant in preventing it.

7728 Pregnancy Outcomes after Transcervical Fibroid Ablation (TFA) with the Sonata® System

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Study Objective: To describe pregnancy outcomes in women who conceived after undergoing transcervical fibroid ablation (TFA) as treatment for symptomatic uterine fibroids.
Design: Retrospective study.
Setting: Hospitals in Europe, the UK, Mexico and the US.
Patients or Participants: Women who reported pregnancies after undergoing TFA with the Sonata® System.
Interventions: TFA was used to ablate fibroids, both under clinical trial protocol and commercial usage.
Measurements and Main Results: To date, there have been 43 pregnancies representing 25 deliveries among 35 women who were treated with TFA. Five women conceived more than once post-ablation, and four conceived through assisted reproductive technology (ART). Outcomes include 10 vaginal deliveries, 15 Cesarean sections, 4 therapeutic abortions, and 8 first-trimester pregnancy losses. Of the 8 miscarriages, four occurred in a patient with a history of recurrent abortion and an immunologic disorder and she subsequently had a delivery at term. Six women are currently pregnant. All 5-minute Apgar scores were >7 and all neonates weighed >2500 gms. Deliveries occurred at ≥37 weeks, except for one delivery at 35 6/7 weeks. There were no uterine ruptures or abnormal placentation and no reports of postpartum hemorrhage. Cesarean sections were performed for standard obstetric indications, including non-reassuring fetal monitoring in a patient with HELLP syndrome, fetal macrosomia, dystocia and patient choice. On average, 1.4 fibroids were ablated per patient, and these

included transmural, submucous and intramural myomata up to 7 cm in diameter.

Conclusion: Normal pregnancy outcomes at term have occurred after TFA with the Sonata System, including in women with recurrent abortion and in those undergoing ART.

7736 Transcatheter Drainage and Ethanol Sclerotherapy for Treatment of Symptomatic Endometriomas: A Case Series

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Study Objective: To investigate the efficacy of ethanol sclerotherapy for endometriomas as either pre-operative adjuvant therapy to facilitate minimally invasive surgery or as definitive treatment.

Design: This is a case series of 15 patients treated from 2010-2022 who presented with endometriomas causing bulk symptoms and pain. We reviewed pre-procedure imaging, surgical history, procedural findings, post-procedure treatment course and symptom changes, and most recent interval imaging if available.

Setting: Multidisciplinary academic complex gynecology center with multimodal imaging guidance.

Patients or Participants: Patient age range was 21-61 years. Five patients had a history of surgical resection for endometriomas. All patients had endometriomas diagnosed with CT or MR and associated symptoms including bulk and pain.

Interventions: Patients underwent image-guided transabdominal, transvaginal, or transgluteal catheter drainage of their endometriomas. The endometrioma was completely evacuated and contrast study was performed to determine cavity volume (for ethanol injection) and complete emptying of the cavity. Ethanol 100% was instilled two times with a dwell time of 5-7 minutes each and then evacuated. The median total volume of alcohol instilled was 100 cc (range 55-600 cc). The drain was usually left in place; patients returned at 24-96 hours for repeat contrast study and a third ethanol injection followed by catheter removal.

Measurements and Main Results: The median volume of endometriotic material drained was 200 cc (range 30-2000 cc). All patients reported symptomatic improvement immediately following the procedure. Interval imaging was available for 11 patients (interval length range 32-837 days) with an average reduction in volume of 83.5% (range 53.2%-100%). 6 patients underwent subsequent surgery for endometriomas. There was one complication – secondary infection requiring repeat drainage.

Conclusion: Ethanol sclerotherapy is an effective treatment for improving endometrioma symptoms and can delay or obviate the need for surgery. It should continue to be studied on a larger scale to ascertain its optimal role in endometrioma treatment.

7737 Assessment of Interoperative Transverse Abdominis Plane (TAP) Block in Minimally Invasive Gynecologic Surgery

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Study Objective: To assess whether an inter-operative transverse abdominis plane (TAP) block to provide analgesia is more effective than local anesthetic injection into trocar insertion sites during robotic gynecologic surgery.

Design: Retrospective chart review of patients undergoing robotic surgery (myomectomy, hysterectomy, and removal of endometriosis) with one surgeon between January and July 2021.

Setting: Academic hospital OR.

Patients or Participants: 109 patients underwent robotic surgery with median age (interquartile range, IQR) of 39 years (11.8) for the following indications: endometriosis (45.9%), fibroid uterus (50.5%), and other (3.6%).

Interventions: Patients undergoing robotic surgery received local injection of anesthetic into trocar insertion sites (control group) or a TAP block.

Measurements and Main Results: Of 109 patients, 54 (49.5%) were in the control and 55 (50.5%) were in the TAP block group. No significant differences in age, BMI, diagnosis, chronic pain status or ASA classification were found between groups. Incision time and length of PACU stay were not statistically different between groups (Table 1). In terms of pain management, the first and maximum pain scores in the PACU were the same in both groups. However, the median (IQR) morphine milligram equivalents used in the PACU for the TAP block group was 17.0 (11.5) compared with 12.5 (8.9) in the control group (p=0.04).

Conclusion: Our analysis demonstrates that performing TAP block in robotic gynecologic surgery cases did not significantly lengthen surgery time or affect patient reported pain scores, however it was associated with greater use of pain medication in the acute postoperative setting.

Table 1: Outcomes by Pain Management Group

Outcome	Control Group (N=54)	TAP Block Group (N=55)	*p*-value
Incision Time (minutes)	63.0 (41.3)	68.0 (42.0)	0.5
First PACU Pain Score	6.0 (5.0)	6.0 (4.0)	0.9
Maximum PACU Pain Score	7.0 (2.0)	7.0 (2.0)	0.6
PACU Stay (minutes)	298.0 (147.3)	308.0 (152.0)	0.7
Morphine Milligram Equivalents	12.5 (8.9)	17.0 (11.5)	0.04

7754 The Impact of Physician Remuneration Incentive on Laparoscopic Hysterectomy Practice in Canada: An Interrupted Time Series Analysis

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Study Objective: To determine whether the introduction of a physician remuneration incentive within certain Canadian provinces resulted in increased practice of laparoscopic hysterectomy over time.
Design: Retrospective population-based study with interrupted time series analysis of federal health administrative data from the Canadian Institute for Health Information
Setting: Hospitals in all the provinces of Canada, excluding territories
Patients or Participants: 81,507 patients aged ≥18 years undergoing hysterectomy for benign gynecologic indication in Canada from 2006/07 to 2016/17
Interventions: Hysterectomy
Measurements and Main Results: Review of physician remuneration fee schedules for each province in Canada identified three provinces where a physician incentive (additional 25-50% remuneration) was introduced: British Columbia (BC) (2013), Saskatchewan (SK) (2012), and Prince Edward Island (PEI) (2011). During the 10-year period, the rates of laparoscopic hysterectomy increased rapidly in BC (6.0%-54.7%), SK (13.5%-66.7%), and PEI (<1.0%-36.9%) ($p<0.05$ for all trends). In SK (n=7,857 hysterectomies), there was a significant additional increase in the rate of laparoscopic hysterectomy from 40.6% to 49.4% in the quarter following the incentive ($p<0.0001$). In BC (n=16,332), there was no significant additional increase in the rate of laparoscopic surgeries after the introduction of a financial incentive. Though PEI appeared to demonstrate an increase in the rate of laparoscopic hysterectomy following the incentive, ITS analyses were not performed due to the small sample size (n=2,583).
Conclusion: The introduction of physician remuneration incentive appears to be associated with an increase in practice of laparoscopic hysterectomy in some provinces but not others. While physician incentive may help encourage minimally invasive surgical practice, the effects are likely modified by other important factors, such as operating room resources and training opportunities.

7758 The New Generation Articulated Laparoscopy in Gynecologic Surgery

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Study Objective: To discuss the advantages and disadvantages of a novel articulated laparoscopic device compared to conventional laparoscopy and to demonstrate its benefits using a simulator model.
Design: Educational video.
Setting: Laparoscopic simulator box at a simulation center.
Patients or Participants: We present a novel articulated laparoscopic instrument and our experience with the implementation of this device using a simulator box.
Interventions: The standardized Fundamental laparoscopic skill (FLS) peg transfer, tip positioning and laparoscopic suturing.
Measurements and Main Results: Conventional laparoscopy requires high skills mainly due to challenging ergonomics and a two-dimensional vision. Robotic surgery flourished as it improves precision with wristed instruments making surgical movements more intuitive and easier to master. However, limitations of robotic surgery include the absence of haptic or tactile feedback and a higher cost. Additionally, availability may be a problem in certain settings. We present a novel hand-held articulated laparoscopic device that provides haptic feedback, short set up time, and lower cost while improving precision and dexterity with wristed instruments.
Conclusion: This novel articulated laparoscopic instrument may be an option to offer minimal invasive surgery with increased dexterity at a lower cost compared with robotic surgery. This option potentially combines the benefits of conventional laparoscopy and robotic surgery. Future research is needed to determine the learning curve and operative advantages of this device.

7763 Hysteroscopic Morcellation (with Bigatti Shaver) Under Laparoscopic Guidance: A Novel Approach to Management of Caesarean Scar Pregnancy

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Study Objective: To present our experience in treating cases with caesarean scar pregnancy by hysteroscopic morcellation using Bigatti Shaver over a period of 1 year.
Design: Longitudinal prospective study for 1 year & follow up done till beta HCG level comes to normal.
Setting: Patients positioning in the OT table: Lithotomy position, 45-degree angle between OT table & patients elevated legs.
2 Endomat Select: one for irrigation & other for suction, RPM-2100, Irrigation: 200-250 ml/min, Pressure: 150mm of Hg
Patients or Participants: 10 women between age 22-35years presented to us in the OPD with caesarean scar pregnancy confirmed on their dating ultrasound.
Interventions: Pre operative investigations were done prior to surgery and under laparoscopy they were posted for surgical intervention - removal of scar pregnancy by Bigatti Shaver.
Measurements and Main Results:
- No fertility desired by the patient further, so patient should be tubectomised
- It should be done till 7 weeks of period of gestation
- Myometrial thickness should be between 2 to 4 mm

Results: 1. None had any intra or post operative complications.
2. Average duration of procedure: less than half an hour & blood loss less than 100ml.
3. Serial Beta HCG from the day of discharge and weekly therefore done, which returned to non-pregnant levels by end of 4 weeks.
Conclusion: Hysteroscopic morcellation is a convenient and effective mode of management of caesarean scar pregnancy with excellent safety profile and patient satisfaction rates.

7783 Approach to a Difficult Bladder Flap during Laparoscopic Hysterectomy

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Study Objective: Present a systematic approach to dissecting a difficult bladder flap during a laparoscopic hysterectomy.
Design: Stepwise demonstration of techniques with narrated video footage.
Setting: Cesarean section is the most commonly performed operating room procedure in the United States. Previous cesarean section significantly increases the risk of bladder and urinary tract injuries during laparoscopic hysterectomy. Long-term complications associated with bladder injury include bladder and ureteral fistulae, renal failure, infection, and death.
Patients or Participants: Patients with previous cesarean sections undergoing laparoscopic hysterectomy.
Interventions: The key principles for safe and effective dissection of a difficult bladder flap during a laparoscopic hysterectomy include:
- Use of gentle interrogative blunt dissection to identify the endopelvic fascia and creation of a tunnel inferior to the adhesions and posterior to the bladder using the low and lateral approach
- Ligation of the uterine blood supply prior to addressing the difficult bladder flap
- Backfilling the bladder to delineate its borders
- Managing any bleeding early to prevent tissue staining
- Once the uterine blood supplies are controlled, serially thinning and separating the bladder flap adhesions close to the uterine serosa and mobilize the bladder below the colpotomy cup

Measurements and Main Results: The patients recovered well without any postoperative complications.
Conclusion: C-sections can produce significant midline scarring which increases the risk of bladder injury during laparoscopic hysterectomy. Techniques to address a difficult bladder flap during laparoscopic hysterectomy include gentle interrogative blunt dissection and a low and lateral approach, backfilling the bladder, and using sharp dissection to serially thin and separate adhesions close to the uterine serosa.

7829 Ultrasound Guided Quadratus Lumborum Block for Improved Postoperative Analgesia in Minimally Invasive Gynecologic Surgery

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Study Objective: To determine whether the quadratus lumborum block (QLB) is an effective analgesic adjunct in the control of postoperative pain in the first 24 hours after minimally invasive hysterectomy.
Design: Prospective cohort observational study of women who underwent laparoscopic or robotic hysterectomy for benign indication. Patients either received a QLB or did not receive a QLB and postoperative pain scores were recorded, using the numeric rating scale. The primary outcome was the 3-hour pain score. The secondary analysis evaluated postoperative use of analgesic medication in the first 24 hours.
Setting: 1 and 3-hour postoperative pain scores were recorded in the post anesthesia recovery area. Patients were called to collect 24-hour pain scores and postoperative analgesic medication usage.
Patients or Participants: 50 patients were included in the study; 25 received a preoperative QLB and 25 patients did not receive a QLB.
Interventions: During QLB, a local anesthetic is injected under ultrasound guidance between the quadratus lumborum muscle and the thoracolumbar fascia to provide analgesia to T4 to L1 dermatomes.
Measurements and Main Results: The median postoperative pain score at 1-hour was 4/10 and 5/10 (p=0.541), 3-hour was 2/10 and 3/10 (p=0.418), and 24-hour was 6/10 and 6/10 (p=0.358) in the non-QLB and QLB groups respectively. 11 of 25 patient's vs 11 of 25 patients at 1-hour (p=1.0), 8 of 25 patients vs 18 of 25 patients at 3-hour (p=0.005), and 21 of 25 patients vs 23 of 25 patients at 24-hour (p=0.384) used any analgesia postoperatively in the non-QLB vs QLB group respectively. Evaluation of differences in the amount of postoperative pain medication used between the two groups is still pending.
Conclusion: There was no statistically significant difference between the QLB and non-QLB groups at 1, 3, and 24-hour postoperative pain scores. However, patients who received a QLB were more likely to receive pain medication 3 hours after surgery.

7830 Use of Gynesim Model for Total Laparoscopic Hysterectomy Simulation

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Study Objective: Demonstrate the utility of using Gynesim Simulator for total laparoscopic hysterectomy.
Design: The simulator was used to perform a total laparoscopic hysterectomy.
Setting: Training institution.
Patients or Participants: OB/Gyn residents.
Interventions: The simulator was used to demonstrate the total laparoscopic hysterectomy.
Measurements and Main Results: The simulator is able to be utilized to perform key steps of total laparoscopic hysterectomy.
Conclusion: The simulator is able to serve as learning tool for total laparoscopic hysterectomy.

7868 The Incidence of Endometrial Carcinoma in Patients with Atypical Endometrial Hyperplasia Versus Atypical Endometrial Polyp

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Study Objective: To compare the incidence of endometrial carcinoma following hysterectomy in patients with presurgical diagnosis of EIN (endometrial intraepithelial neoplasia) of the endometrium versus EIN confined to endometrial polyp.
Design: Retrospective cohort study.
Setting: Tertiary university-affiliated hospital.
Patients or Participants: Eighty-eight women included in the study, of those, 50 women were diagnosed with EIN confined to a polyp (endometrial polyp group) and 38 women had endometrial EIN following endometrial biopsy (non-polypoid group).

Interventions: Medical records of women who underwent staging surgery for endometrial EIN or EIN confined to a polyp between 2014 and 2020 were reviewed.
Measurements and Main Results: The mean age at diagnosis was 60.2 ± 9.9 years in the endometrial polyp group as compared to 61.7 ± 12 years in the non-polypoid group (p=0.5). Eighty-nine percent of the women in the non-polypoid group presented with abnormal uterine bleeding (post/perimenopausal) whereas 46% of the women in the endometrial polyp group were asymptomatic (p=0.001). Pathology results following hysterectomy revealed concurrent endometrial carcinoma in 26% of women in the endometrial polyp group compared to 47% of women in the non-polypoid group (p=0.001). Eighty-four percent of cancers were grade-1 in the endometrial polyp group compared to 50% in the non-polypoid group (p=0.048). Only one patient in the non-polypoid group (5.6%) had lymph node involvement.
Conclusion: Concurrent cancer is less frequent with atypical endometrial polyp as compared to atypical endometrial hyperplasia. Still, the high incidence of endometrial carcinoma in both groups supports the current advice to perform hysterectomy and bilateral salpingo-oophorectomy for peri and post-menopausal women. Our data does not support performing sentinel lymph node dissection for EIN.

7879 Complication Rates Following Total Laparoscopic Vs. Vaginal Hysterectomy in Patients with BMI ≥ 50 Kg/m^2

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Study Objective: To determine which minimally invasive hysterectomy (MIH) route is associated with the lowest risk of complication in women with BMI ≥ 50 kg/m^2.
Design: Retrospective cohort study utilizing the National Surgical Quality Improvement Program (NSQIP) database.
Setting: NSQIP participating institutions.
Patients or Participants: 5570 women with BMI ≥ 50 kg/m^2 undergoing MIH from 2014 through 2020.
Interventions: Total laparoscopic (TLH) or vaginal hysterectomy (TVH) for uterus ≤ 250 g.
Measurements and Main Results: 481 patients underwent TVH, and 5089 women underwent TLH. Women who underwent TLH were significantly older (median age 51 vs. 46 years, p<0.01), and were more likely to identify as White race (77% vs. 67%, p<0.01), have hypertension (58% vs. 47%, p<0.01), and have an ASA class ≥ III (87% vs. 73%, p<0.001).
Of patients who underwent TLH, 459/5089 (9%) experienced one or more complication within 30 days of surgery compared to 44/481 (9%) of women who underwent TVH (p=0.93). Median operative time was significantly longer for patients undergoing TLH (137 vs. 105 minutes, p<0.01), and median length of hospital stay (LOS) was identical (1 day, p=0.09). Patients undergoing TLH were more likely to develop superficial surgical site infections (SSI) (2% vs. 0%, p<0.01) but less likely to require transfusion (1% vs. 3%, p<0.01). The rates of all other individual complications were similar between the two groups.
In multivariable regression modeling adjusted for potential confounding covariates, we did not observe significant evidence that vaginal as compared to laparoscopic hysterectomy was associated with increased odds of complication (aOR 1.1, 95% CI 0.8-1.5, p=0.7).
Conclusion: Patients with BMI ≥ 50 kg/m^2 experienced hysterectomy-related complications at a higher rate than published in the general population, but the overall complications rates were similar between those undergoing TVH and TLH. In the carefully selected patient and with the appropriate surgeon skill set, both approaches are feasible for hysterectomy of the very obese patient.

7884 Laparoscopic Ovarian Transposition for Fertility Preservation

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Study Objective: To review the role of ovarian transposition in fertility preservation technologies, describe laparoscopic ovarian transposition performed for fertility preservation in a patient undergoing pelvic radiation, and to discuss the feasibility of this procedure for the general obstetrician gynecologist for cancer patients desiring fertility preservation.
Design: We present a case report of a patient who undergoes laparoscopic ovarian transposition performed for fertility preservation prior to planned pelvic radiation therapy for melanoma metastatic to the sacrum.
Setting: Ambulatory operating room setting with patient in dorsal lithotomy position.
Patients or Participants: Case report of a patient selected from our institution.
Interventions: Laparoscopic ovarian transposition affixes the ovaries out of the pelvis, preventing their irradiation during planned radiation therapy for cancers involving the pelvis.
Measurements and Main Results: A laparoscopic ovarian transposition performed for fertility preservation was successfully performed prior to planned pelvic radiation therapy.
Conclusion: Women undergoing planned pelvic radiation therapy should be offered ovarian transposition prior to starting therapy. Laparoscopic ovarian transposition is an option for fertility preservation that is within the scope of the general obstetrician gynecologist.

7889 A Delphi Consensus-Based Chronic Pelvic Pain Standardized Ultrasound Approach

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Study Objective: To develop a standardized, consensus-based international ultrasound approach for women with chronic pelvic pain (CPP) that can be applied in clinical practice.
Design: Delphi survey.
Setting: N/A.
Patients or Participants: International panel of experts in chronic pelvic pain and ultrasound, selected for their clinical and scientific experience in the subject.
Interventions: Three rounds of questions were carried out to assess the main parameters that should be included in the ultrasound reporting template. For variables to be included in the template, a priori consensus criteria were used to reach agreement.
Measurements and Main Results: Of the 86 experts invited, 21 completed the final (third) round of the Delphi process. Experts represented North America, South America, Europe, and Australia. The final CPP ultrasound approach established by the experts' consensus contains 1) the assessment of the quality of the examination, 2) the necessary equipment, 3) the regions to be evaluated, and 4) elements that must be included in the exam.
Conclusion: Based on consensus methodology, we propose a standardized international ultrasound approach for women with CPP. Whilst it requires validation, this tool may serve to standardize the performance of the ultrasound for the indication of chronic pelvic pain, enhancing the evaluation of the broad differential diagnostic and the clinical applicability.

7893 Venous Thromboembolism Prophylaxis after Hysterectomy for Endometrial Malignancy in Class III Obesity: Patient Preferences and Outcomes

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Study Objective: This study assessed patient preference between two anticoagulants for postoperative venous thromboembolism (VTE) prophylaxis following hysterectomy for endometrial intraepithelial neoplasia (EIN) or grade 1 endometrioid adenocarcinoma in patients with class III obesity.
Design: Prospective quality improvement study.
Setting: Canadian urban, tertiary-care hospital.
Patients or Participants: All patients undergoing hysterectomy for EIN or grade 1 endometrial cancer with a body mass index (BMI) ≥ 40 between February 2021 and March 2022 who were eligible for extended postoperative anticoagulation, which is recommended in this population due to the high risk of VTE.
Interventions: Patients were provided with information about dalteparin, an injectable low-molecular weight heparin, and apixaban, a direct oral anticoagulant, prior to surgery. Postoperatively, patients were surveyed about their anticoagulation preference and discharged home with their preferred anticoagulant. Patients were followed up six weeks postoperatively to assess for medication adherence and adverse events.
Measurements and Main Results: 42 patients were included in the study with a mean BMI of 48.7 ± 7.32 kg/m^2. One patient had an abdominal hysterectomy, all others underwent robotic hysterectomy. Significantly more patients chose apixaban over dalteparin (30/42, p = 0.008). Route of administration was the most common reason for choosing apixaban, with doctor recommendation and medication cost as other commonly cited reasons. For patients choosing dalteparin, the available evidence and known efficacy in people weighing more than 100 kgs were the main reasons for selection. At 6 weeks post-hysterectomy there were no significant differences in rates of medication adherence, postoperative VTE, or clinically relevant bleeding between the groups.
Conclusion: The majority of patients with class III obesity selected apixaban over dalteparin for postoperative VTE prophylaxis. Although apixaban has less data supporting its use in this population, there were no adverse events in this study. Both anticoagulation options should be offered as this supports patient values and preferences in informed decision making and may improve accessibility.

7897 Bladder Injury Caused by Uterine Manipulator

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Study Objective: This video demonstrates identification and management of a bladder injury caused by a uterine manipulator
Design: Surgical video
Setting: Academic medical center
Patients or Participants: A 34-year-old G0 with endometriosis, bilateral endometriomas, and subserosal fibroids desiring fertility underwent a robotic-assisted abdominal exploration with excision of endometriosis and myomectomy. Uterine manipulator was placed at the start of the case. Exposure to the surgical field was limited by inadequate uterine manipulation, which was thought to be attributed to the significant adhesive disease. At the start of the anterior compartment dissection, it was suspected that the uterine manipulator tip may have perforated into the bladder. A 3mm perforation was confirmed on cystoscopy.
Interventions: A bladder flap was further developed but the defect was too caudal to be accessed in this plane. The space of Retzius was entered and intentional cystotomy was made. The bladder injury was repaired transvesically with 2 sutures of 2-0 PDS. An additional suture was placed in the vagina to close the vaginal aspect of defect. The cystotomy was closed in a traditional 2-layer fashion.
Measurements and Main Results: Repeat cystoscopy confirmed a watertight closure of the bladder injury and the intentional cystotomy repair. The retropubic space was reperitonealized. The patient did well post-operatively with bladder decompression with foley catheter for 10 days. Subsequent CT cystogram showed no leakage of urine. The catheter was removed after the post-op imaging and a voiding trial.
Conclusion: This case highlights a rare complication of uterine manipulator use. There are benefits of using uterine manipulators especially in cases of advanced endometriosis and laparoscopic hysterectomy are well known and hence used readily in minimally invasive gynecologic surgery. It is therefore important to be aware of potential complications and have knowledge of how to address them.

7902 Severe Adhesions? Don't Panic, Don't Open, the Robot Is Here. Robotic Approach to Perform Hysterectomy in Severe Pelvic Adhesive Disease

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Study Objective: To show an example of using minimally invasive approach instead of laparotomy during hysterectomy complicated by severe pelvic adhesions, to demonstrate the feasibility of robotic surgery in cases with severe pelvic adhesions, demonstrate that robotic surgery might be a potentially superior alternative for hysterectomy complicated by severe adhesions and to review tips and tricks to prevent bowel and bladder injuries.
Design: Video presentation.
Setting: Surgical procedure.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Evidence of benefits of robotic surgery over laparoscopy have been implemented multiple times but there is not consensus to declare superiority of robotic over laparoscopic surgery. One of the major benefits of robotic surgery already demonstrated is the lower rate of unplanned conversion to open surgery. In conclusion Robotic surgery might be a potentially superior alternative for hysterectomy complicated by severe adhesions.

7905 Incidental Laparoscopic Appendectomy for Women with Chronic Pelvic Pain and Endometriosis

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Study Objective: Pathologic evaluation of otherwise normal appearing appendices identifies abnormalities in a significant percentage of cases. This includes a significant minority of patients with preoperatively undiagnosed appendiceal endometriosis which can lead to morbidity if left untreated. The objective of this video is to review the safety and rationale for incidental appendectomy as it applies to gynecologic patients, and to show a safe and efficient method of laparoscopic appendectomy utilizing suture endoloop.
Design: NA.
Setting: NA.
Patients or Participants: Patients already undergoing laparoscopic gynecologic surgery for known pathology or chronic pelvic pain are good candidates for incidental appendectomy.
Interventions: NA.
Measurements and Main Results: NA.
Conclusion: Incidental appendectomy is a safe, straightforward procedure that should be offered to patients undergoing gynecologic surgery, especially those with concurrent chronic pelvic pain and endometriosis.

7909 The Martin Technique: Alternative Approach to Hysterectomy in Patients with Prolapsing Myomas

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Study Objective: Prolapsing myomas are typically treated using vaginal myomectomy. Patients who desire definitive surgery may be treated using a staged procedure. When hysterectomy is performed concurrently, it is often done using a vaginal or open approach. Cervical dilation due to the prolapsing myoma can preclude the use of a uterine manipulator commonly used during laparoscopic hysterectomy. To our knowledge, there is no technique described in the literature that utilizes a uterine manipulator to facilitate laparoscopic hysterectomy following vaginal myomectomy. The Martin Technique provides a minimally invasive alternative approach to hysterectomy following vaginal myomectomy.
Design: This video demonstrates a surgical case using the Martin Technique to show that effective uterine manipulation can be accomplished to perform laparoscopic hysterectomy following vaginal myomectomy.
Setting: The surgery is performed in dorsal lithotomy position to allow for vaginal and laparoscopic portions of the procedure.
Patients or Participants: The patient was diagnosed with a symptomatic prolapsing myoma and desired definitive treatment with total hysterectomy. She consented to video recording of her surgery and no identifying information was recorded.
Interventions: The patient underwent vaginal myomectomy using two looped sutures followed by transection of the stalk of the myoma. A cerclage was then placed and tied down over a 6mm dilator to allow for manipulator placement. A uterine manipulator then placed in the usual fashion and a total laparoscopic hysterectomy was performed.
Measurements and Main Results: Effective uterine manipulation was assessed throughout the surgery. Uterine manipulation was found to be safe and effective throughout the dissection, allowing for ample elevation of the uterus, appropriate visualization, and safe and efficient dissection.
Conclusion: The Martin Technique provides a laparoscopic approach to hysterectomy following vaginal myomectomy. Cervical cerclage corrects for cervical dilation caused by the prolapsing myoma. This allows for appropriate placement of a uterine manipulator, effective uterine manipulation throughout the surgery, and safe and efficient dissection to accomplish laparoscopic hysterectomy.

7911 Laparoscopic Intraligamentous Broad Ligament Leiomyoma Myomectomy and Closure

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Study Objective: To demonstrate a unique and rare case of a broad ligament leiomyoma and the techniques involved in the laparoscopic myomectomy. Emphasis on safe intraoperative management along with decreased blood loss
Design: A step-by-step explanation of the surgery using video (instructive video).
Setting: A university hospital based on Detroit, Michigan; Wayne State University/ Detroit Medical Center
Patients or Participants: 39-year-old G0 presenting for laparoscopic myomectomy due to AUB-L. Patient had generalized pelvic pain and pressure with limited pelvic exam likely due to intraligamentous broad ligament fibroid.
Interventions: Laparoscopic myomectomy with careful dissection, avoiding essential surrounding structures.
Measurements and Main Results: Successful removal of 7 leiomyomas, including an approximate 12 cm broad ligament fibroid. After removal of the broad ligament fibroid there a complete opening defect was closed with 0 V-loc. Technique involved closing the round ligament to the serosa on the anterior and posterior aspects of the uterus. The abdomen was carefully inspected after extraction, no injuries noted, good hemostasis confirmed.
Conclusion: Laparoscopic myomectomy removal offers effective surgical intervention. Due to limited data on laparoscopic technique, the rarity and symptomatic consequences of intraligamentous broad ligament leiomyomas – this case report aims to highlight the significance of skilled laparoscopic myomectomy techniques for overall lifestyle improvement in our patient.

7918 Laparoscopic Repair of Cervico-Vaginal Agenesis in a Previously Failed Attempt of Mcindoe's Vaginoplasty: A Case Report

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Study Objective: A unique Laparoscopic approach for surgical repair of Cervico-vaginal agenesis.
Design: A case report with 6 months follow-up.
Setting: laparoscopy surgery with patient in lithotomy position under anaesthesia.
Patients or Participants: A 23-yrs old female came with primary amenorrhea with lower abdominal pain since 2 years.
Her MRI was suggestive of:
1) upper 2/3rd vaginal aplasia with hematoma in the cervical canal
2) b/l hematosalpinx
3) b/l ovarian hemorrhagic cysts.
McIndoe's Vaginoplasty was attempted 6months back which had failed.
Interventions: Laparoscopic cervico- vaginal agenesis repair was planned
Measurements and Main Results: The occurrence of cervical agenesis is quite uncommon (1:80 000–1:100 000) and only 39% of these cases simultaneously have vaginal agenesis. Initially, these cases were managed by hysterectomy or abdominal cervicovaginoplasty. Later, a minimally invasive approach came to light with the advent of laparoscopy and surgical expertise.
Principles of surgery:
1. Laparoscopic management of Hematosalpinx and hemorrhagic cysts.
2. Dissection of UV fold and pushing the bladder down to expose 3-4 cm length of the vagina.
3. Dissection between cervix and vagina in the right plane.
4. Creating neo-vagina by dissection of the vaginal agenesis.
5. Vertical incision on the cervix and horizontal incision on the vagina
Suturing techniques between cervix and vagina and placing a silicon catheter in cervical canal and neo-vagina.
Conclusion: Laparoscopic approach for cervico vaginal agenesis is better than vaginal approach with cutting cervix vertically for patency of cervical canal.

7919 External Validation of the Recently Published "Aagl 2021 Endometriosis Classification" Staging System

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Study Objective: We aim to externally validate the "2021 AAGL Endometriosis Classification" system.
Design: A multicenter, retrospective, diagnostic accuracy study.
Setting: 2 gynecology units in metropolitan Sydney, Australia.
Patients or Participants: Patients with suspected endometriosis who underwent laparoscopy between January 2016 and October 2021 (n=272).
Interventions: Databases from three previous research studies were examined. Patients with comprehensive coded surgical data were identified. All patients were staged surgically by three assessors, according to the 2021 American Association of Gynecologic Laparoscopists (AAGL) classification staging tool. The AAGL 4-level surgical complexity scale was used as the validation tool.
Measurements and Main Results: 272 surgical cases were analyzed. Breakdown of surgical complexity levels were as follows: A 149 (54.8%), B 23 (8.5%), C 80 (29.4%) and D (20 (7.4%). The diagnostic accuracy for all observers to predict each level in terms of sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were: stage 1 to predict level A = 97.9-98.7%, 60.2-64.2%, 75.0-76.9% & 96.3-97.5%; stage 2 to predict level B = 26.1-30.4%, 93.2-95.6%, 26.3-35.3% & 92.9-93.6%; stage 3 to predict level C = 7.5-10.0%, 93.8-94.8%, 33.3-42.1% & 70.9-71.5%; stage 4 to predict level D = 90.-95.0%, 90.1-91.7% &, 41.9-47.5% & 99.1-99.6%. For all three assessors, AUROC for A vs B/C/D (cut-point 9) 0.75-0.88, A/B vs C/D (cut-point 16) 0.81 and A/B/C vs D (cut-point 22) 0.95-0.96.
Conclusion: This external validation study demonstrates that the highest AAGL stage performs reasonably well for the prediction of surgical complexity, albeit with low NPV. However, the three lower stages perform poorly. The AUROC scores for AAGL stage to discriminate surgical complexity levels was less promising than in the original publication of the staging tool. This is the first external validation study of the AAGL 2021 classification system. The results suggest that in its current form, it is not generalizable.

7923 Establishment of the National Endometriosis Clinical and Scientific Trials (NECST) Registry in Australia

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Study Objective: To establish a nationally coordinated clinical database on endometriosis in response to the Australian National Action Plan for Endometriosis (2018)[1].
Design: An online, secure cloud-based data base with minimum core clinical and health data are collected across eight modules: 1) Demographics 2) Clinical Presentation 3) PROMs including the Euroqol (EQ)-5D and Endometriosis Health Profile (EHP)-30, 4) Clinical Presentation Diagnosis, 5) Imaging (ultrasound and/or MRI) 6) Medical Management 7) Surgical Management and 8) Histopathology. Participants in the NECST Registry are followed up at 6, 12 months and annually, capturing changes to their symptoms and management and to complete the PROMs EQ-5D and EHP-30 questionnaires.
Setting: Recruitment is possible from hospitals, specialist private clinics, and the general community via social media.
Patients or Participants: Women and people assigned female at birth, 18 years and over, experiencing endometriosis-related symptoms (chronic pelvic pain, infertility and/or abnormal uterine bleeding) or have been diagnosed with endometriosis or a related condition (adenomyosis).
Interventions: N/A.
Measurements and Main Results: To date, 890 participants have been recruited, 305 are from hospitals and specialist clinics and 585 from general community recruitment. Age range 19 − 66 years (mean age 35). From 469/890 participants who completed the Clinical Presentation and Medical History questionnaire, the most common presenting symptom was dysmenorrhoea (n = 214) and other types of pelvic pain (n = 65). From 436/469 participants who had a previous diagnosis of endometriosis, diagnosis was made at laparoscopy in 436 participants and based on symptoms and imaging in 57 participants. Ten participants recorded they had no symptoms relating to endometriosis.
Conclusion: The NECST Registry will provide life course and associated patient-outcomes data for women living with endometriosis and associated conditions.

Reference

1. Commonwealth of Australia (Department of Health). National Action Plan for Endometriosis. Australian Government, Canberra; 2018.

7934 Omental FLAP for Preventing & Treating Localised Ureteric Injury

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Study Objective: Revascularization of ureter by using vascularized omental flap.
Design: Prospective analysis
Setting: Patient underwent 3D laparoscopy, all procedures done by experienced and qualified team.
Patients or Participants: 5 patients.
Interventions: Case 1- In uterine transplant donor the vascular omental flap used for devascularized ureter along with DJ stent. Case 2- In patient of LRH devascularization of ureter was there so vascular omental flap used. CAse 3- Bilateral ureter normal but leak present, vascular omental wrapping done at the UV junction. Case 4- Grade IV endometriosis with right ureteric stricturoplasty and omental wrapping done. Case 5- Post radiation (O/C/O Ca endometrium) bilateral uretero-uretero anastomosis and omental wrapping
Measurements and Main Results: All the patients in whom vascularized omental flap was used has no complications and long-term follow-up did not show any evidence of ureteric strictures.
Conclusion: we propose a vascularized omental flap in addition to a DJ stent following extensively devascularized ureters in cases of severe endometriosis or cancer surgeries.

7943 Modification of the "Aagl Endometriosis Classification" to a 3-Stage System: Diagnostic Accuracy & Inter-Observer Reproducibility Study

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Study Objective: We aim to assess the performance of a modified AAGL (mAAGL) endometriosis classification system and its inter-observer reproducibility.
Design: Retrospective diagnostic accuracy & inter-observer reproducibility study.
Setting: 2 gynecology units in metropolitan Sydney, Australia.
Patients or Participants: Patients with suspected endometriosis who underwent laparoscopy between January 2016 and
October 2021 (n=272).
Interventions: Patients with complete surgical data included. The original 4-stage American Association of Gynecologic Laparoscopists (AAGL) staging system was modified to three stages by merging AAGL stages 2 and 3 and surgical complexity levels B and C. Three observers independently apportioned an AAGL stage 1-3, blinded to surgical skill level (A, B and C). End points were diagnostic performance of each observer to predict level of surgical complexity for each stage, i.e., mAAGL stage 1 to predict level A, mAAGL stage 2 to predict level B, mAAGL stage 3 to predict level C. Inter-observer reproducibility was assessed using OR of a higher grade, between each pair of observers.
Measurements and Main Results: 272 surgical cases analyzed. The diagnostic accuracy for all observers to predict each level in terms of sensitivity, specificity, PPV and NPV were: stage 1 to predict level A: 98.0-98.7%, 60.2-64.2%, 75.0-76.9% & 96.3-97.5%; stage 2 to predict level B: 31.1-36.9%, 97.0-98.2%, 86.5-92.6% & 69.8 − 71.9%; stage 3 to predict level C: 90.0-95.0%, 90.1-91.7%, 41.8 - 47.5% & 99.1-99.6%. Inter-observer reproducibility between observer 1 & 2 was 0.81, between observer 1 & 3 was 0.69 and between observer 2 & 3 was 0.43. Overall percentage agreement between observers 1 & 2 was 93.4%, between 1 & 3 was 93.4% & between 2 & 3 was 96.3%.
Conclusion: The mAAGL system appears to perform well for both low and high stage endometriosis disease. The 4-stage AAGL staging system could be improved by merging AAGL stages 2 and 3 and in turn using a 3-stage system.

7945 Time to Separate OB from Gyn? Resident Perspectives on Gynecologic Surgical Training and Subspecialty Tracking in Residency Programs

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Study Objective: This study seeks to assess resident satisfaction with their gynecologic surgical training and their opinions on subspecialty tracking in obstetrics and gynecology training programs.
Design: Cross sectional survey of current obstetrics and gynecology residents.
Setting: The survey was distributed to 258 ACGME accredited obstetrics and gynecology residency program coordinators who were asked to distribute the survey to their current residents.
Patients or Participants: PGY1 - PGY4 residents at ACGME accredited obstetrics and gynecology residency programs.
Interventions: An internet-based survey was distributed via the Qualtrics platform. All responses were anonymous. The survey was distributed on two occasions in March 2022. The data presented in this abstract is preliminary.
Measurements and Main Results: Of the 157 Ob/Gyn residents who responded to the survey, 45% plan to pursue a generalist career, 42% fellowship, and 13% undecided. While 75% are satisfied with their laparoscopic training, only 47% are satisfied with robotic training. When asked if they felt confident in their ability to perform specific surgical procedures independently after graduation, 47% felt confident with robotic-assisted procedures, 39% with laparoscopic myomectomy, and only 32% with complex laparoscopic dissection.
The majority of residents (52%) felt that tracking would have a positive impact on training, 18% thought it would have a negative impact, and 30% were unsure or thought it would have no impact. Eighty percent felt that tracking would better prepare residents for fellowship training and 53% felt it would increase minimally invasive skills among residents. Over half of respondents (54%) said they would be interested in participating in a residency program that offered subspecialty tracking.
Conclusion: This study highlights the need for change in gynecologic surgical training. The majority of residents surveyed feel subspecialty tracking would have a positive impact on residency training and would be interested in participating in such a program.

7952 Controlled Ovarian Stimulation with LNG-Ius *in Situ* in Women with Atypical Endometrial Lesions, Undergoing Fertility-Sparing Treatment

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Study Objective: to demonstrate safety of ovarian stimulation with 52mg Levonorgestrel Intrauterine System (LNG-IUS) *in situ* in patients conservatively treated for atypical endometrial lesions
Design: prospective observational study.
Setting: Gynecology department of University Federico II, Naples, Italy.
Patients or Participants: young women with atypical endometrial hyperplasia (AEH),or FIGO IA G1-G2 endometrial cancer(EC-G1,EC-G2),who underwent fertility-sparing treatment and ovarian stimulation with LNG-IUS *in situ.*
Interventions: combined fertility-sparing treatment was performed:EC-G1 and EC-G2 were treated by three steps hysteroscopic technique, AEH by superficial endometrial resection. LNG-IUS was inserted after surgery. Hysteroscopic endometrial biopsies were performed at 3 and 6 months. If complete response (CR) was achieved, controlled ovarian stimulation with LNG-IUS *in situ* was started, oocytes retrieval performed, and mature oocytes cryopreserved. After removal of LNG-IUS, embryo transfer was performed.
Measurements and Main Results: 23 young women with AEH(n=17), EC-G1(n=3), or EC-G2(n=3) were enrolled. CR was achieved in 14/16 (87.5%) of AEH, 2/2(100%) of EC-G1 and 2/3(66.7%) of EC-G2 at 3-month follow up and in 11/14(78.6%) of AEH, 2/2(100%) of EC-G1 and 2/2(100%) of EC-G2 at 6-month follow up. 10 patients underwent ovarian stimulation with LNG-IUS *in situ* (experimental group) and compared with 10 infertile patients undergoing ovarian stimulation in absence of LNG-IUS (control group). The mean number of oocytes retrieved and mature oocytes was 8.10(± 2.77 SD) and 7.00(± 2.11 SD) in experimental group, compared with 6.30(± 3.3 SD) and 4.88(± 2.68 SD) in control group. There were no statistically significant differences in oocytes retrieved(p=0.19) and mature oocytes(p=0.05) between the two groups. Reproductive outcome (pregnancies and live birth rate) was also assessed. Pregnancy rate was 50%, live birth rate 37.5% and miscarriage rate 12.5%; 50% of patients experienced implantation failure.
Conclusion: presence of LNG-IUS during ovarian stimulation has no negative effects on oocyte quality, balancing the potentially dangerous effect

of hyperestrogenism on patients with atypical endometrial lesions. The combined approach confirmed as a safe and effective fertility-sparing approach. Promising pregnancy outcomes can be expected.

7954 Patient Experiences with a Multidisciplinary Fibroid Program

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Study Objective: Examine patient experience with fibroid management options before and after consultation at a multidisciplinary fibroid center.
Design: Prospective survey-based descriptive study.
Setting: Multidisciplinary (minimally invasive gynecology and interventional radiology) fibroid center New York, NY.
Patients or Participants: Patients who presented for initial consultation with our fibroid program from July 2021 through January 2022.
Interventions: Patients were offered same day office consultations with a minimally invasive gynecologic surgeon followed by a telemedicine visit with an interventional radiologist within 3 weeks of consult request. Collaborative discussions were held between providers regarding patient care. Patients were asked to complete the survey following both appointments. Data was collected regarding patient demographics, prior evaluation of fibroids, knowledge about treatment options, and overall experience.
Measurements and Main Results: A total of 102 patients completed the survey (response rate 77%). A majority (55.9%) had known about their fibroids for at least two years. Most patients sought out the fibroid program for a 2nd (28.4%), 3rd(22.5%) or 4th (7.8%) opinion. Notably, 35.3% of patients who had previously been seen by a gynecologist were not offered treatment. Of those who had been offered treatment, 24.5% were counseled on medical management with oral contraceptives, 28.4% on surgical options and 5.9% on uterine artery embolization. Nearly all patients (86.3%) endorsed that they would not have sought two separate consultations had it not been for the program. Patients were overall satisfied with their experience; with 95.1% reporting they were more knowledgeable about their options and none reporting the consults created more confusion for them.
Conclusion: Many patients with symptomatic uterine fibroids presenting for additional opinions have not been comprehensively counseled on fibroid management options. A collaborative approach to fibroid management helps to better educate patients about their treatment options, provides an opportunity to be thoroughly counseled by the specialists performing either surgical or interventional procedures, and increases patient satisfaction.

7955 The Adeno Study: Adenomyosis in Dutch Women and Its Effect of Neonatal and Obstetric Outcomes -a Retrospective Population-Based Study

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Study Objective: To retrospectively investigate prevalence of adverse obstetric and neonatal outcomes in women with histopathologically proven adenomyosis compared to the general (Dutch) population.
Design: Retrospective population-based cohort study.
Setting: Population-based national databases.
Patients or Participants: Women with registered pregnancy outcomes in the Dutch national Perined registry, who received a histopathological diagnosis of adenomyosis (post-hysterectomy) between 1995 to 2018, as registered in the Dutch national pathological registry, were included. Pregnancy outcomes of 7,925 women with a histopathological diagnosis of adenomyosis were compared to 4,615,803 women without adenomyosis. Adjusted Odds Ratios (aOR, 95% CI) were calculated. Outcomes were corrected for: maternal age, parity, ethnicity, year of registered birth, induction of labor, hypertensive disorder in previous pregnancy, multiple gestation and low socioeconomic status.
Interventions: Hysterectomy.
Measurements and Main Results: Women with adenomyosis had an aOR of 1.370 (95% CI 1.25-1.498) for hypertensive disorders, an aOR of 1.373 (95% CI 1.248-1.510) for preeclampsia, and aOR of 1.15 (95% CI 1.067-1.248) for small-for-gestational-age. Women with adenomyosis had an aOR of 1.538 (95% CI 1.410-1.679) for emergency caesarean delivery, an aOR of 1.242 (95% CI 1.124-1.373) for failure to progress in labor, an aOR of 1.278 (95% Ci 1.101-1.484) for placental retention and an aOR of 1.232 (95% CI 1.098-1.383) for postpartum hemorrhage. There was no significantly increased risk for HELLP, eclampsia, placental abruption, operative vaginal delivery or need for oxytocin stimulation.
Conclusion: This is the largest study up to now which investigates the impact of adenomyosis on obstetric outcomes and is the first study which uses the golden standard of adenomyosis diagnosis: histopathology. We confirm women with adenomyosis show an increased prevalence of a variety of adverse obstetric outcomes, specifically hypertensive disorders of pregnancy, small-for-gestational age, failure to progress in labor and placental retention. We conclude that uterine placental invasion and contractile function in labor may be impaired in women with adenomyosis.

7967 Hysteroscopic Subendometrial PRP Injection in Cases of Infertility

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Study Objective: To determine the efficacy of Hysteroscopic subendometrial Platelet Rich Plasma (PRP) injection in improving endometrial thickness and pregnancy rates in IVF cases.
Design: Case-control Study.
Setting: Patients had hysteroscopy under general anesthesia or office settings according to their preference, in the dorsal lithotomy position.
Patients or Participants: 51 patients with history of recurrent IVF failure or thin endometrium (<7mm).
Interventions: Hysteroscopic subendometrial injection of autologous PRP using a wallace needle through the hysteroscope's operating channel to inject the PRP beneath the superficial endometrium in novel technique.
Measurements and Main Results: Endometrial thickness was measured sequentially post-operative and pregnancy rates following embryo transfer recorded.
Conclusion: PRP injection significantly improves endometrial thickness, and more studies are needed to ascertain pregnancy rates and live birth rates.

7972 Enhancing Laparoscopic Education with Use of LaparAssist, a Hands-Free Device Designed to Direct Learners on a Laparoscopic Monitor

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Study Objective: To determine if LaparAssist, a wireless foot-pedal activated glasses-mounted laser pointing device, is beneficial to medical trainees and performs non-inferiorly to standard pointing devices.
Design: A prospective observational study was performed on academic personnel, with a comparative follow-up study utilizing OB/GYN residents. Two tasks were designed: a maze task to determine pointing accuracy, and a point task measuring time of completion.
Setting: Participants stood 15° offset from perpendicular to a monitor that was 145 cm tall and 120 cm away while using the devices. Testing was

performed in a prototyping lab and simulated operating room for academic personnel and residents, respectively.
Patients or Participants: Twenty-three academic personnel volunteered for the initial study. The follow-up comparative study utilized 10 resident volunteers. Participants took approximately 15 minutes to complete both tasks. Follow-up surveys were conducted.
Interventions: Participants were taken through a series of non-inferiority tests using LaparAssist, a laser pointer, and a computer mouse on a monitor. For the maze task, participants utilized each device to complete a simple maze. In the point task, participants pointed at randomly appearing dots.
Measurements and Main Results: For the maze task, participants were timed, and errors were recorded. Analysis demonstrated no significant difference in errors by the residents between LaparAssist and the laser pointer (p=0.05). For the point task, subjects were timed. Analysis demonstrated no significant difference in time by the residents between LaparAssist and a handheld laser or mouse. Overall, the residents performed the tasks faster than academic personnel. Survey results indicated no significant difference between devices in comfort and perceived performance for both academic personnel and residents.
Conclusion: LaparAssist allows laparoscopic surgeons to more clearly communicate with trainees without the use of occupied hands. Our data indicates LaparAssist can perform comparably to hand-controlled pointing devices.

7976 Vaginal Natural Orifice Transluminal Endoscopic Surgery (vNOTES) with a Retroverted Uterus: Should the Approach Change?

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Study Objective: To demonstrate techniques that improve visualization and operative field for the removal of fallopian tubes in patients with retroverted or enlarged uterus encountered during vaginal natural orifice transluminal endoscopic surgery (vNOTES).
Design: Video demonstration.
Setting: Tertiary care center.
Patients or Participants: A reproductive-age patient was seen in the office for surgical sterilization. She was deemed a good candidate for VNOTES as she had no prior abdominal surgery and a small uterus. However, upon entry into the abdomen, the uterus was found to be retroverted.
Interventions: Routinely, three instrument sleeves are utilized with the vaginal access point in order to use a laparoscopic camera, a grasping instrument, and an instrument that cauterizes and excises the fallopian tubes. For a retroverted uterus, strategic access point preparation and instrument positioning techniques can improve visualization, maximize the operative working diameter, and decrease instrument collision. The instrument sleeves are placed in an inverted triangle, with the grasping instrument in the ipsilateral side of the fallopian tube being excised and the 30-degree laparoscope in the contralateral sleeve. The excising instrument is placed in the most inferior, most medial sleeve, maximizing the operative field. A fourth instrument placed directly in the air-tight gel below the inferior sleeve can lift the uterus to improve visualization of the fallopian tubes.
Measurements and Main Results: Patient was discharged home on the same day. Two weeks post-operatively, there were no recovery complications.
Conclusion: The vNOTES procedure provides patients a minimally invasive option for surgical sterilization with fast recovery and negligible scarring. Surgeons may still consider a patient with a retroverted uterus a candidate for vNOTES by optimizing sleeve placement, instrument positioning, and utilizing a a fourth instrument to lift the uterus and better visualize the operative field. This technique may also be useful to improve visualization of fallopian tubes in the setting of a bulky or enlarged uterus.

7984 Primary Hysteroscopic Treatment of First Trimester Miscarriage Using Resectoscope - a Pilot Study

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Study Objective: To determine the feasibility and safety of hysteroscopic resection using standard resectoscope for uterine evacuation of first-trimester miscarriage.
Design: A prospective feasibility study.
Setting: Academic, tertiary-care medical center.
Patients or Participants: Women diagnosed with early miscarriage up to 12 weeks from last menstrual period.
Interventions: Overall, in this pilot study, 15 women were recruited for hysteroscopic evacuation of the uterine cavity between April 2021 and October 2021. All procedures were performed under general anesthesia by Versapoint 2 Bipolar Resectoscope 24Fr (J&J, Germany).
Measurements and Main Results: Collected data, including demographic characteristics, pregnancy-sac size and location, length of procedure, as well as intra and postoperative adverse events, were recorded. The mean duration of the procedure was 14.3 ± 3.7 minutes. Complete evacuation was recorded in all cases, and no adverse events occurred during any procedure. Post- procedure follow-up was conducted by office hysteroscopy in 10 women and by ultrasonography in 5 women. In one case, retained products of conception were diagnosed in the office hysteroscopy and were removed using the "see-and-treat" technique without anesthesia. The diagnosis was confirmed pathologically.
Conclusion: Hysteroscopic evacuation using resectoscope for the treatment of early miscarriage is a safe and feasible technique. Randomized trials are needed to examine the efficacy of hysteroscopic treatment compared with traditional dilation and curettage.

7986 Laparoscopic Left Adnexal Cystectomy in a Pediatric Patient with Infected Ohvira

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Study Objective: Obstructed Hemivagina and Ipsilateral Renal Anomaly (OHVIRA) is an abnormality of Mullerian development typically diagnosed after menarche with painful menses due to the obstructed outflow of one hemivagina. Microperforations may occur in the vaginal septum which can lead to infected hematometrocolpos, intermenstrual bleeding, and abnormal discharge.
Design: We present a video demonstrating the case of a twelve-year-old girl with history of renal anomaly and painful menses with intermenstrual bleeding and persistent discharge. Preoperative imaging suggested OHVIRA with an eight-centimeter adnexal cyst on preoperative imaging. Differential diagnosis of the adnexal cyst included tubo-ovarian abscess, ovarian or paratubal cyst, and ectopic ureter leading to a fluid collection.
Setting: Concurrent laparoscopic and vaginal surgery at an academic children's hospital medical center.
Patients or Participants: Twelve-year-old girl with history of renal anomaly and gynecologic symptoms.
Interventions: The vaginal septum was removed in the operating room, revealing purulent hematocolpos consistent with infection. Laparoscopy allowed for diagnosis of paratubal cyst with adnexal inflammation and concurrent cystectomy, in addition to permitting confirmation of uterine anatomy for future guidance.

Measurements and Main Results: Postoperatively, the patient healed well from laparoscopy. Her vaginas were unified, and she was counseled that she has two cervices and hemi-uteri for future gynecologic planning.
Conclusion: While a majority of cases of OHVIRA may be surgically corrected with vaginal surgery alone, the addition of laparoscopy allowed for diagnosis and treatment of the concurrent paratubal cyst at the time of vaginal septum resection.

7989 Cannonball Fibroid Robotic Myomectomy with Specimen Extraction Using Excite Technique

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Study Objective: Demonstrate a safe surgical technique used for robotic myomectomy of a large "cannonball" fibroid with specimen removal through umbilical incision, with incision retractor and protected by a contained extraction system, using Extracorporeal C-Incision Tissue Extraction (ExCITE) technique.
Design: Case report illustrated with a video.
Setting: Patient is placed in semi-gynecological position.
Patients or Participants: 40-year-old woman reports pelvic pain, increased abdominal volume and polyuria. Nulligest patient with reproductive desire, no previous illnesses. Physical examination revealed a palpable globose mass 2 cm under the umbilical scar. MRI showed a voluminous and globose uterus of 920 cc, due to a "cannonball" FIGO 5 fundic myoma measuring 14.3 cm.
Interventions: 8 mm incision was performed in the umbilical scar for endoscope robotic trocar. Other two 8mm incisions was performed in each flank to other robotic trocars. And one 5mm incision was performed in right hypochondrium for laparoscopic assistance.
Inspection shows a voluminous uterus with a large fundic fibroid measuring about 14 cm. Wedge hysterotomy was performed for fibroid enucleation, with subsequent hysterorrhaphy. Then, specimen was removed through the umbilical incision, protected by a contained extraction system and using a wound retractor, under ExCITE technique.
Measurements and Main Results: We obtained efficient specimen extraction with safe and agile tissue fragmentation, maintaining aesthetic benefit for the patient.
Patient was discharged in the second postoperative day, showing great evolution.
Conclusion: Extraction of big fibroids is often challenging for the minimally invasive gynecological surgeon. Using ExCITE technique inside a specimen containment bag with sharp instrumentation protector, it is possible to perform safe, agile and reproducible extraction technique, with efficient removal of tissue, avoiding the use of eletromechanic morcellator and the opening of vaginal dome.

8001 Hysteroscopic Correction of Dysmorphic Uterus

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Study Objective: 3D USG for diagnosis of Dysmorphic Uterus and correction with mini resectoscope in recurrent abortions.
Design: Prospective.
Setting: In the operation theatre under conscious sedation. Patient in lithotomy position, no dilatation of cervix.
Patients or Participants: Recurrent abortions diagnosed on 3D sonography with Dysmorphic Uterus.
Interventions: Diagnostic hysteroscopy with 30 degree 2.9mm hysteroscope followed in the same setting with correction by bipolar mini resectoscope. Paediatric no8 Foleys catheter insertion under hysteroscopic guidance as adhesion prevention. 3D USG after next period to confirm appropriate correction followed by control office hysteroscopy to assess the cavity and correction.
Measurements and Main Results: The dysmorphic uterus is diagnosed on 3D USG by measuring the T-angle (<40°), the lateral indentation angle (<130°) and depth of lateral indentation(>7mm). After the correction, the 3D USG measurements show improvement in all the parameters. On control hysteroscopy, no intrauterine adhesions and enlarged cavity is appreciated.
Conclusion: 3D USG helps in diagnosing the dysmorphic uterus and hysteroscopic correction of lateral wall indentation and fundal indentation with creation of normal uterine cavity is feasible with mini resectoscope.

8010 Postoperative Abscess Risk with Hemostatic Agent Use in Hysterectomy

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Study Objective: We noticed a trend of increased re-admissions for post-op pelvic abscesses. In an attempt to further investigate causality, we identified use of hemostatic agents as a possible culprit. The study objectives were to determine if intra-operative use of hemostatic agents was associated with post-operative abscess formation in patients undergoing hysterectomy.
Design: Retrospective chart review identified women who underwent hysterectomy by a Gynecologic Oncologist for any indication at a single institution from January 1, 2019, through December 31, 2019. Patient and surgical characteristics were abstracted, and comparisons were made among those who received any hemostatic agent and those that did not.
Setting: Study was performed at an academic institution in rural Virginia.
Patients or Participants: 428 hysterectomies were identified among five providers over a one-year period, with a postoperative pelvic abscess rate of 3.7%.
Interventions: The relationship between intra-operative hemostatic agent use and post-op pelvic abscess formation was determined using multivariate logistic regression. Secondary outcomes evaluated included the presence of other major post-operative adverse events, such as post-operative blood transfusion, presentation to the emergency room, readmission or re-operation.
Measurements and Main Results: Abscesses were identified in 4 (2.2%) of cases without *vs* 12 (4.9%) of cases with hemostatic use with a logistic regression model demonstrating no significant difference in the groups (OR=2.10, p=0.22). Data showed an increase in presentation to the ED (OR=3.43, p=0.002 adjusted) and higher odds of readmission to the hospital within 30 days of surgery (OR=3.19, p=0.03) with hemostatic agent use.
Conclusion: There was no association found between the use of hemostatic agent use and abscess formation; however, data showed hemostatic agent use in surgery was associated with increased odds of presentation to the ED and readmission to the hospital within 30 days of surgery.

8014 A Medical Student's Guide to Laparoscopic Hysterectomy

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Study Objective: The objective of this video was to create an easily accessible surgical education tool for medical students rotating through their gynecologic surgical rotations.
Design: N/A.
Setting: Academic tertiary referral center.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Providing medical students with readily available surgical videos and instruction has potential to improve their gynecology clerkship rotations.

8018 Tips and Tricks for Gynecologic Laparoscopic Surgery in Setting of Umbilical Hernia

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Study Objective: To review alternative port placement techniques in the setting of a large umbilical hernia to better prepare gynecologic surgeons for management of these patients.
Design: Educational video of two cases.
Setting: Both cases were completed at a county hospital.
Patients or Participants: Our patient is a 52-year-old female with a history of class III obesity (BMI 43) and a 9 cm umbilical hernia who underwent a laparoscopic salpingo-oophorectomy for removal of an 11 cm ovarian mass. The second case briefly discussed is a 43-year-old female with history of ventral hernia repair with mesh who underwent a laparoscopic hysterectomy.
Interventions: For the first patient, an initial laparoscopic entry site superior to the umbilicus was used, however, the hernia contents just inferior to the scope resulted in poor visibility. The camera port was replaced at Palmer's point and the hernia was successfully reduced. The ovarian mass was resected in a standard fashion. General surgery then completed the hernia repair with mesh. They first amputated the hernia sac externally, sutured the fascial defect and then laparoscopically secured a 4.5-inch mesh to the peritoneum. For our second patient, mesh location was noted preoperatively by CT. Intraoperatively, the borders of the mesh were outlined on her skin with a marking pen before laparoscopic entry was attempted to avoid entering through the mesh.
Measurements and Main Results: No surgical complications were appreciated, and the patient was discharged on postoperative day 0. Six months later she remains satisfied with her surgical results.
Conclusion: Knowledge of alternative laparoscopic entry techniques is crucial in cases where the umbilical entry site is obscured, such as in our case. By reviewing alternative port placements and hernia repair techniques, gynecologists will be better equipped to counsel in clinic and care for their patients in the operating room.

8033 Development of Laparoscopic Skills in Skills-Naÿve Trainees Using Self-Directed Learning with Take-Home Laparoscopic Trainer Boxes

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Study Objective: Our study aims to evaluate the utility of take-home laparoscopic trainer boxes with self-directed learning in the development of laparoscopic skills in medical students and surgically naïve gynecology interns.
Design: Prospective cohort study.
Setting: Tertiary care university hospital.
Patients or Participants: 74 medical students and beginning OB/Gyn interns (postgraduate year 1).
Interventions: Participants performed a laparoscopic peg transfer task with only task instructions and no additional training. Tasks were recorded and scored by adding completion time to penalties for dropped pegs. Participants subsequently took home a laparoscopic trainer box for 3 weeks to practice without guidance and returned to perform the peg transfer task for a final score.
Measurements and Main Results: Initial and final peg transfer scores were compared for improvement. Improvement was compared to practice as well as variables such as demographics, surgical interest, comfort with laparoscopy, and past experiences. Mean peg transfer task scores improved from 287 seconds to 193 seconds ($p<0.001$). Score improvement showed a positive correlation with number of home practice sessions with a linear regression R^2 of 0.134 ($p=0.001$). More practice, both in time and number of sessions, resulted in larger increases in comfort levels, and higher comfort levels correlated with better final task scores with a linear regression R^2 of 0.152 ($p<0.001$). Medical students interested in surgery had less practice sessions ($p=0.496$), however, interest in a surgical field had no impact on final scores or improvement. Playing a musical instrument and having two or more hobbies involving manual dexterity was associated with a better baseline score ($p=0.032$ and $p=0.033$ respectively), but no difference in the final scores or score improvement. No other past experiences impacted initial or final scores.
Conclusion: Our study demonstrates that the use of home laparoscopic box trainers can develop laparoscopic skills in surgical novices even without formal guidance or curriculum.

8066 5 Levels of Ureteric Dissection

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Study Objective: To delineate, describe, and proceed on different levels of ureteric involvement of endometriosis.
Design: Several years of surgeries on patients suffering from endometriosis leaves the authors with some distinct characteristics, and best understood management styles for involvements of the disease with the ureter.
Setting: The patient is positioned in the dorsal lithotomy in Trendelenburg position. Primary tracer is through the umbilicus, 3 operative ports are used, 2 at respective right and left flank and middle at supra pubic port.
Patients or Participants: This learning in this video has been compiled over several years with learnings from numerous surgeries to empirically categorize ureteric involvement of endometriosis and the best ways to manage each of them.
Interventions: All surgeries in this video presentation are laparoscopic surgeries
Measurements and Main Results: The study breaks down ureteric involvement into 5 primary categories namely (1) Tease and cut (2) Laminar dissection (3) The virgin gateway (4) The Wertheim Worry and finally (5) The Choke Hold. The list is non-exhaustive, and each level presents us with a more intense involvement of the disease than the last.
Conclusion: Endometriosis is an anatomy altering disease that presents itself in several ways. No patients have the exact same disease expression, and many more levels of involvement can be listed. However, for the purpose of this study, these involvement do enough to explain to us how the involvement can be managed in a majority of cases.

8091 Robot-Assisted Laparoscopic Hysterectomy with Retroperitoneal Uterine Fibroid

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Study Objective: Demonstrate a Robot-Assisted Laparoscopic (RAL) Hysterectomy with a cul-de-sac uterine fibroid, and discuss the benefit of a RAL surgery in these procedures
Design: Narrated video of RAL hysterectomy and exeresis of retroperitoneal mass compatible with fibroid.
Setting: Surgery performed with the patient in lithotomy and Trendelenburg position. Robot was in left lateral pelvic angle.
Patients or Participants: Female, 50 years old, previously diagnosed with fibroid for 8 years. Patient experienced pelvic pain, hypermenorrhea, constipation, and other compressive symptoms. The latter persisted after menopause, with no significant mass reduction.
Ultrasound described a 76cc uterus with a solid formation along right lateral uterine wall measuring $12 \times 9.4 \times 9.3$cm. Clinical examination revealed a palpable uterus 3 cm above pubic symphysis, endorsed by imaging findings.

Interventions: Identified a 15cm mobile tumor, suggestive of fibroids in retro uterine region, adhered to the right ovarian fossa with lateralization of the rectum. Ureterolysis was performed and the mass released from the ovarian fossa to the peritoneal reflection of the rectum and uterine torus, aiming the removal of the fibroid en bloc during hysterectomy.
Measurements and Main Results: Operation time was three hours. Patient was early discharged from the hospital, on the first post-operative day with excellent pain control. She evolved without complications during follow-up, being fully discharged with complete symptom improvement.
Conclusion: Minimally invasive surgery has become the standard of therapy for an extensive number of gynecological diseases especially for patients with benign afflictions. Despite most studies proving absence of benefits with RAL when compared to Conventional Laparoscopy, in specific cases, especially when analyzing abnormal form uteri due to myomas, some studies have shown benefit in performing RAL. Increasing accuracy, flexibility and ergonomics can improve results and lead to easier bleeding control as observed in the presented case.

8097 How Do You Do It? a Survey on the Preferences of Surgeons Regarding Uterosacral Ligament Suspension (USLS) Technique

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Study Objective: To describe the practice patterns and techniques for performing uterosacral ligament suspension (USLS) for the treatment of apical prolapse.
Design: Web-based survey performed from October 2021 to April 2022. Study was IRB exempt. Data was collected in RedCap.
Setting: N/A.
Patients or Participants: Members of AUGS, IUGA, AAGL, and UGSA.
Interventions: A 31-item, deidentified questionnaire.
Measurements and Main Results: We received a total of 595 responses, mostly from the United States (40.7%) and Australia (7.9%). Most of the respondents were Obstetrics and Gynecology and FPMRS specialists (67.9%), followed by general Obstetrics and Gynecology (16.8%) and MIGS (8.4%). Most surgeons were more than 20 years in practice (33.9%) and 49% perform >100 surgeries/year with a mean of 67.7% of cases being for apical support procedures. USLS is the most common apical support surgery taught during their fellowship (44.4%), followed by sacrospinous ligament suspension - SSLS (35.8%) and sacrocolpopexy - SCP (19.9%). Regarding preferences, USLS is performed by 46.3% of respondents >40% of the time for apical support, while 29.1% and 20.1% perform SSLS and SCP, respectively. Vaginal route (72.8% > 60% time) and ipsilateral (64.3%) high USLS technique were the most common route and technique performed. When placing sutures vaginally, 32.3% of respondents used delayed absorbable suture, followed by 24.3% absorbable sutures. Two sutures were the most common choice for ipsilateral or midline USLS plication. There was even distribution between placing sutures at the level of the ischial spine (46.6%) or above the level of the ischial spine (36.4%). A third of surgeons that perform lap/robotic/open USLS perform a relaxing peritoneal incision. Eighteen percent of surgeons routinely identify the inferior hypogastric plexus. Routine cystoscopy is performed by 65.2% and 73.2% of surgeons that perform, respectively, lap/robotic/open and vaginal USLS.
Conclusion: There is significant heterogeneity in the techniques to perform a uterosacral ligament suspension for apical prolapse. Standardization is recommended for future surgical studies.

8103 Extensive Bladder Endometriosis between Ureters

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Study Objective: To present a case of extensive bladder endometriosis located between the two ureters, with complete lesion's resection after bilateral double J stent insertion.
Design: Case report illustrated with video.
Setting: Under general anesthesia the patient was placed in supine position, arms alongside the body and legs 80 grades abducted. Four laparoscopic accesses were performed: one for optics in the umbilical scar and three accessories: both iliac fossa and suprapubic region.
Patients or Participants: 35 years- old patient, with no comorbidities and no previous pregnancy, complained of intense dysmenorrhea and dysuria related to the menstrual period. Physical examination showed vesicouterine thickening and painful retrocervical nodule. The ultrasonography with bowel preparation showed a focal thickening at the bladder wall measuring 3.8 × 3.2cm, involving detrusor and bladder mucosa and in intimate contact with the left ureter. There were also signs of intestinal, uterine, and adnexal endometriosis lesions.
Interventions: The patient was eligible for an endometriosis treatment laparoscopy. It was performed an intraoperative planned cystoscopy to locate the nodule and its relationship with the vesical trigone. As the lesion presented a big extension and was located in the middle of the ureters, two double J stents were inserted. The lesion was excisioned in its integrity and a continuous two layers bladder suture was performed.
Measurements and Main Results: Surgical duration was three hours, with minimal blood loss and no complications. Patient was discharged ninety-six hours after surgery. Pathology report confirmed endometriosis.
Conclusion: Bladder endometriosis may significantly interfere with patients' quality of life. Preoperative cystoscopy and double J stent insertion are fundamental for surgical planning and safety of large endometriotic lesions' resection. A multidisciplinary approach is essential to provide a proper endometriosis treatment.

8117 OB/GYN Clinician Training in Addressing Sexual Trauma

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Study Objective: To assess OB/GYN clinicians' prior training in screening and discussing sexual trauma (ST) with patients as well as preferences for future training modalities.
Design: A 50-item questionnaire was distributed electronically.
Setting: N/A.
Patients or Participants: 129 practicing OB/GYN members of the American Association of Gynecologic Laparoscopists or the International Pelvic Pain Society were surveyed.
Interventions: N/A.
Measurements and Main Results: Although 93.8% of participants believed discussing ST is part of their role as a clinician, fewer participants (69.8%) reported that they routinely screen patients for a history of ST in practice. Lack of relevant training was a commonly cited barrier to such discussions, with only 44.2% of the total cohort reporting that they had received any training on ST. In those who received training, residency

(59.3%) and on-the-job training (42.1%) were the most common sources with only 28.1% receiving training in medical school. Most participants (87.6%) agreed that formal training on addressing ST is important for OB/GYN clinicians and 74.4% were either very interested or interested in pursuing further training. Lecture and computer-based modules were the preferred modalities for further training.
Conclusion: Despite lack of prior training in addressing ST with patients, there was high interest in OB/GYNs for further training on ST and future efforts should focus on incorporating in-person and computer-based content into continuing education.

8118 A Conservative Tailor-Made Approach on Treating Bowel Endometriosis

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Study Objective: To display how the surgical inclination to perform a sub-radicle shaving procedure in place of resection and Anastomosis in cases of non-mucosal colonic involvement of endometriosis can lead to significantly better outcomes for the patient's quality of life.
Design: Based on empirical understanding of the authors following 1000+ surgeries of colonic involvement of endometriosis, they have formed their opinions around radicalization of procedures in cases of DIE involving the colon.
Setting: The patient is positioned in the dorsal lithotomy in Trendelenburg position. Primary tracer is through the umbilicus, 3 operative ports are used, 2 at respective right and left flank and middle at supra pubic port.
Patients or Participants: The learnings presented in this video have been compiled over several years with observations from numerous surgeries following close observations of patient recovery curves and reports on quality of life. For the purpose of simplicity, the author presents a single case of colonic involvement to elucidate the argument.
Interventions: The surgery displayed in this video presentation is a laparoscopic surgery for a case of colonic involvement in deep infiltrating endometriosis
Measurements and Main Results: Surgical excellence and an inclination to perform sub-radical procedures can help with the same level of disease minimization while ensuring the patient a far better outcome and post-surgical quality of life
Conclusion: Recent trends in surgery have led to an increase in resection procedures even in candidates that could undergo rectal shaving. While it is easy to believe that resection is a more total procedure and reduces the risk of diseases recurrence, it comes at the cost of long recovery times and often longer lasting repercussions, both of which can be avoided with almost equal recurrence avoidance in some candidates that qualify for rectal shaving.

8120 Differences in OB/GYN Clinician Comfort and Barriers in Addressing Sexual Trauma

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Study Objective: To assess OB/GYN clinician comfort and barriers in addressing sexual trauma (ST).
Design: A 50-item electronic questionnaire.
Setting: N/A.
Patients or Participants: 129 practicing OB/GYN clinician members of the American Association of Gynecologic Laparoscopists or the International Pelvic Pain Society were surveyed.
Interventions: N/A.
Measurements and Main Results: Ninety-four percent of participants believed discussing ST is part of their role as clinicians, although only 69.8% reported routinely screening for ST and 71.3% indicated at least one barrier to discussing ST with patients. The most common barriers listed included lack of proper resources or available referrals (70.7%), lack of training in discussing ST (60.9%), limited time with patients (58.7%) and fear of re-traumatization (56.5%). Although female participants reported more barriers in discussing ST when compared to male participants (85.3% v 57.1%, $p<0.0005$), they were also more likely to screen patients for a history of ST (80.8% v 52%, $p=0.001$). Younger participants were more likely to report barriers in discussing ST when compared to older participants ($p<0.05$), and clinicians in training had a significantly higher interest in receiving further training on ST when compared to attending physicians ($p<0.05$). American OB/GYN clinicians were more likely to believe discussing ST to be a part of their role when compared to international clinicians (97.9% v 87.1%, $p=0.03$). Additionally, American clinicians were more likely to screen patients for a history of ST and had significantly higher scores on a Likert scale of 0-10 for both comfort and preparedness in addressing ST compared to international clinicians ($p<0.05$).
Conclusion: Despite barriers, in this study female and American clinicians were more likely to address, and comfortable with addressing, ST. Additionally, younger clinicians were more eager for further training opportunities. This study suggests a need for additional training on ST for OB/GYN clinicians.

8122 Butterfly Peritonectomy & Rectal Shaving in Deep Infiltrating Endometriosis Surgery

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Study Objective: To describe in detail the butterfly peritonectomy procedure developed by the author for effective dissection of the peritoneum in cases where deep infiltrating endometriosis has affected the peritoneum.
Design: The procedure has been developed over several years of the author performing laparoscopic surgeries on patients of DIE with involvement of the peritoneum; and has found this technique to be the most efficient, preserving, and effective for managing the involvement.
Setting: The patient is positioned in the dorsal lithotomy in Trendelenburg position. Primary tracer is through the umbilicus, 3 operative ports are used, 2 at respective right and left flank and middle at supra pubic port.
Patients or Participants: The procedure presented in this video has been compiled over several years with observations from numerous surgeries. For the purpose of simplicity, the author presents a single case of peritoneal involvement of endometriosis managed using butterfly peritonectomy.
Interventions: The surgery displayed in this video presentation is a laparoscopic surgery for a case of peritoneal involvement of endometriosis.
Measurements and Main Results: Adopting the Butterfly peritonectomy procedure for cases of peritoneal involvement see a reduced rate of recurrence in patients, reduced pelvic pain, and fertility preservation where applicable, along with effective safeguarding of the peripheral organs including lateral pelvic vessels, the ureter, the hypogastric nerve, and the rectum.
Conclusion: Butterfly peritonectomy enables surgeons to treat deep infiltrating endometriosis within the tricky folds of the peritoneum that engulfs some major vasculature, nerves, and organs. It provides the doctor with a fertility preserving approach to treating the disease thereby increasing adaptability within patients while also providing better surgical outcomes than before.

8130 Development and Integration of a Modified Mindfulness Curriculum Designed to Optimize Resident Surgical Performance

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Study Objective: This project aimed to develop and assess a feasible and meaningful modified Mindfulness-based Cognitive Therapy (MBCT) curriculum for surgical residents.
Design: A mixed methods embedded design was employed to assess feasibility and desirability of the curriculum. Secondary outcomes were measured in a pre- and post- intervention design using validated surveys to assess surgical performance, anxiety, confidence, and burnout.
Setting: Urban Canadian post-graduate training program in obstetrics and gynecology (Obstetrics and Gynecology).
Patients or Participants: Obstetrics and Gynecology residents in post-graduate years two to five were invited to participate.
Interventions: Residents participated in a 12-week modified MBCT curriculum tailored to busy surgical trainees. Focus groups and surveys were completed before, immediately after, and 3 months following completion of the MBCT course. Validated survey tools assessed surgical performance, anxiety, confidence, and burnout. Qualitative components assessed how mindfulness techniques are used in the operating room.
Measurements and Main Results: Twelve out of sixty-one residents enrolled in the program (20%) and eight completed the course (67%). There was a statistically significant decrease in anxiety ($p < 0.001$) and increase in surgical confidence ($p = 0.007$) following the MBCT curriculum. There was no change in burnout or surgical evaluations. The major qualitative themes identified that mindfulness tools were regularly incorporated into the operating room and had a perceived beneficial impact by residents. This change was sustained 3 months post intervention. The biggest barrier to mindfulness was time. Participants felt the residency program should support ongoing MBCT training to promote a positive culture shift in the department.
Conclusion: A modified MBCT program for surgical trainees is feasible and desirable for Obstetrics and Gynecology residents and positively impacts anxiety and surgical confidence. Trainees noted a sustained benefit from the course. Future work should focus on expanding this study to other surgical specialties and addressing barriers to mindfulness raised by participants.

8136 Robotic Interval Debulking with Radical Hysterectomy and Partial Urinary Bladder Resection for Locally Advanced Uterine Carcinosarcoma

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Study Objective: Demonstrate an interval debulking where meticulous retroperitoneal dissection, ureterolysis and intentional cystotomy with ureteral stenting were performed robotically in a patient with large volume uterine carcinosarcoma to avoid pelvic exenteration.
Design: Demonstration of robotic radical hysterectomy, retroperitoneal dissection, ureterolysis, and intentional cystotomy with ureteral stenting.
Setting: Tertiary referral center in New Haven, Connecticut.
Patients or Participants: Surgical video case presentation.
Interventions: 47-year-old with locally advanced uterine carcinosarcoma underwent neoadjuvant chemotherapy with TAP (paclitaxel, doxorubicin, and cisplatin), followed by an interval debulking surgery.
The uterus was enlarged with lower uterine segment tumor replacing the majority of the ectocervix. The posterior supratrigonal wall of the urinary bladder was extensively involved with the tumor. Extensive ureterolysis was performed from above the pelvic brim to the ureterovesical junctions in order to safely lateralize bilateral ureters.
Tedious bladder dissection was performed to prevent thermal injury. A modified (Type B) radical hysterectomy was performed, sacrificing the bladder pillars, distal ureterosacral ligaments, and 2 cm of upper vagina.
The posterior urinary bladder wall had clinically questionable residual tumor, therefore intentional cystotomy was performed to resect the involved segment. Six French, 24 cm double-J stents were placed to decrease the risk of ureteral fistula and stricture, given anticipation of post-operative pelvic radiation. The bladder was repaired in two layers.
The patient was discharged home on postoperative day 2, and received adjuvant chemotherapy and vaginal brachytherapy, per tumor board recommendations.
Measurements and Main Results: N/A.
Conclusion: Locally advanced uterine carcinosarcoma can be managed on an individualized basis with neoadjuvant therapy followed by non-exenterative interval laparoscopic/robotic radical surgery, with emphasis on quality-of-life.

8142 Diagnostic Accuracy Study of Sonography in Adenomyosis: A Study in Current Practice

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Study Objective: To estimate diagnostic accuracy of sonography in the diagnosis of adenomyosis in current practice, compared to pathology as a gold standard.
Design: Observational and retrospective diagnosis accuracy study.
Setting: Teaching hospital.
Patients or Participants: Women managed by hysterectomy for benign pathology from January 2015 to November 2018.
Interventions: Preoperative pelvic sonography reports were collected, including details on diagnosis criteria for adenomyosis. Sonographic findings were compared to pathological results of hysterectomy.
Measurements and Main Results: We included 510 women, 242 had adenomyosis at pathological examination. The pathological prevalence of adenomyosis was 47.4% in this study.
A preoperative sonography was available for 89.4% of women, with a suspicion of adenomyosis in 32.7%.
In this study, sensitivity is 52%, specificity 85%, positive predictive value 77%, negative predictive value 86% and accuracy 0.38.
Conclusion: Pelvic sonography is the first non-invasive exam used in gynecology. It is also the first recommended examination for the diagnosis of adenomyosis because of its acceptability and its cost, even if diagnosis' performances are moderate. However, these performances are comparable to MRI's performances. The use of a standardized sonographic classification could improve and harmonize the diagnosis of adenomyosis.

8144 Laparoscopic Robot-Assisted Hysterectomy with Vaginal Specimen Extraction Using Excite Technique of a Large Uterus

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Study Objective: Demonstrate a safe and didactic step-by-step hysterectomy of a leiomyoma large uterus using robotic platform and its vaginal specimen removal using Extracorporeal C-Incision Tissue Extraction (ExCITE) technique.

Design: Case report illustrated with a video.
Setting: Patient was placed in semi gynecological position, arms alongside the body and legs 80 grades abducted in adjustable leggings. Three 8mm robotic portals were placed on umbilical scar and both flanks. One additional 5mm portal was set in the right flank, for laparoscopic assistance.
Patients or Participants: 48-year-old woman reports abdominal bulge and pelvic pain for 6 months, with progressive worsening, radiating to lumbar region and legs. She also reports increased menstrual flow, with important loss of quality of life.
MRI of the pelvis showed uterus with estimated volume of 920 cm^3, heterogeneous myometrium due to multiple fibroids, the largest with $9.0 \times 6.6 \times 6.5$ cm (vol 200 cm^3), vascularized, determining compression on the upper wall of the bladder.
Interventions: Robot-assisted laparoscopic total hysterectomy was indicated. In the abdominal inventory, an 8x enlarged uterus was observed with multiple intramural and subserosal myomas, as well as thin adhesions between mesorectal and posterior uterine wall. Procedure was performed safely with practically no blood loss at all, and uterus was removed by vaginal access, with cold-knife morcellation, using ExCITE technique.
Measurements and Main Results: We obtained a safe and efficient surgical treatment on a large uterus hysterectomy using robotic surgery, with specimen removal by cold-knife morcellation.
Patient evolved with complete resolution of symptoms and satisfactory postoperative recovery.
Conclusion: We showed with our case report a safe and reproducible step-by-step of a large uterus robotic hysterectomy, showing that robotic platform can be an important tool when dealing with challenging large uterus. Moreover, large specimen removal, which can also be tricky, can be easily and safely performed using ExCITE technique.

8148 Comparison of Surface Area Covered by Intrauterine Foley Catheter vs. T-Shaped Intrauterine Device Following Hysteroscopic Adhesiolysis

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Study Objective: To visualize the surface area covered by a T-shaped IUD versus that of a pediatric-sized foley catheter following hysteroscopic adhesiolysis for Asherman's Syndrome.
Design: Visual demonstration of hysteroscopic adhesiolysis with scissors, followed by the insertion of either a copper-T IUD or a size 8 Foley catheter.
Setting: N/A.
Patients or Participants: Case series (2 patients).
Interventions: Hysteroscopic adhesiolysis was performed with 5F hysteroscopic scissors, starting from the most distal adhesions and progressively moving towards the uterine fundus. In Case 1, a copper-T IUD was inserted with the copper coil removed to prevent unwanted inflammatory effects. In Case 2, a size 8 Foley catheter was inserted, and the balloon progressively inflated with 1ml, 2ml, and finally 3mL of sterile water.
Measurements and Main Results: The copper-T IUD covered a much smaller proportion of the endometrial cavity compared to that covered by the inflated foley catheter.
Conclusion: This video visually demonstrates the relatively small surface area occupied by the T-shaped IUD compared to the area covered by a pediatric-sized Foley catheter. A Foley catheter with the balloon inflated with at least 3mL of sterile water occupies more space and therefore can separate the endometrial walls much more effectively than a T-shaped device, potentially contributing to less IUA formation. Further research comparing these two alternatives in the prevention of IUA reformation are necessary.

8154 Comparison of Surgical Outcomes of Hysterectomy by Vaginal Notes Versus Single-Port Access (SPA) Surgery

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Study Objective: The objective of the present study is to compare the patient characteristics, operative details, and post-operative outcomes among patients who underwent vNOTES against those who underwent SPA laparoscopic surgery for benign gynecologic diseases.
Design: Prospective outcome study.
Setting: Tertiary university teaching hospital.
Patients or Participants: The patients who were planned to undergo vNOTES or SPA laparoscopic surgery between April 2020 and June 2021 were prospectively enrolled. The surgical method was determined by a single surgeon after the evaluation of imaging results and physical exams. Those who demonstrated favorable pelvic conditions without any evidence of adhesion were scheduled for vNOTES.
Interventions: vNOTES hysterectomy vs. SPA TLH.
Measurements and Main Results: A total of 33 patients underwent vNOTES hysterectomy while 40 patients received SPA laparoscopic hysterectomy. All surgeries were performed by one surgeon. The proportion of the patients who had history of vaginal delivery was significantly higher in the vNOTES group. The operative time for port installation was significantly longer in the vNOTES group, but the total operative time was shorter in the vNOTES group compared to the SPA group. The post-operative pain scores 12 hours after the operations were also significantly less in the vNOTES group. Other surgical information and immediate post-operative outcomes were comparable between the two groups.
Conclusion: The present study demonstrated that the early operative outcomes of vNOTES hysterectomy were comparable to those of SPA hysterectomy. It also highlights the importance of adequate patient selection when determining surgical methods based on imaging results and physical exams.

8168 Umbilical Endometriosis and Vaginal Stump Endometriosis Developing after Total Laparoscopic Hysterectomy

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Study Objective: Even when endometriotic lesions in the pelvis are mild, they can survive in the vaginal stump and the trocar port-site after total laparoscopic hysterectomy. It is difficult to preoperatively assume the presence of fine lesions in the Douglas pouch when endometriosis is not detected elsewhere from imaging findings. Endometriotic lesions may survive in the vaginal stump, even in the absence of endometriosis in the uterus or adnexa.
Design: Case Presentation.
Setting: Yokohama City University.
Patients or Participants: A patient with less common/rare site endometriosis.
Interventions: N/A.
Measurements and Main Results: A 40-year-old G0P0 presented with multiple uterine leiomyomas. Because of exacerbated hypermenorrhea, the patient underwent total laparoscopic hysterectomy and bilateral salpingectomy. Intraperitoneal findings included an approximately 1-cm endometriotic lesion in the peritoneum of the Douglas pouch, and partial adhesion of the rectum to the broad ligament. The vaginal canal was incised, and the uterus was transected, transvaginally morcellated and removed from the body cavity. Pathological examination revealed uterine leiomyoma, with no salpingeal abnormalities or endometriotic lesions. At 2 and 5 months postoperatively, the patient reported monthly genital bleeding; however, no apparent abnormalities were clinically observed. At 9 months postoperatively, the patient still experienced similar genital

bleeding and noticed pain that occurred around the umbilicus simultaneously. Colposcopy revealed several red endometriosis-like lesions in the vaginal stump. The patient was eventually diagnosed with vaginal stump endometriosis. In addition, periodic pain appeared in the umbilical region as well, and the presence of endometriosis on umbilical port-site was suspected. Magnetic resonance imaging showed the umbilical trocar port-site endometriosis. Oral dienogest was started 11 months after surgery and maintained, and the patient's symptoms almost resolved after 5 months.
Conclusion: When patients complain of periodic genital bleeding or abdominal pain after total laparoscopic hysterectomy, vaginal stump and port-site endometriosis should be suspected. Vaginal stump endometriosis can be histologically diagnosed using colposcopy-guided biopsy, and dienogest may relieve symptoms.

8169 National Trends and Outcomes of Surgical Treatment of Tubal Ectopic Pregnancy

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Study Objective: To assess the national trends in the use of salpingostomy versus salpingectomy for minimally invasive and open surgical treatment of ectopic pregnancy.
Design: Retrospective cohort
Setting: National Surgical Quality Improvement Program Database.
Patients or Participants: Women treated surgically for tubal ectopic pregnancy between 2014 and 2019. Surgical treatment was further defined as laparoscopic versus open and salpingostomy versus salpingectomy.
Interventions: Current Procedural Terminology codes were used to identify cases. Variables including age, ethnicity, body mass index, comorbidities, blood transfusion, and American Society of Anesthesiologists classification system scores were collected.
Measurements and Main Results: 11, 267 patients were included. 89.3% had a salpingectomy and 10.7% had salpingostomy. Over the years, the rate of salpingectomy increased while that of salpingostomy decreased (86.8%, 89.1% and 91.2%) and (13.1%, 10.9% and 8.8%) every 2 years, p-value <0.001. The rate of laparoscopic treatment increased (from 84.3% to 89%) while that of laparotomy decreased (from 15.7% to 11%) (p-value <0.001). Adverse perioperative outcomes were more likely with salpingostomy compared with salpingectomy (4.6% versus 2.7%, p<0.001). After adjusting for confounders, salpingostomy patients had 79% higher risk for composite adverse outcomes (aRR 1.79, 1.35-2.39) in comparison to those who underwent salpingectomy. These differences were **primarily driven** by higher rates of readmission and re-operation.
Conclusion: Our study shows a trend away from salpingostomy from 2014-2019. Salpingostomy is associated with worse perioperative outcomes, specifically higher reoperation and readmission rates.

8182 Does Menopausal Status Impact Pain Perception during in-Office Hysteroscopy? Findings from a Single-Center Study

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Study Objective: Hysteroscopy is considered gold standard for investigation of intrauterine pathologies. When performed in-office, patients forego the use of anesthesia and other risks associated with operating room procedures. However, fear of pain during an in-office procedure remains a deterrent factor. Previous studies have suggested that menopause is associated with increased pain during in-office hysteroscopy. The goal of our study is to evaluate the impact of menopausal status on perceived pain level during in-office hysteroscopy at our institution.
Design: We identified women who underwent in-office hysteroscopy using the vaginoscopy "no touch" technique at two university-affiliated clinics at our academic institution. Menopause was defined as 12 months of amenorrhea in the absence of other biological or physiological causes. At the conclusion of the procedure, perceived pain level during the procedure was self-reported on a scale from 0 to 10.
Setting: Hysteroscopies were performed in office procedural rooms equipped with gynecologic beds with stirrups. Patients were positioned in dorsal lithotomy position.
Patients or Participants: A total of 80 women were included, among which 31 patients (38.8%) were postmenopausal and 49 patients (61.3%) were premenopausal.
Interventions: Hysteroscopies were performed without anesthesia, using a rigid 5 mm diagnostic hysteroscope with a 30o optic (Bettocchi KARL STORZ) and normal saline as distention media at gravity.
Measurements and Main Results: Statistical analysis was performed via independent-sample t-test with significance set at 0.05. Average pain level was 2.45 in postmenopausal patients and 2.22 in premenopausal patients. Postmenopausal status was not a statistically significant risk factor for worse pain perception during in-office hysteroscopy ($p = 0.67$).
Conclusion: Although previous studies have described a correlation between menopausal status and increased severity of pain during in-office hysteroscopy, our study did not reveal similar results. Further studies are necessary to identify risk factors that influence the pain experienced by patients during in-office hysteroscopy to better guide gynecologists when planning diagnostic approaches to intrauterine pathologies.

8186 Intro to Apical Support: Laparoscopic Suspension for Uterovaginal Prolapse

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Study Objective: To provide residents, fellows and attending faculty with a straightforward and simple procedure for providing apical support at the time of laparoscopic surgery.
Design: N/A.
Setting: University Health Network
Patients or Participants: Persons with mild apical prolapse undergoing a laparoscopic procedure or needing concomitant surgery at the time of reconstructive pelvic surgery.
Interventions: Laparoscopic Uterosacral Vault Suspension using permanent suture material.
Measurements and Main Results: N/A.
Conclusion: Laparoscopic uterine-preserving uterosacral vault suspension is a valid option for appropriately selected patients. Women with anterior and mild to moderate apical prolapse may benefit greatly with this concomitant procedure. The uterosacral ligaments provide a strong supportive tissue for vaginal vault suspension.

8189 "Failed CS-BS" a Role for vNOTES in Patient with 4 Prior Cesarean Sections and Severe Adhesive Disease Desiring Sterilization

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Study Objective: To demonstrate the utility of vNOTES for opportunistic bilateral salpingectomy for permanent sterilization after failed attempt at bilateral tubal ligation at the time of previous Cesarean section.
Design: Stepwise demonstration with narrated video footage.
Setting: vNOTES opportunistic bilateral salpingectomy for permanent sterilization after failed bilateral tubal ligation during previous Cesarean section.
Patients or Participants: 31-yo G4P3013 with 4 prior Cesarean sections desiring permanent sterilization, BMI 38.
Interventions: During previous Cesarean section, bilateral adnexa unable to be accessed due to dense adhesions from previous surgeries. Patient to have vNOTES instead of conventional laparoscopy.
Measurements and Main Results: Patient underwent a successful vNOTES bilateral salpingectomy, with pathology confirming bilateral fallopian tubes.
Conclusion: vNOTES bilateral salpingectomy is a reasonable alternative to conventional laparoscopy in patients with severe adhesive disease.

8190 Laparoscopic Management of Large Vesico-Vaginal Fistula(VVF)- Case Report

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Study Objective: To repair Vesico-Vaginal Fistula (VVF) laparoscopically.
Design: Case presentation of laparoscopic surgical correction of VVF.
Setting: Tertiary care laparoscopic center.
Patients or Participants: A case of VVF that came to us post open hysterectomy with continuous dribbling of urine was included. Specific history was taken. Diagnosis of VVF was made with Vesico-fistulogram. Size was 8 mm.
Interventions: Correction was done 4 months after the hysterectomy. Cystoscopy was done prior to the procedure to look for the location of fistula and the patency of both ureteral orifices. The fistula was at the trigone of the bladder. Conventional laparoscopic repair was done by modified O'Conner's technique under GA. Catheter was placed post-surgery for 4 weeks.
Measurements and Main Results: We evaluated the post-op patient with regular follow-up after 1, 2 and 4 weeks with scan and urine culture. Patient was put on appropriate antibiotics depending upon the culture report. Catheter removed 4 weeks later, and the patient followed up regularly for vaginal discharge. There was no vaginal discharge. Cystoscopy was done after 2 months, bladder was normal.
Conclusion: Laparoscopic modified O'Conner's technique for VVF gives a promising outcome and patient satisfaction.

8201 The Identifying Renal Artery Variant during Retroperitoneal Laparoscopic Para-Aortic Lymphadenectomy

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Study Objective: To demonstrate of identifying one of the renal artery variants, triple renal artery in left during laparoscopic para-aortic lymphadenectomy
Design: Case study.
Setting: University hospital in Korea.
Patients or Participants: A 54-year-old Korean woman with postmenopausal bleeding and thickened endometrium> 3cm presented to our department. The histopathology of biopsied endometrium revealed grade 2 endometrioid adenocarcinoma. The preoperative MRI shows an about 6cm sized large volume of tumor within the endometrial cavity.
Interventions: Laparoscopy.
Measurements and Main Results: We perform the laparoscopic staging surgery for endometrial cancer. Firstly, we performed peritoneal washing cytology, LAVH, BSO, pelvic lymphadenectomy. We designated four area for para-aortic lymphadenectomy. During the procedure in area 4, it was confirmed that two left renal arteries were derived from the trunk of the aorta below the left renal vein. The left lower segmental artery was derived from the middle part of the inferior mesenteric artery and left renal vein. The middle segmental artery was derived just below left renal vein. The left main renal artery was located on the dorsal side of the left renal vein at its normal position. We carefully resected the para-aortic lymph nodes to prevent variant renal artery damage.
Conclusion: Laparoscopy is a feasible and safe approach to diagnosis of vascular anomaly during para-aortic lymphadenectomy for gynecologic malignancies. It is very important for the gynecologic oncologist to have knowledge of retroperitoneal vascular anatomy, experience in laparoscopic surgery, and an accurate surgical technique to avoid vascular injury during laparoscopic para-aortic lymphadenectomy.

8219 Laparoscopic Access in Patients with Large Ovarian Cysts

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Study Objective: Minimally invasive approaches are preferred in the surgical management of large ovarian cysts but gaining abdominal access can pose significant challenges for the gynecologic surgeon. Our objective is to review abdominal entry options in women with large ovarian cysts and demonstrate an approach we have successfully used in a recent case at our institution.
Design: N/A.
Setting: OR.
Patients or Participants: 87-year-old G0 female with 20 cm left ovarian cyst, palpated above the umbilicus.
Interventions: laparoscopic LSO for 20 cm ovarian cyst using mini-laparotomy and protector-retractor system for abdominal access.
Measurements and Main Results: N/A.
Conclusion: Combining a mini-laparotomy at the umbilicus using a protector-retractor system allows the gynecologic surgeon to complete most of the procedure laparoscopically. This approach also allows for extraperitoneal drainage of cyst contents, thereby minimizing intra-peritoneal spillage, as well as for easy specimen removal.

8238 Approach to Dense Anterior and Posterior Adhesions during Laparoscopic Hysterectomy

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Study Objective: This video demonstrates surgical techniques for dense anterior and posterior adhesions during laparoscopic hysterectomy.
Design: Case report.
Setting: Academic hospital.

Patients or Participants: Two patients with dense uterine adhesions. Patient #1 had dense anterior uterine adhesions from a history of 3 prior cesareans. Patient #2 had dense posterior uterine adhesions from deep infiltrating endometriosis of the anterior rectosigmoid colon.
Interventions: A total laparoscopic hysterectomy was completed for both patients utilizing specific techniques to lyse dense adhesions to the uterine corpus. Techniques included 1) starting the dissection on the side of the uterine corpus opposite of the dense adhesions, 2) identifying the uterine manipulator colpotomy cup between the adhesions and the uterine vessels, 3) tunneling behind the adhesions along the colpotomy cup, and 4) completing the dissection medially and cephalad.
Measurements and Main Results: Total laparoscopic hysterectomies were completed in the setting of dense adhesions without unintended injury to surrounding structures.
Conclusion: This video demonstrates surgical techniques including four key steps that can be utilized during laparoscopic hysterectomy for both anterior and posterior adhesions to the uterine corpus.

8244 Laparoscopic Approach to Endometriosis and Fibrosis in the Lateral Pelvic Sidewall

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Study Objective: To explore surgical techniques and anatomic spaces in the sidewall to assist with difficult pelvic sidewall dissections due to endometriosis and fibrosis.
Design: Surgical video.
Setting: Tertiary care hospital.
Patients or Participants: Patient is a 32-yo G0 with pelvic pain and known stage IV endometriosis desiring definitive surgical management.
Interventions: Patient underwent total laparoscopic hysterectomy, right oophorectomy, right ureterolysis and lysis of adhesions. Due to dense right sidewall endometriosis and fibrosis, the medial and lateral pararectal spaces were developed, the ureter was identified, and extensive ureterolysis was performed. Pre-operative ureteral stents were utilized to assist with ureter identification.
Measurements and Main Results: The ureteral stents were removed immediately post-operatively and patient was discharged home the same day. She had an uncomplicated post-operative course with improvement in her pain symptoms.
Conclusion: This video demonstrates the laparoscopic approach to endometriosis within the sidewall and demonstrates safe dissection techniques to avoid injury to key structures.

8250 Two Approaches to Laparoscopic Removal of Essure® Coils: Salpingectomy and Cornuectomy

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Study Objective: To describe two uterine-sparing methods for laparoscopic Essure® coil removal.
Design: Demonstration of surgical steps involved in laparoscopic removal of Essure® coils.
Setting: University academic hospital.
Patients or Participants: The patient is a 39-year-old G1P1 with history of Essure® system sterilization presenting with chronic pelvic pain.
Interventions: Laparoscopic bilateral Essure® coil removal via bilateral salpingectomy and en bloc cornuectomy.
Measurements and Main Results: N/A.
Conclusion: Laparoscopic Essure® coil removal is a practical uterine-sparing option with no difference in perioperative outcomes between cornuectomy and salpingectomy alone.

8258 Does Uterine Size Matter? the Relationship between Surgeon Volume, Surgical Approach, and Uterine Weight for Benign Hysterectomy.

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Study Objective: To assess the relationship between surgeon volume and surgical approach for benign hysterectomies across increasing uterine weights.
Design: Retrospective cohort study.
Setting: Hospitals in the Michigan Surgical Quality Collaborative (MSQC) registry between July 2012 and April 2021.
Patients or Participants: Patients undergoing benign hysterectomy.
Interventions: Hysterectomy.
Measurements and Main Results: For each hysterectomy, surgeon volume was determined by the number of hysterectomies contributed to the MSQC registry by the surgeon in the calendar year. Cases were classified into tertiles by surgeon volume. Multivariable logistic regression with interaction analysis was used to determine the likelihood of undergoing a minimally-invasive hysterectomy (MIH) by surgeon volume and uterine weight.
Of the 59,356 patients, 47,149 (79.4%) patients underwent MIH and 12,207 (20.6%) underwent abdominal hysterectomy. The proportion of minimally-invasive hysterectomy (MIH) decreased with increasing uterine weight. Hysterectomies performed by high- and intermediate-volume surgeons were more likely to be minimally-invasive versus those performed by low-volume surgeons (high-volume: aOR 2.13 [95% CI 1.86-2.44]; intermediate-volume: aOR 1.74 [95% CI 1.52-2.00]). For hysterectomies performed by high-volume surgeons, the propensity for a minimally-invasive approach was amplified for uterine weights between 250-2000g, with the maximum interaction effect between 1000-2000g (aOR 4.23 [95% CI 2.57-6.96]). There was no interaction effect among weights below 250g or above 2000g.
Conclusion: Hysterectomies performed by high-volume surgeons are more likely to be associated with a minimally-invasive approach compared to those performed by low-volume surgeons among all uterine weights, but especially among uteri weighing between 250-1999g.

Proportion of patients who underwent MIH by associated surgeon volume and uterine weight (% (95% CI))

Uterine weight (grams)	Low-volume	Intermediate-volume	High-volume
0-99	85 (84-86)	91 (90-91)	91 (91-92)
100-249	81 (80-82)	89 (88-89)	90 (89-91)
250-499	59 (57-61)	73 (71-75)	80 (78-82)
500-749	34 (31-37)	52 (47-55)	63 (59-68)
750-999	23 (18-26)	39 (33-43)	45 (39-52)
1000-1999	8 (6-10)	22 (16-24)	33 (29-40)
2000-2999	2 (1-2)	12 (5-20)	14 (6-21)

8281 Anterior Cul-De-Sac Obliteration: Dissection of a Difficult Bladder Flap

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Study Objective: This video highlights techniques for dissection of an obliterated anterior cul-de-sac in a patient undergoing hysterectomy.
Design: N/A.
Setting: This surgery was performed at a tertiary academic referral center.
Patients or Participants: This is a 56-year-old with history of 3 cesarean sections and a large central anterior fibroid who has failed medical management for abnormal uterine bleeding.
Interventions: The patient underwent a robotic-assisted hysterectomy with bilateral salpingo-oophorectomy. The fibroid was densely involved in adhesions to the bladder flap area. The colpotomy cup was not visible. The posterior leaf of the broad ligament was incised to skeletonize the uterine artery. This posterior approach helped show both the artery and the colpotomy cup. The anterior leaf of the left broad ligament was dissected. Filmy serosal attachments along the fibroid were taken down. This process was repeated on the right side.
There were thick attachments near the adhesive band, and bleeding was encountered. To decrease the vascular supply to the uterus, bilateral uterine arteries were ligated. Subsequently, the band was taken down with minimal blood loss. This is typically the area of the thickest scar tissue. The surgeon can place an instrument inferior and lateral to the adhesions and create a tunnel to guide the dissection. We backfilled the bladder with sterile saline to clearly delineate the extent of the adhesions. Once the scar was incised, the bladder flap was further developed. The uterine arteries were separated and the colpotomy was completed. The vaginal cuff was closed, and the procedure was concluded.
Measurements and Main Results: The patient was seen for 3 years for medical management, and she opted for surgery due to ongoing symptoms. She was seen for a 6-week follow-up visit.
Conclusion: It is imperative to safely dissect the bladder away from the uterus in cases of anterior obliteration. Techniques include backfilling the bladder, approaching adhesions laterally and inferiorly, and de-vascularizing uterus.

8341 Implementation of Robotic Surgery in a Rural Setting: Impact on Need for Assistant Surgeon and Route of Hysterectomy

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Study Objective: Robot-assisted hysterectomy allows the surgeon improved visualization, range of motion, and ergonomics which in some cases may obviate the need for an assistant surgeon. In rural hospitals where physician shortages remain a major barrier to care, reducing the number of surgeons necessary to perform hysterectomy would be of significant consequence. We sought to evaluate the impact of robotic surgery on the need for an assistant surgeon at time of hysterectomy at a rural community hospital.
Design: We performed a retrospective chart review of hysterectomies performed at a rural community hospital by general gynecologists, focusing on the 12-month period prior to, and the 12-month period 2 years following, implementation of a robotic surgical program. We chose 2 years to allow for gradual surgeon adoption of robotic technology. Our primary outcome was need for an assistant surgeon at time of hysterectomy. Our secondary outcome was route of hysterectomy. Billing records were cross-referenced against the medical record, and statistical analyses performed.
Setting: A rural community hospital in northcentral Pennsylvania.
Patients or Participants: Patients undergoing hysterectomy by general obstetrician-gynecologists.
Interventions: All modes of hysterectomy (abdominal, laparoscopic, robotic, and vaginal).
Measurements and Main Results: Following implementation of a robotic surgical program we observed a statistically significant decrease in the presence of an assistant surgeon at the time of hysterectomy from 86.7% to 29.7% ($p<0.05$). The percentage of hysterectomies performed by minimally-invasive technique (laparoscopic, robotic, and vaginal) versus open technique (total abdominal) increased from 67.0% to 87.4% following implementation of a robotic surgical program ($p<0.05$).
Conclusion: Access to robotic surgical technology reduced the need for an assistant surgeon at time of hysterectomy and increased the rate of minimally-invasive hysterectomy performed. These findings are of particular relevance to rural hospitals facing physician shortages.

8342 Infertility and Retained Products of Conception (RPOC): A Hysteroscopic Approach to Diagnosis and Treatment

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Study Objective: To provide a video review highlighting the advantages of a hysteroscopic approach to the removal of retained products of conception (RPOC) in the setting of infertility with three recorded video case presentations.
Design: Topic review with a video compilation of three patient cases with a history of infertility undergoing hysteroscopic removal of RPOC.
Setting: Office setting and operating room of a community-based hospital.
Patients or Participants: Three female patients undergoing hysteroscopy with a history of infertility and final diagnosis of RPOC on pathology.
Interventions: Operative hysteroscopy using a tissue shaver device of RPOC.
Measurements and Main Results: Recording of a completed procedure of a hysteroscopic resection of RPOC using a tissue shaver device in three female patients with infertility.
Conclusion: After reviewing the video presented, a basic understanding of how the utility of hysteroscopy can be an effective method of diagnosing and RPOC while demonstrating reassuring pregnancy and live birth outcomes in patients with infertility or desiring future fertility.

8344 The Impact of Surgeon Volume on Laparoscopic Hysterectomy Outcomes

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Study Objective: To evaluate the impact of surgeon volume on outcomes after laparoscopic hysterectomy for benign indications.
Design: Retrospective chart review.
Setting: Single tertiary care academic institution.
Patients or Participants: A total of 494 patients who underwent laparoscopic hysterectomy performed by 22 benign gynecologic surgeons.
Interventions: Laparoscopic or robotic-assisted hysterectomy performed between March 2019 and April 2020.
Measurements and Main Results: Of the total 494 benign laparoscopic hysterectomies performed, 448 hysterectomies were performed by high volume surgeons (9 surgeons) and 46 hysterectomies were performed by

low volume surgeons (13 surgeons). High volume was defined as 12 or more hysterectomies completed during the study year. Low volume surgeons ranged from 1 to 8 hysterectomies performed during the study period. Demographic and preoperative characteristics were similar between groups except age (45 years vs 41 years, p=.033). The two groups had similar intraoperative characteristics including route of hysterectomy, operative time, estimated blood loss and uterine weight. Intraoperative complications were similar between groups including transfusion rates, viscus injury, and intraoperative consults. However, there was a significantly higher rate of intraoperative conversion to laparotomy in the low volume group (1% vs 9%, p=.004). Pathology results were similar between groups. No pathologic findings were seen in 16% of cases in the high-volume group and 26% of cases in the low volume group (p=.11). Endometriosis was confirmed on pathology similarly between groups (11% vs 9%, p=.78). Pathology outcomes of leiomyomas, adenomyosis, and endometrial hyperplasia were similar between groups. There were no differences in postoperative complications, emergency department visits, or readmissions.
Conclusion: Low volume surgeons had significantly higher rates of intraoperative conversion to laparotomy at time of laparoscopic hysterectomy. In this study, surgeon volume did not significantly impact other outcomes including pathology. However, a limitation of the study was the small sample size in the low volume group which was <10% of the cohort.

8346 Polypoid Endometriosis: A Distinct Variant

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Study Objective: To examine a case study of polypoid endometriosis and perform a literature review.
Design: Case Report.
Setting: Academic institution
Patients or Participants: 1 Patient.
Interventions: Surgical resection.
Measurements and Main Results: A 34-year-old nulliparous woman with complex adnexal masses and severe left hydronephrosis presented for consultation. Menarche occurred at 12 years-old, followed by regular monthly menses lasting 5 days. The patient reported multiple emergency room visits for severe dysmenorrhea and was taking combined hormonal contraceptives with good effect since adolescence. Of note, she had discontinued her contraceptives as she was trying to conceive. Examination revealed a non-obese female with bilateral lower abdominal tenderness to palpation. Initial labs showed elevations in CA125, HE4, and CA19-9. Imaging demonstrated a complex 7cm right adnexal mass with severe left hydronephrosis secondary to enhancing fibrosis in the left hemipelvis. This was suspicious for deep infiltrating endometriosis.
The patient underwent robotic bilateral ovarian cystectomy, excision of endometriosis, right salpingectomy, left ureteral reimplantation with psoas hitch, appendectomy, and cystoscopy. Stage IV endometriosis was noted intraoperatively. Intraoperative frozen pathology was benign. Her recovery was overall uncomplicated. Final pathology was consistent with polypoid endometriosis. Follow up imaging revealed recurrence of bilateral complex adnexal masses.
Conclusion: Polypoid endometriosis is an uncommon, distinct variant of endometriosis with histological features suggestive of an endometrial polyp. Unlike usual-type endometriosis, which commonly affects reproductive-aged women, polypoid endometriosis primarily affects older patients with a mean age of 52.5-years-old. Patients with polypoid endometriosis often present with mass effect or vaginal bleeding. It is characterized by a tendency to mimic neoplastic processes clinically, intraoperatively, and on gross examination. Polypoid endometriosis also demonstrates a high rate of recurrence after surgical excision, as seen in our case study. Given the ability of polypoid endometriosis to mimic malignancy, intraoperative frozen pathology may prevent a more extensive surgery and excessive resection in patients of childbearing age.

8355 Transvaginal Photobiomodulation for Treatment of Pelvic Pain Associated with Endometriosis: A Report from Clinical Settings

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Study Objective: To determine if transvaginal photobiomodulation (TV-PBM) decreases pain in women with endometriosis associated chronic pelvic pain (CPP).
Design: IRB approved before-after prospective cohort.
Setting: 24 US gynecology practices.
Patients or Participants: Women with endometriosis and pelvic pain lasting longer than 6 months.
Interventions: 8 TV-PBM treatments administered 1-2 times a week for 8 weeks
Measurements and Main Results: From 2019-21, 502 women with CPP received TV-PBM; 9.6% (n = 48) had endometriosis, all completed treatment and were included in this analysis. Pain was measured using the numeric rating scale (NRS) categorized as 0-1 no pain, 2-4 mild, 5-7 moderate, and 8-10 severe pain. The primary outcome was change in overall pelvic pain from baseline compared to after 8 treatments. Minimal Clinically Important Difference (MCID) was defined as pain reduction of ≥2 NRS points. After therapy, 14.6% (n=7) reported no change, 6.3% (n=3) worsened, 79.2% (n=38) improved by ≥1 point, and 58.3% (n=28) improved by ≥2 points. Among those who improved, average pain levels decreased as follows: overall pain MCID = -2.7, dyspareunia MCID = -3.0, pain with bowel movements MCID = -2.1, dysuria MCID = -3.3, pain with sitting MCID = -1.6, pain with standing MCID = -1.6, and pain with exercise MCID = -2.4. Compared to baseline, the percentage of women reporting moderate/severe pain decreased from 85.5% (n=41) to 43.8% (n=21).
Conclusion: In this study TV-PBM significantly reduced severity of pelvic pain in nearly 60% of women with endometriosis. All pain parameters improved; the largest decreases were noted in overall pelvic pain, dyspareunia, and dysuria. Additional controlled studies are needed to confirm these findings, however, in this preliminary analysis, the efficacy of TV-PBM, as it is currently being used in clinic practice, is promising.

8356 Robotic Surgery: Pelvic Mass Excision, Resection of Non-Communicating Uterine Horn, and Fulguration of Endometriosis

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Study Objective: To demonstrate surgical techniques for approaching an advanced case of endometriosis in a patient with a congenital uterine anomaly, large pelvic mass, and severe adhesive disease.
Design: A step-by-step explanation of the surgery.
Setting: Community Based Teaching Hospital, Operating Room.
Patients or Participants: 33-yo G0 with known unicornuate uterus with non-communicating uterine horn, dysmenorrhea, suspected endometriosis, infertility, congenital absence of right kidney.
Interventions: Chromotubation was first performed to evaluate if the patient had patent fallopian tubes. The pelvic mass was then decompressed and drained revealing multiple right ovarian cysts. Anatomical landmarks were identified with a retroperitoneal dissection and extensive lysis of adhesions. The bladder was backfilled intermittently to help identify surgical planes. A Keith needle was temporarily placed in the abdomen to

elevate the pelvic mass and aid in visualization. The pelvic mass and non-communicating uterine horn were resected. Hemostasis was achieved with electrocautery and suturing. Endometriotic implants in the pelvis and diaphragm were fulgurated and an appendectomy was performed due to extensive damage from endometriosis. All specimens were placed in a bag and removed through the umbilical port site. Post-operatively, the patient was started on progesterone therapy.
Measurements and Main Results: Successful completion of surgery, no complications, the patient reported improvement in her symptoms.
Conclusion: When dealing with severe adhesive disease, abnormal anatomy, and limited space due to a pelvic mass it is key to approach these cases in a stepwise fashion. Visualization can be optimized via temporary measures such as using a Keith needle. If irregular anatomy is noted, landmarks can be identified via the retroperitoneal dissection.

8383 Removal of Intrauterine Adhesions Using an Ultrasound-Guided Balloon Therapy

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Study Objective: To demonstrate a novel technique to treat intrauterine adhesions (IUAs) in an outpatient setting found at the time of saline infusion sonohysterography (SIS).
Design: N/A.
Setting: A single academic fertility center.
Patients or Participants: Patients found to have intrauterine adhesions on SIS during fertility evaluation or routine cavity assessment prior to embryo transfer.
Interventions: During an SIS, a balloon-tip catheter is inserted through the cervix into the uterine cavity. Saline is infused into the cavity to reveal the IUA. Under ultrasound guidance, the balloon is deflated, and the catheter is pushed toward the IUA where the balloon is then reinflated. Using a gentle sweeping motion in a repetitive cephalad-caudad manner on the external portion of the catheter, the balloon is used to mechanically disrupt the suspected IUA. This process can be repeated if necessary.
Measurements and Main Results: Resolution of IUAs.
Conclusion: This "see and treat" technique is a safe and cost-effective option for management of mild IUAs that can be performed in a single patient visit and may prevent the need for more invasive surgical procedures in the operating room.

8387 Instructional Video on Tandem Vaginal Cuff Closure

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Study Objective: To demonstrate the steps of tandem vaginal cuff closure, outline specific movements of the surgeon and assistant, and provide suggestions for efficient closure.
Design: Instructional Video.
Setting: Operating room of large academic hospital.
Patients or Participants: Single patient undergoing a laparoscopic vaginal cuff closure at the time of hysterectomy.
Interventions: In this technique, two surgeons close the vaginal cuff at the time of hysterectomy through an umbilical port for the 5mm camera and two 5mm lateral ports for instrumentation. This eliminates the need for fascial closure and improves cosmesis. The surgeon stands at the patient's left and holds the needle driver in the right hand. The surgeon positions the needle correctly to facilitate an efficient and effective cuff closure starting from the patient's right and proceeding toward the left. The direction of closure is from posterior to anterior. At least 5mm of vaginal mucosa is incorporated into each bite, and uterosacral and cardinal ligaments are incorporated bilaterally to provide support. A key component is to push the needle through the tissue, with over supination of the surgeon's wrist while lifting the needle cephalad. This over-supination allows better visualization and provides the correct angle for needle reloading. The assistant, standing on the patient's right, provides visualization, places the loop of the barbed suture over the needle, and manipulates the anterior or posterior cuff over the needle.
Measurements and Main Results: Complete and efficient vaginal cuff closure with incorporation of uterosacral and cardinal ligaments for support.
Conclusion: With the use of two skilled surgeons, we demonstrate the efficient movements required to carry out a tandem vaginal cuff closure.

8397 Metroplasty; A Case of Bicornuate Uterus

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Study Objective: Video presentation showing laparoscopic metroplasty.
Design: Case presentation with showing procedural techniques in detail.
Setting: Tertiary academic teaching hospital.
Patients or Participants: 29-yo G3P0 with history of a 16 and an 18 weeks pregnancy losses leading to evaluation and diagnosis of bicornuate uterus with no other identifiable cause of recurrent second trimester loss. Her past medical history is significant for polycystic ovarian syndrome, otherwise healthy with no surgical history.
US showed equal cavities in size and there is a small indentation about 2 cm at the top of the uterus.
Interventions: Hysteroscopy, followed by laparoscopic metroplasty.
Measurements and Main Results: Uncomplicated procedure with 3 months follow-up hysteroscopy showing normal cavity with no evidence of polyp, both ostia visualized, and secretory endometrium appreciated with no adhesions seen.
Conclusion: Surgical correction of bicornuate uterus is only recommended in patients with a history of poor pregnancy outcome after other potential causes have been ruled out. It is crucial to resect only the inter cavity segment to preserve normal size uterine cavity. Multi-layer myometrial closure is recommended.

8400 Distal Ureteral Resection with Ureteroneocystotomy; A Case of Robotic Assisted Laparoscopic Management of Ureteral Endometriosis

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Study Objective: Video presentation showing distal ureterectomy and reimplantation.
Design: Case presentation with showing procedural techniques in detail.
Setting: Tertiary academic teaching hospital.
Patients or Participants: 39-y.o. G6P3033 with past medical history of upper extremity deep venous thrombosis and surgical history of tubal ligation as well as endometrial ablation for menorrhagia, presented to the emergency room with right lower quadrant pain and was found to have right hydronephrosis and a 1.6 cm right ureterovesical junction mass on CT scan. She underwent a cystoscopy and right ureteric balloon dilation with stent placement with no evidence of bladder endometriosis. MRI showed a 1.6cm nodule at a low-intensity signal in T2-weighted sequences, suspicious for ureteral endometriosis.
Interventions: She underwent diagnostic laparoscopy with total hysterectomy and bilateral salpingectomy, robotic assisted distal ureterectomy

with ureteroneocytotomy and stent placement. Her anticoagulation was held 48h prior to the surgery and re-initiated the day after her surgery.
Measurements and Main Results: The stent was discounted at 8 weeks post-operative. At 12 weeks post-operative she had an ultrasound done with normal fin dings and resolved hydronephrosis.
Conclusion: Preoperative planning and multidisciplinary team approach to management of severe endometriosis affecting the ureter is of paramount importance. While medical management is often the first-line therapy for endometriosis, urinary tract involvement often represents advanced stage of the disease, thereby timely diagnosis and appropriate surgical intervention is required to avoid permanent kidney injury.

8402 Two-Port Total Laparoscopic Hysterectomy and Excision of Simple Endometriosis in a Transgender Male Patient.

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Study Objective: To provide an overview of a two-port total laparoscopic hysterectomy with bilateral salpingo-oophorectomy in a transgender male patient and to demonstrate the feasibility of excision of simple endometriosis by this approach.
Design: Surgical video. The American College of Obstetricians and Gynecologists recommends vaginal approach to hysterectomy, whenever feasible; however, in the transgender male patient, the vaginal approach to hysterectomy may pose technical challenges due to limited vaginal access: vaginal atrophy (when on testosterone therapy), lack of uterine descensus due to nulliparity that is common, and often times infrequent or no vaginal intercourse. Moreover, the frequent desire for salpingo-oophorectomy in this population can make the vaginal approach a challenging one. When patients have history of dysmenorrhea and/or pelvic pain, laparoscopy offers an adequate intrabdominal survey to diagnose and treat endometriosis, which is precluded with vaginal access alone.
Setting: Academic hospital with a referral-based practice for the transgender male patient who desire gender affirming surgery.
Patients or Participants: 35-year-old nulligravid trans male with gender dysphoria and history of severe dysmenorrhea prior to beginning testosterone therapy, who desires gender affirming surgery by hysterectomy and bilateral salpingo-oophorectomy.
Interventions: A 5 mm umbilical trocar is used for a 30-degree camera to maximize visualization. A 5 mm suprapubic trocar for the single operative instrument is placed above the level of the uterus fundus. Success of a two-port hysterectomy is achieved by having excellent uterine manipulation to generate appropriate counter traction on the uterus. The hysterectomy is completed in the standard fashion, and the excision of simple endometriosis is completed with a single instrument by using blunt and sharp dissection. The vaginal cuff is closed vaginally.
Measurements and Main Results: N/A.
Conclusion: A two-port laparoscopic approach avoids placement of ancillary trocars on the appropriate patient. This technique can be also used in the appropriate cis-gendered patients. Excision of simple endometriosis can be feasible with the two-port approach.

8407 Interstitial Ectopic Pregnancy: A Case Series with Practical Tips for Surgical Management

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Study Objective: To review current treatment options for interstitial ectopic pregnancy (IP), with a focus on surgical treatments. To review outcomes of three surgically managed cases of IP. To demonstrate practical tips for success in laparoscopic management of IP.
Design: A case series presenting three cases of surgically managed IP with guided explanation of surgical intervention using video.
Setting: Academic affiliated community hospital.
Patients or Participants: The 3 cases of IP evaluated and treated over the past year were included in the study.
Interventions: Two patients underwent laparoscopic cornual resection of IP and one patient underwent emergent abdominal repair of ruptured IP.
Measurements and Main Results: Estimated blood loss (EBL) for laparoscopic management of 6-week IP with preoperative uterine artery embolization (UAE) was 20ml; length of post operative length of stay (LOS) was 1 day. EBL for 13-week IP without embolization was 50 ml, post op LOS was 0 days. EBL for ruptured IP repaired via open approach was 1000ml including hemoperitoneum, post operative LOS was 2 days. Beta hCG was trended once per week post operatively for all patients. Both patients undergoing laparoscopic resection had negative HCG by week 4. The patient with ruptured IP had negative hCG by week 8; however, she did not complete testing between week 5-7; at 4 weeks her hCG was 17.
Conclusion: IP is sometimes a difficult diagnosis to make; a high index of suspicion is necessary. Laparoscopic surgery for IP is achievable using similar techniques as laparoscopic myomectomy for limiting perioperative blood loss and repair of the myometrial defect; Ultrasonic scalpel, vasopressin, delayed absorbable barbed suture. IP can often be treated laparoscopically, however laparotomy may be necessary in unstable patients with advanced gestation. Further investigation is necessary to determine the best practice for surgical management of IP.

8412 Effects of the COVID-19 Pandemic on Women Seeking Hysterectomy for Abnormal Uterine Bleeding

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Study Objective: Examine the effects of operating room closures during the COVID-19 pandemic for women undergoing hysterectomy for abnormal uterine bleeding (AUB) in a safety net hospital.
Design: Retrospective cohort analysis.
Setting: Academic County Hospital.
Patients or Participants: All patients 18 years or older undergoing a hysterectomy with the benign gynecology service for AUB from May 2018-December 2019 (pre-pandemic) and April 2020-November 2021 (pandemic) at our hospital. A total of 556 patients met inclusion criteria, 401 prior to, and 155 during the pandemic.
Interventions: Laparoscopic, abdominal, and vaginal hysterectomy.
Measurements and Main Results: Pandemic patients were more likely to have a lower starting Hemoglobin ($p < 0.05$), history of blood transfusion ($p < 0.05$) and a lower Hemoglobin nadir ($p < 0.05$) than patients prior to the pandemic. They were also more likely to be medically managed while awaiting surgery ($p < 0.05$). The average wait time between decision for hysterectomy and surgery date pre-pandemic was 30 days compared to 121 days during the pandemic ($p < 0.05$). While awaiting surgery, pandemic patients were significantly more likely to receive blood transfusions (OR 6.7, 95% CI 3.5, 12.8), return to the clinic (OR 21.1, 95% CI 12.6, 35.1), and be seen in the EC for AUB complaints (OR 6.6, 95% CI 3.8, 11.5) than pre-pandemic patients. When controlling for starting Hemoglobin, history of transfusion, Hemoglobin nadir, and use of medical management, this effect persisted, indicating that the length of time patients waited for surgery was significantly associated with the outcome measures.
Conclusion: Women needing a hysterectomy for AUB in our hospital waited three months longer for surgery during the pandemic compared to prior to the pandemic. Additionally, while awaiting surgery, patients were seen in the EC and office more frequently and required more blood transfusions. The effects of COVID have been far-reaching, and gynecologic care for our patient population has been significantly, negatively impacted.

8414 Jain Point a Viable Entry Port in Obese Patients with and without Previous Surgery

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Study Objective: To study the safety and efficacy of Jain Point as first blind entry port in obese patients with and without previous surgery.
Design: Retrospective analysis of 1233 cases done from January 2011 to April 1, 2022, done in a tertiary care center.
Setting: Patients in dorsal lithotomy position, surgery done under GA.
Patients or Participants: We had 1233 patients who were in BMI more than ≥30kg/m^2. Out of these 866 patients were between ≥30 − 35 kg/m^2, 273 patient between ≥35 - 40kg/m^2, and 94 patients were morbidly obese with BMI more than ≥40 kg/m^2. One third of the cases 36% (443) had previous surgeries open or laparoscopy.
Interventions: Jain Point has been designed to suit first blind entry in obese patients to avoid Major Retroperitoneal Vessels, viscera, adhesions and bowel as it lies in left paraumbilical region, 10 − 13 cm from the umbilicus. It is on a vertical line 2.5 cm medial to ASIS at level of umbilicus. We made entry in the study group of 1233 patients by Jain Point by Veress needle first. Long Veress needle is inserted in a vertical direction without needing to change the direction as in umbilical approach. We introduce 10 mm telescope under the vision of 5 mm telescope avoiding any adhesions or bowel.
Measurements and Main Results: All cases were entered through Jain Point by Veress first. There was some preperitoneal insufflation due to increased abdominal wall thickness which was tided over by longer trocars. No major vascular injury or bowel injury was noted, even in case of previous surgeries.
Conclusion: Jain Point is a viable option for first blind port entry in obese patients, with or without previous laparoscopy or open surgery.

8418 Fascial Closure Technique after Gynecologic Laparoscopic Surgery and Postoperative Pain: A Randomized Controlled Trial

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Study Objective: To compare postoperative pain between closing port site fascia > 10 mm via traditional direct method versus fascial closure device (FCD) in patients undergoing minimally invasive gynecologic surgery.
Design: Prospective, singled-blinded, randomized controlled trial. Primary outcome was pain on postoperative days (POD) 1, 2, 7, and 14.
Setting: Tertiary care academic affiliated hospital.
Patients or Participants: Patients 18 years undergoing laparoscopic or robotic gynecologic procedure with one port site > 10 mm for any indication (benign and malignant) were eligible. Patients were identified in preoperative holding and consented. 123 participants were enrolled from March 2021 to March 2022.
Interventions: Participants were randomized to fascial closure with FCD or traditional direct closure on the day of surgery. Postoperative pain scores were assessed using digital 100-point Visual Analog Scale. Fascial closure was timed, and narcotics utilized while admitted were converted into morphine equivalents per hour.
Measurements and Main Results: Descriptive statistics were run on all variables and group comparisons made using independent sample t-tests, chi-squares, or Mann Whitney U. 60 patients (48.8%) were randomized to FCD group and 63 patients (51.2%) to traditional direct closure. There was no statistical difference in pain scores between FCD (POD1: 60.27±22.90, POD2: 48.61±23.01, POD7: 33.60±24.12, POD14: 23.00±24.99) and traditional closure (POD1: 53.60±29.33, POD2: 26.94±28.59, POD7: 29.31±24.05, POD14: 18.57±24.62) groups or narcotic use in morphine equivalents per hour (1.54±1.11 vs 1.98±1.23, FCD and traditional closure, respectively). Length of fascial closure was statistically significantly lower using the FCD (*Mdn* = 77.0) compared to traditional closure (*Mdn* = 137.0), $p = .001$.
Conclusion: This study demonstrates no significant difference in postoperative pain scores at multiple time points or narcotic use between use of FCD versus traditional direct closure, but it does show a statistically significant lower fascial closure time using the FCD.

8419 Retrospective Review of Outcomes in Patients with Endometriosis and Colonic Segmental Resection (CSR) or Low Anterior Resection (LAR)

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Study Objective: To further the understanding of long-term outcomes of endometriosis patients requiring CSR/LAR. To improve counseling of patients with bowel endometriosis.
Design: Retrospective chart review at a single academic institution between 2000-2018 with 3-year follow-up of patients with CSR/LAR for endometriosis.
Setting: Clinic/OR.
Patients or Participants: 21 patients aged 18-45 at single academic institution between 1/1/2000 and 12/31/2018 with ICD9&10 codes of endometriosis AND CSR/LAR were included; 9 met criteria for endometriosis as indication for CSR/LAR were reviewed.
Interventions: CSR/LAR for the indication of bowel endometriosis and long-term effects.
Measurements and Main Results: Pre- and post-operative symptoms were categorized into GI (hematochezia, dyschezia, tenesmus, incontinence, incomplete evacuation of bowel, and pre-operative colonoscopy), GYN (dysmenorrhea, dyspareunia, pelvic pain, and infertility), and GU (dysuria, frequency, urgency, incontinence, and incomplete emptying).
Pre-operatively, GI symptoms: 3/9(33.33%) endorsed hematochezia and underwent a colonoscopy, 7/9(77.78%) dyschezia, and 1/9(11.11%) fecal incontinence. GYN: 7/9(77.78%) endorsed dysmenorrhea, 5/9(55.56%) dyspareunia, 9/9(100%) pelvic pain. GU: 1/9(11.11%) endorsed urinary incontinence.
Intraoperatively, 9/9(100%) underwent anastomosis, 3/9(33.33%) concurrent hysterectomy and 6/9(66.67%) oophorectomy. Average operative time was 165.8 minutes. Median EBL 50cc. Median days spent inpatient 3. Post-operatively, no complications were noted.
There was 88.89% decrease in pelvic pain and complete resolution of all other pre-operative symptoms of hematochezia, dyschezia, fecal incontinence, dysmenorrhea, dyspareunia and urinary incontinence.
Conclusion: We found a clinically significant reduction in symptoms of hematochezia, dyschezia, fecal incontinence, dysmenorrhea, pelvic pain, dyspareunia and urinary incontinence in patients who underwent bowel resection for the indication of endometriosis. In all patients who had hematochezia and underwent a colonoscopy with positive findings of lesions or masses, the pathology also returned positive for endometriosis. Therefore, if a patient has hematochezia on presentation or review of systems, it is important to consider a colonoscopy in work up and CSR/LAR.

8424 A Cost-Effective Cystoscopy after a Laparoscopic Hysterectomy

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Study Objective: Demonstrate the performance of a cost-effective cystoscopy using already available instruments.

Design: Video.
Setting: Operating room.
Patients or Participants: Three women undergoing a laparoscopic hysterectomy.
Interventions: Demonstrated cystoscopy performed using the 5mm 30-degree laparoscope as a cystoscope. Three different techniques are demonstrated to accomplish bladder distention prior to cystoscopy.
Measurements and Main Results: The cystoscopy was successfully performed using available tools.
Conclusion: There are multiple ways to quickly perform a cost-effective cystoscopy after a laparoscopic procedure.

8439 Differences in Outcomes between Percutaneous Image-Guided Cryoablation Versus Surgical Excision for Abdominal Wall Endometriosis

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Study Objective: To compare the outcomes of percutaneous image-guided cryoablation versus surgery for abdominal wall endometriosis (AWE)
Design: Retrospective cohort study of all patients treated for AWE from 01/2000 to 02/2022.
Setting: Academic tertiary health system.
Patients or Participants: Women who underwent cryoablation (n=25) or surgical excision (n=50) for treatment of AWE.
Interventions: Percutaneous image-guided cryoablation versus surgical excision.
Measurements and Main Results: There was no significant difference between patients undergoing cryoablation versus surgery in terms of age (37±4.6 vs 35.9±6.1, p=0.37), parity (2 [2,3] vs 2 [1,3], p=0.53), presence of pelvic endometriosis (68% vs 68%, p=0.99), number of prior surgeries (2 [2,4] vs 2 [2,3], p=0.79) and cesarean deliveries (2 [1,2] vs 1 [1,2], p=0.73). Mean BMI was significantly higher in the cryoablation group (34.6±8.6 vs 28.7±6.8, p=0.005). Most patients in both cryoablation and surgery groups had no prior intervention for AWE (60% vs 78%), however 36% of cryoablation and 22% of surgical patients underwent prior surgical excision of AWE. The most common location was prior CS scar (cryoablation 80% vs surgery 86%). Lesion number and size (cm) was similar for both cryoablation and surgical groups (1 [1,1] vs 1 [1,1], p=0.059, and 2.7 [1.8,4.0] vs 2.6 [1.7,5.0], p=0.97). Median length of hospital stay was similar between groups (cryoablation 1 [0,1] vs surgery 0 [0,2], p=0.42). Complications included wound infection (cryoablation 4%, surgery 6%), hematoma (cryoablation 8%, surgery 4%), edema (cryoablation 12%, surgery 0%). Recurrence after treatment was similar between cryoablation (24%) and surgery (18%) groups (p=0.76). There was significant decrease of pain in both groups, however this decrease was not significantly different between groups p-value 0.83.
Conclusion: Percutaneous image-guided cryoablation seems equivalent to surgical excision for the treatment of AWE in terms of pain reduction and recurrence risk with low risk of complications. It is a potential option to consider for women wanting to avoid surgery or who are not surgical candidates.

8442 Isthmocele Repair in Unusual Presentations

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Study Objective: To demonstrate unusual clinical presentations and surgical management of isthmocele.
Design: Surgical video. Two cases are presented of women with unusual presentations undergoing isthmocele repair. One video demonstrates a robot-assisted and hysteroscopic repair, while the other is a laparoscopic and hysteroscopic repair.
Setting: Academic tertiary care hospital.
Patients or Participants: A 30-year-old G1P1and a 33-year-old G1P1 were referred to a minimally invasive gynecologic surgeon for pelvic pain and abnormal uterine bleeding.
Interventions: The first patient was referred for evaluation of dysmenorrhea and dyspareunia. She had a known history of an emergent cesarean delivery. MRI demonstrated findings concerns for isthmocele. She underwent a hysteroscopy, robotic-assisted excision of endometriosis and isthmocele repair.
The second patient was referred 3 months after her delivery for abnormal uterine bleeding. She presented with persistent abnormal uterine bleeding. Her cesarean was complicated by a left extension and postoperative hemorrhage leading to IR coiling of her left uterine artery and a take-back exploratory laparotomy for hemoperitoneum. MRI report described myometrial blood products continuous with the endometrial lining. She underwent a concomitant hysteroscopy and laparoscopic isthmocele repair. Given the left lateral location of her defect near the uterine insertion of the uterine artery, the left uterine artery was clipped at its origin during the surgery as a precautionary measure. The clip was later removed upon completion of the repair. During her surgery, an endometrioma was noted to overly the c-section scar defect.
Both patients had full recoveries and were cleared for pregnancy 6 months after the repair.
Measurements and Main Results: Office hysteroscopy after both the procedures demonstrated no further appreciable defects.
Conclusion: Isthmocele presentations vary. Isthmoceles should remain high on a differential when working up a patient with post-partum pelvic pain and abnormal bleeding. Concomitant use of hysteroscopy during laparoscopic or robotic repair of isthmocele is recommended.

8445 Surgical Management of Urethral Prolapse: A Case Report

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Study Objective: To describe a case of acute urethral prolapse presenting with refractory pain and urinary retention, and to demonstrate surgical management, delineating key surgical steps using a surgical video.
Design: Case report demonstrated in a narrated surgical video
Setting: Patient presented to an academic hospital emergency department and required emergent surgical management in the operating room. In the operating room, patient is positioned in dorsal lithotomy with LoneStar retractor in place.
Patients or Participants: This surgical video describes a case report of a 45-year-old perimenopausal female who presented with acute onset refractory pain and urinary retention, as well as inability to tolerate catheterization, secondary to acute urethral prolapse with thrombosis and necrosis.
Interventions: After appropriate patient positioning, healthy urothelium was identified with cystourethroscopy above the prolapsed tissue. Next, normal appearing urothelium was tagged proximal to the prolapse at 3 o'clock, 6 o'clock and 9 o'clock using interrupted 4-0 Vicryl sutures so that this healthy tissue would not retract once the prolapse was excised. The base of the prolapsed portion of the urethral was injected with 1% lidocaine with epinephrine. The prolapsed portion was excised with Bovie electrocautery in quadrants around the urethra.
A 16 French transurethral Foley catheter was placed, and the balloon inflated. Normal healthy appearing urothelium was re-approximated to the external urethral meatus epithelium using interrupted 4-0 Vicryl sutures

with repair of one quadrant at a time. This was performed over the Foley catheter to ensure patency and prevent stricture.
Measurements and Main Results: The patient presented in this surgical video had immediate and complete resolution of symptoms.
Conclusion: Urethral prolapse rarely requires surgical intervention; however, when surgical treatment of urethral prolapse is necessary, it can be effective with appropriate surgical technique.

8452 Lymph Node Evaluation for Endometrial Hyperplasia: A National Level Analysis of Minimally Invasive Hysterectomy in the Ambulatory Setting

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Study Objective: To examine the association between histology and utilization of lymph node evaluation at the time of minimally invasive hysterectomy when performed for endometrial hyperplasia in an ambulatory surgery setting.
Design: Population-based, retrospective cohort study.
Setting: The National Ambulatory Surgery Sample, 2016-2019.
Patients or Participants: 39,205 patients with endometrial hyperplasia who underwent minimally invasive hysterectomy (total laparoscopic, laparoscopic assisted vaginal, and total vaginal), including 19,653 cases with atypia and 19,552 cases without atypia. Patients with invasive uterine, cervical, and ovarian cancers were excluded.
Interventions: *(i)* Multivariable analysis with log-Poisson generalized linear regression model to compare the clinical characteristics between the atypia and non-atypia groups, and *(ii)* inverse probability of treatment weighting to assess the utilization of lymph node evaluation at the time of hysterectomy, stratified by histology type.
Measurements and Main Results: In a multivariable analysis, patients in the atypia group were more likely to have older ages, obesity, medical comorbidities, a recent diagnosis, self-paid insurance, higher household incomes, and undergo surgery at large, urban teaching centers compared to those in the non-atypia group (all, $P<0.05$). Patients in the atypia group were less likely to undergo laparoscopic assisted vaginal or total vaginal hysterectomy compared to those in the non-atypia group (both, $P<0.05$). In a propensity score-weighted model, patients in the atypia group were more likely to have lymph node evaluation at the time of hysterectomy compared to those in the non-atypia group (8.8% *versus* 2.8%, odds ratio 3.37, 95% confidence interval 3.02-3.77).
Conclusion: This national-level analysis suggests that lymph node evaluation was performed at the time of minimally invasive hysterectomy for endometrial hyperplasia in the ambulatory surgery setting in the United States from 2016-2019. Surgeons appear to evaluate lymph nodes more frequently for endometrial hyperplasia with atypia than without.

8453 Low Anterior Resection in Stage IV Endometriosis in a Post Hysterectomy Patient

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Study Objective: To demonstrate technique in resection of stage IV endometriosis in a post-hysterectomy patient, including parametrial dissection, ureterolysis, rectovaginal mobilization, and low anterior resection with reanastamosis.
Design: A narrated surgical video.
Setting: An endometriosis-focused surgical practice in the private setting.
Patients or Participants: The patient is a 40-year-old woman with three previous laparoscopies, including hysterectomy and bilateral salpingoopherectomy. She was notably told after her most recent laparoscopy that she had no residual disease. Patient presented for consult with severe dyschezia, dyspareunia, and pelvic pain. Exam findings were concerning for severe rectovaginal endometriosis at the pelvic cuff.
Interventions: The patient was taken to OR for diagnostic laparoscopy, and ultimately a full excision of endometriosis was performed, including parametrectomy, ureterolysis, and low anterior colon resection with stapled reanastamosis.
Measurements and Main Results: 6 months postop the patient reports near complete relief of her symptoms, and substantially improved quality of life.
Conclusion: Low anterior resection in stage IV endometriosis may be necessary even after hysterectomy for endometriosis. A previous negative laparoscopy does not rule out high grade disease, as inexperienced physicians may under diagnose even severe disease. Hysterectomy and salpingoopherectomy does not resolve pre-existing rectovaginal endometriosis, and symptoms may persist or even worsen despite this treatment.

8459 Prevalence, Predictors and Hospital- and Surgeon-Level Variation of Preoperative Anemia: A Multi-Centre Retrospective Study

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Study Objective: Evaluate prevalence, predictors, and hospital- and surgeon-level variation of preoperative anemia, a quality metric, prior to elective hysterectomy.
Design: Multi-center retrospective review.
Setting: 9 Ontario, Canada hospitals (6 academic, 3 community).
Patients or Participants: Patients undergoing elective hysterectomy from July 2016-December 2020. Patients with malignancy, invasive placentation and pregnancy were excluded.
Interventions: Primary outcome was preoperative anemia (hemoglobin <12 g/dL) within three months prior to surgery.
Measurements and Main Results: Patient, case and surgeon characteristics for those with and without anemia were recorded and bivariate comparisons between groups were completed. Linear mixed effects regression assessed associations between anemia and several patient and surgeon variables, and adjusted odds ratios (aORs) were reported. A multilevel model was created to calculate median odds ratios (MOR) to assess surgeon- and hospital-level variability in preoperative anemia rates. A total of 4557 hysterectomies by 113 surgeons at nine hospitals were included. One in five patients (909 patients, 19.9%) were anemic preoperatively. Several patient, case and surgeon characteristics were associated with preoperative anemia: Preoperative diagnosis of abnormal uterine bleeding (aOR 1.48, 95%CI 1.20-1.81, p<0.001); uterine weight in the two uppermost quartiles (aOR 2.41, 95%CI 1.71-3.38, p<0.001 and aOR 3.52, 95%CI 2.34-4.50, p<0.001, respectively); surgeon length of practice >11 years (aOR 1.66, 95%CI 1.29-2.12, p<0.001); and community practice (aOR 2.05, 95%CI 1.44-2.93, p<0.001). There was considerable variability in preoperative anemia rates among surgeons (MOR 1.29) and hospitals (MOR 1.54), suggesting that a patient had a 54% higher chance of preoperative anemia at one randomly selected hospital compared to another; and a 29% higher chance of being anemic if cared for by one surgeon compared to another.
Conclusion: Several factors are associated with preoperative anemia among hysterectomy patients and variation in preoperative anemia exists at both the hospital- and surgeon-level. Quality improvement initiatives aimed at surgeons with longer duration of practice and those at community hospitals may reduce variability.

8465 Same-Day Discharge (SDD) after Total Laparoscopic Hysterectomy (TLH) in a High-Risk Patient Population

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Study Objective: To examine whether SDD (discharge prior to midnight on day of surgery) is safe and feasible in a high-risk patient population. Secondary outcome was post-operative complications within twelve weeks of surgery.
Design: Retrospective chart review.
Setting: High-volume, safety-net hospital caring for predominantly Hispanic-White, African American, non-English speaking, and/or uninsured or under insured patients with 5th grade average reading level.
Patients or Participants: Patients receiving TLH June 2014 - January 2019. This captures the transition in practice to universal SDD in 2017.
Interventions: TLH performed by two high volume Minimally Invasive Gynecologic Surgeons.
Measurements and Main Results: 309 patients, 95 (31%) had SDD while 214 (69%) were admitted. After the transition in 2017, the SDD rate increased from 0% (2014) to 73% (2018). No statistically significant differences were noted in baseline characteristics between groups including: Age, race, ethnicity, hemoglobin, or surgery indication. The majority of patients self-reported a language other than English as their primary language (58% SDD vs. 53% admission). There were no differences between group's pre-operative comorbidities including BMI (33kg/m^2), presence of hypertension, diabetes, or opioid use. There was no statistically significant difference between groups based on ASA classification, with most being class 2 (58% vs. 60%) or 3 (40% vs. 38%). There were no differences between SDD and admission groups in mean estimated blood loss (134mLs vs. 166mls) or uterine weights (314gms vs. 327gms). Six patients (2%) were readmitted post-operatively, and there was no difference in readmission rate between groups.
Conclusion: SDD is safe in a high-risk patient population and does not increase post-operative readmission rate. Patients who are uninsured or underinsured, do not speak English as a primary language, have low health literacy, and/or who are ASA class 2-3 can safely be offered SDD. We demonstrate that high-risk patients should be included in SDD research and highlight the importance of equity and inclusivity in surgical outcomes research.

8466 Creating the Uterine Cavity in Global Asherman's Syndrome

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Study Objective: Resumption of Menstruation in patients with Total amenorrhea with Global Asherman's Syndrome following Hysteroscopic surgery.
Design: Prospective.
Setting: Private Hospital.
Patients or Participants: Patients who present with Total amenorrhea following traumatic IU adhesions or Infective adhesions.
Interventions: Operative Hysteroscopy without use of energy.
Measurements and Main Results: Resumption of menstruation achieved in 86% of the patient population presenting with total amenorrhea.
Conclusion: Hysteroscopic adhesiolysis without use of energy is a feasible and effective option in patients with Severe Intra-Uterine adhesions.

8477 Uterine Artery Embolization Via Transradial Versus Transfemoral Arterial Access: Technical and Clinical Results

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Study Objective: To compare the technical and clinical outcomes of transradial (TRA) versus transfemoral (TFA) access in patients undergoing uterine artery embolization (UAE) for symptomatic uterine fibroids.
Design: Retrospective study.
Setting: Single institution, tertiary care center in Northeastern USA from 2015-2021.
Patients or Participants: Patients undergoing uterine artery embolization at our institution (n=43) were included.
Interventions: Uterine artery embolization via transradial or transfemoral access.
Measurements and Main Results: A retrospective analysis was conducted for 2 cohorts: 15 procedures were performed via TRA and 28 procedures were performed via TFA. Median age was 45 years in both groups and procedure type was determined based off of surgeon and patient preference. Indications for embolization included: menorrhagia (n=33), dysmenorrhea (n=9), anemia (n=15), and bulk symptoms (n=34). Patients with malignancy of the uterus or ovaries, infection, renal failure, and desire for future fertility were excluded. Five vascular surgeons performed all procedures at one institution. Technical success, pain improvement, operative time and length of stay were assessed. Technical success, defined as successful delivery of embolic agent into target artery, was achieved for all patients in both cohorts. Mean procedure time was 166 minutes in TRA group and 140 min in TFA group. There was no significant difference in subjective pain changes at post-operative clinic visits and length of stay between groups.
Conclusion: While both TRA and TFA access achieved equal technical success, TRA access did come with increased operative time. As major drivers of increasing use of TRA include earlier time to ambulation after the procedure, earlier discharge from the hospital, and higher patient satisfaction, these outcomes warrant future investigation. Nonetheless, transradial access in uterine artery embolization represents a safe and feasible minimally invasive approach with a comparable safety profile to transfemoral access in the management of symptomatic uterine fibroids.

8482 *An Unusual Presentation of Granulomatous Peritonitis Following Cystectomy for Mature Teratoma*

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Study Objective: To highlight granulomatous peritonitis as a potential complication of cyst content spillage during laparoscopic ovarian cystectomy for mature teratoma.
To describe the first known case of granulomatous peritonitis infiltrating the right hemidiaphragm, leading to right-sided pneumonia and requiring a partial diaphragmatic resection.

To review prevention and treatment strategies of granulomatous peritonitis following ovarian cystectomy for mature cystic teratoma.
Design: Case report.
Setting: Community hospital.
Patients or Participants: 1 patient.
Interventions: Surgical intervention consisting of extensive resection of disease, including laparoscopy converted to midline laparotomy, left salpingo-oopherectomy, omentectomy, partial bladder cystectomy, liver wedge resection, diaphragm stripping, partial resection of diaphragm, mesenteric nodule resection, appendectomy, repair of both large and small bowel; as well as resection of anterior abdominal wall disease.
Measurements and Main Results: Pathology demonstrated recurrent mature cystic teratoma, abundant hair fragments and associated foreign body type granulomatous reaction. The patient was asymptomatic at 9 months after surgical intervention.
Conclusion: Awareness of granulomatous peritonitis, and the potential extent of disease, as a complication of dermoid cyst rupture is paramount. Cyst content spillage is often challenging to avoid, and copious irrigation is advised if spillage occurs - yet may still not successfully prevent peritonitis. Route of cystectomy should be carefully considered to minimize risk of spillage. Ultimately, maintaining an index of suspicion for this diagnosis when a patient presents with vague or unusual symptoms following laparoscopic cystectomy for mature dermoid may expedite appropriate care, which may include extensive surgical resection.

8493 Six Clip Hysterectomy

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Study Objective: To demonstrate an efficient, alternative method of performing a total robotic hysterectomy with bilateral salpingo-oophorectomy/salpingectomy using six surgical clips.
Design: Video presentation with narration explaining surgical technique and steps to perform a hysterectomy with six surgical clips.
Setting: Hospital operating room. Patient positioned in dorsal lithotomy in steep Trendelenburg with robot docked in place. Surgeon at console.
Patients or Participants: A 54-year-old woman with pelvic pain and thickened endometrium with history of endometrial ablation years prior for menorrhagia. She presented for total robotic hysterectomy with bilateral salpingo-oophorectomy.
Interventions: The patient was taken to the operating room for a robotic hysterectomy with bilateral salpingo-oophorectomy. The abdomen was entered and the da Vinci Xi robot (da Vinci Intuitive Surgical, Sunnyvale, CA) was docked. The left round ligament was transected, and the retroperitoneal space was entered. Using a large robotic clip applier, a surgical clip was placed on the left uterine artery at its origin. A second clip was placed on the left infundibulopelvic ligament which was then transected. A third clip was placed on the left uterine vessels at the level of the cardinal ligament. The steps were repeated on the opposite side. After the sixth and final clip was placed on the right uterine vessels, the cardinal ligaments were transected bilaterally and the colpotomy was completed. The specimen was removed, while the six surgical clips remained in the body. Minimal bleeding was encountered. Patient recovered well post-operatively with no issues. When performing a hysterectomy with bilateral salpingectomy, the clips are placed on the utero-ovarian ligaments as opposed to the infundibulopelvic ligaments.
Measurements and Main Results: N/A.
Conclusion: We demonstrate an efficient, cost-effective, and alternative method of performing a robotic hysterectomy using six surgical clips. There is less energy use, less thermal damage, and decreased blood loss. This technique is applicable with both bilateral salpingo-oophorectomy and bilateral salpingectomy at the time of hysterectomy.

8499 Laparoscopic Myomectomy for Symptomatic Pedunculated Fibroid with Degeneration and Subserous Fibroids in Second Trimester of Pregnancy

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Study Objective: To demonstrate the feasibility of emergency laparoscopic myomectomy for a large pedunculated fibroid (FIGO type 7) with degeneration and multiple subserous fibroids (FIGO type 6) in a patient with pregnancy of 12.4 weeks.
Design: Stepwise demonstration of laparoscopic myomectomy in a patient with gravid uterus with narrated video footage with sonographic images.
Setting: Tertiary care hospital.
Patients or Participants: A 27 years primigravida with 12.4 weeks of gestation presented with severe pain in right lower abdomen and vomiting for three days. Abdominal ultrasound showed gravid uterus with multiple subserous fibroids of size 30 × 30mm, 23 × 26mm, 24 × 21mm and a large avascular lesion showing central degeneration of size 117 × 93 mm in right hypochondriac region separately from uterine fundus suggestive of pedunculated fibroid. Patient counselling was done about the risks and benefits of surgery during pregnancy.
Interventions: Laparoscopic myomectomy of a large pedunculated myoma and other multiple subserous fibroids was done. The base of pedunculated fibroid ligated with two sutures and rest of fibroids enucleated out. Myometrial walls sutured. Use of vasopressin was avoided during myomectomy. The fibroids were removed by in bag morcellation with morcellator.
Measurements and Main Results: The myomas were removed with very minimal blood loss of 50 ml. The pedunculated large myoma measured 10 × 12 cm and six subserosal fibroids measured 2 × 2 cm to 2 × 3 cm each. Histopathological reports revealed degeneration in large pedunculated fibroid. The patient had complete resolution of right lower abdominal pain and recovered well post operatively and underwent vaginal delivery at term with healthy baby.
Conclusion: Laparoscopic myomectomy can be done selectively for patients with only symptomatic pedunculated and subserous fibroids. Minimal handling of the gravid uterus is necessary to minimize the chances of abortion and preterm delivery. Proper selection of patients for this type of surgery during pregnancy is very important and requires surgical expertise.

8504 Postmenopausal Endometriosis at the Time of Laparoscopic Trachelectomy

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Study Objective: To review endometriosis management in the postmenopausal population. To review indications for a trachelectomy following a hysterectomy. To demonstrate a safe and feasible way to perform a laparoscopic trachelectomy.
Design: A single person case report with a stepwise demonstration of surgical techniques with narrated video footage.
Setting: Tertiary-care academic center.
Patients or Participants: A 64-year-old with a history of bladder pain syndrome and a past surgical history of a supracervical hysterectomy and bilateral salpingo-oophorectomy for risk reduction, in the setting of BRCA2 mutation and a history of breast cancer. Patient was experiencing postmenopausal bleeding and found to have cervical dysplasia. Pelvic MRI showed concern for a 1cm cervical mass.
Interventions: At time of laparoscopy white plaques were identified just lateral to cervix. Plaques were excised, sent for frozen pathology, and found to be benign. A laparoscopic trachelectomy was performed and incorporated the lateral borders of these lesions for complete excision.
Measurements and Main Results: N/A.

Conclusion: Laparoscopic trachelectomies are safe and feasible surgeries to perform by a trained gynecologic surgeon. Amongst the concern for endometriosis, one must consider the diagnosis of malignancy, especially in the postmenopausal population.

8506 Surgical Management of Late 1st Trimester Cesarean Scar Ectopic Pregnancy

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Study Objective: To describe the safe surgical management of late 1st trimester cesarean scar ectopic pregnancy.
Design: A case report.
Setting: Academic tertiary care hospital. Patient placed in dorsal lithotomy in Trendelenburg position with sponge on ring forceps placed in the vagina.
Patients or Participants: 33-year-old G8P4044 presenting with foul smelling discharge and an LMP 10 weeks prior. Her surgical history is notable for 3 prior cesarean sections and laparoscopic right salpingectomy for ectopic pregnancy. Pelvic ultrasound notable for live intrauterine pregnancy measuring 10 weeks 6 days with complete posterior placenta previa and thin myometrium in lower uterine segment concerning for cesarean scar ectopic pregnancy.
Interventions: Patient was diagnosed with cesarean scar ectopic pregnancy by Maternal Fetal Medicine. She underwent preoperative bilateral uterine artery embolization by Interventional Radiology. She underwent total laparoscopic gravid hysterectomy and left salpingectomy with lysis of adhesions by Benign Gynecology.
Measurements and Main Results: Diagnosis and management of cesarean scar ectopic pregnancy requires multidisciplinary collaboration for safe management. Here, we present a case of a late 1st trimester cesarean scar ectopic pregnancy managed safely with input from Maternal Fetal Medicine, Family Planning, Interventional Radiology and Benign Gynecology teams. We show the diagnosis of cesarean scar ectopic pregnancy through transvaginal ultrasound and discuss management options in the late 1st trimester. We show preoperative bilateral uterine artery embolization. Finally, we show technique for safe lysis of adhesions with low estimated blood loss during laparoscopic total gravid hysterectomy. Final pathology was consistent with intrauterine fetus with placenta accreta. The patient was discharged home on day of surgery without any postoperative complications.
Conclusion: A detailed 1st TM ultrasound should be considered in patients who are high risk for cesarean scar ectopic pregnancy. Embolization of bilateral uterine arteries prior to gravid hysterectomy can decrease intraoperative blood loss. A multidisciplinary approach is preferred for management of late 1st trimester cesarean scar ectopic pregnancies.

8509 Extracorporeal Knots in Laparoscopy: Modified Roeder's Knot

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Study Objective: Advancement in laparoscopic surgery led to the development of various extracorporeal knot tying techniques. In this video, we review types of extracorporeal knots and demonstrate the modified Roeder's knot (MRK) and its' application in total laparoscopic hysterectomy at the time of vaginal vault closure. This instructional video provides a step-by-step approach to the technique of the MRK.
Design: This video abstract uses still images, drawings, video footage and narration to demonstrate the MRK.
Setting: Operating Room, mid-laparoscopic procedure. The patient is in Trendelenburg position, three ancillary ports are used: 2 right-sided ipsilateral ports and a left lower quadrant port.
Patients or Participants: Patients undergoing laparoscopic gynecologic surgery.
Interventions: Application of MRK.
Measurements and Main Results: MRK is a sliding knot, that is formed entirely extracorporeally. The addition of an extra half-hitch to the classic Roeder's knot provides extra knot security.
Conclusion: MRK is safe and feasible for various minimally invasive endoscopic surgeries, especially for suturing tissues under tension. The technique is easy to learn and can be quickly mastered by surgeons and trainees.

8519 Effects of Prior Cesarean Section on Outcomes of Laparoscopic Hysterectomies Performed by Minimally Invasive Gynecology Trained Surgeons

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Study Objective: To evaluate the effect of a history of cesarean section (CS) on complications and operative time of minimally invasive hysterectomies (MIH) performed by surgeons trained in minimally invasive gynecologic surgery (MIGS).
Design: Retrospective cross-sectional study.
Setting: Single institution, tertiary care center in Southeastern USA from 2016-2019
Patients or Participants: Patients who underwent MIH for benign conditions, performed by a MIGS trained surgeon, and did not have a history of laparotomy other than CS.
Interventions: Minimally invasive hysterectomy.
Measurements and Main Results: A total of 484 hysterectomies met inclusion criteria. Of these, 152 patients had a history of CS and 332 did not have a history of CS. No significant demographic differences were noted between groups. In patients with a history of CS, 69 (45.4%) had one, 52 (34.2%) had two, 24 (15.8%) had three, and 7 (5.2%) had four or more prior CS. Generalized linear models controlling for body mass index (BMI) did not show a relationship between history of CS as a binary variable (CS vs no CS) and estimated blood loss (EBL) (mean 62 mL vs 57 mL, p=0.44) or operative time (mean 152 minutes vs 148 minutes, p=0.70). Similarly, there was no relationship between the number of prior CS and EBL (p=0.421) or operative time (p=0.411). The adjusted odds ratios were not significant between CS vs no CS for intraoperative complication (aOR = 0.920, CI 0.282 − 3.00) or 30-day postoperative complication (aOR = 0.946, CI 0.573 − 1.563).
Conclusion: While previous studies have found a relationship between history of CS and hysterectomy complications, this has not been evaluated in patients undergoing MIH with a MIGS trained surgeon. In our study, neither a history of any CS nor the number CS had an effect on EBL, operative time, or intraoperative or post-operative complications of MIH performed by MIGS trained surgeons.

8520 Robotic Assisted Single-Site Presacral Neurectomy for Chronic Pelvic Pain in the Setting of Endometriosis

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Study Objective: Demonstrate the approach to presacral neurectomy using the robotic single site platform.
Design: A narrated instructional video.
Setting: A community-academic hospital.

Patients or Participants: Clinical Case-This is a case of a 43-year-old with a history of persistent central pelvic pain despite multiple laparoscopies for endometriosis and a hysterectomy for this indication. The patient had tried multiple medical and adjunctive treatments such as pelvic floor PT, acupuncture, etc., without relief. The patient elected for presacral neurectomy in an attempt to improve her pelvic pain. The patient desired minimal incisions for cosmesis and chose to have the procedure performed via the single site robotic platform.
Interventions: Case Description: Entry to the abdomen was made with a 2.5 cm incision hidden in the umbilicus. The single site port was placed, and the robot was docked. An EEA sizer was used to deviate the colon off the sacral promontory. An incision was made in the presacral peritoneum and carried cephalad toward the aortic bifurcation. The superior hypogastric plexus was coursing over the left common iliac vein. A combination of blunt and sharp dissection was used to isolate this plexus. The proximal portion of the plexus was grasped and sealed with the bipolar forceps and then separate with the hook. The plexus was further dissected down using the monopolar hook to the level of the bifurcation of the hypogastric plexus and the left arm was transected with the monopolar hook. The peritoneum was then reapproximated using a running 3-0 V-loc suture, and the procedure was completed.
Measurements and Main Results: N/A
Conclusion: This surgical video illustrates the feasibility of presacral neurectomy using the single site platform to improve cosmesis, patient satisfaction and reduction in number of incisions

8525 Efficacy and Safety of Single Port Robotic Hysterectomy with Concomitant Urogynecologic and Gynecologic Oncology Procedures

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Study Objective: To assess the feasibility of the DaVinciâ Single Port (SP) robotic platform for urogynecologic and gynecologic oncology surgical procedures.
Design: Retrospective cohort analysis.
Setting: The first SP robotic procedures performed as same day surgeries at an academic tertiary medical center by board certified Female Pelvic Medicine and Reconstructive Surgery and/or Gynecologic Oncology surgeons from December 2021-April 2022.
Patients or Participants: 15 patients underwent SP robotic hysterectomy (RH) and either bilateral salpingectomy (BS) or salpingo-oophorectomy (BSO) with or without concomitant procedures.
Interventions: SP RH and concomitant procedures were performed using a 1.5 cm umbilical incision, the Access Port ä (Intuitive Surgical) and the SP platform robotic camera and instruments.
Measurements and Main Results: Our primary outcome was conversion to a multiport procedure and intraoperative complications. Perioperative details were abstracted from the chart including operative time, estimated blood loss (EBL), and intraoperative complications, PACU length of stay (LOS) and pain scores POD#1 Surgical Pain Scale (SPS) scores.
Indications for the 15 SP RH with BS or BSO included prolapse (N=10), risk reduction (N=2,) endometrial cancer (N=1), cervical (N=1), and endometrial (N=1) intraepithelial neoplasia. Concomitant procedures included: 10 (67%) SP sacrocolpopexies, 9 (60%) midurethral slings, 2 (13%) SP sentinel lymph node mapping, and 1 breast reconstruction. There was no conversion to a multiport procedure, intraoperative or immediate postoperative complications with a mean EBL of 66.7 ± 26.1 cc. Mean operative time and PACU LOS were 182 ± 53 and 216 ± 57 min. Median PACU pain scores were low (2, IQR 4) and only one patient required a single dose of postoperative tramadol. Similarly, median POD#1 SPS scores were low for pain at rest and with activity (3 (IQR 4) and 3 (IQR 4.75)) and for the worst pain 5.5 (IQR 4,25).
Conclusion: SP robotic approach for urogynecologic and gynecologic oncology hysterectomy with concomitant procedures performed by subspecialty surgeons is safe and feasible.

8532 Patient Satisfaction with Postoperative Follow up after Benign Minimally Invasive Hysterectomy: A Randomized, Controlled Trial

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Study Objective: To assess whether patient satisfaction varies with a single six week versus a two- and six-week postoperative visit after minimally invasive hysterectomy (MIH). Secondary aim was to determine the rate of postoperative complications between randomized groups.
Design: Prospective, randomized controlled trial of English-speaking women aged 18 to 70 undergoing MIH at an academic institution from August 2018 to December 2019. Patient satisfaction was determined by The Consumer Assessment of Healthcare Providers and Systems Surgical Care Survey (S-CAHPS) global satisfaction response and compared between groups using a non-inferiority test with 12% non-inferiority limit. Comparison of postoperative outcomes were performed utilizing the Clavien-Dindo Classification System.
Setting: N/A.
Patients or Participants: 174 patients were randomized for postoperative follow up; 140 included in overall analysis.
Interventions: Randomization to either a two and six week or a single six-week postoperative appointment.
Measurements and Main Results: For the primary outcome of an S-CAHPS satisfaction score of 8 or higher, the six weeks only group was non-inferior to the two- and six-week group (93% satisfaction in both groups; non-inferiority p=0.003). There was no difference in satisfaction with number of postoperative appointments between groups: 94% for two and six week and 90% for six weeks only (p=0.694). When asked if more or fewer appointments were desired, there was no difference between groups (p=0.465). Patients with abnormal uterine bleeding were more likely to be satisfied (p=0.030). Between the two and six weeks versus six weeks only groups, there was no significant increase in emergency room visits (18% versus 20%, respectively, p=0.863) or hospital readmissions (3% versus 6%, respectively, p=0.682).
Conclusion: Patient satisfaction with postoperative visits are similar among women randomized to a two and six week and a single six week visit. Postoperative complications were rare and comparable between groups. A single six-week appointment showed non-inferior patient satisfaction relative to a two- and six-week schedule.

8535 Troubleshooting Less Is More: Three Simple Tricks Every Gynecologist Should Know

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Study Objective: To describe three simple techniques every Gynecologist should know for troubleshooting in the operating room.
Design: This is an educational video.

Setting: Intra-operative video recordings from various patient encounters.
Patients or Participants: Patients were undergoing minimally invasive gynecologic surgery at a tertiary care center.
Interventions: Three interventions are demonstrated: 1) simplified steps to culdotomy without a uterine manipulator 2) use of a Bovie to activate a laparoscopic instrument 3) steps to backfilling the bladder and performing a bladder survey with a 30-degree laparoscope.
Measurements and Main Results: Safe and efficient care of patients.
Conclusion: These simple techniques are helpful when encountering an unexpected situation, they allow the surgeon to move forward safely and efficiently.

8549 Simplifying Laparoscopic Suturing for the Gynecologic Trainee: A Systematic Approach for Reproducible Needle Handling

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Study Objective: Laparoscopic suturing and needle handling are core components of gynecologic surgical management of many benign and malignant disease processes. Adoption of a reproducible technique for laparoscopic needle loading and handling is beneficial for the gynecologic trainee.
Design: Educational demonstration of a surgical technique.
Setting: The demonstration of this method is shown in a laparoscopic simulator trainer with a vaginal cuff model.
Patients or Participants: N/A.
Interventions: This video demonstrates a 3-step approach for safe and efficient needling loading and handling in a simulation environment.
1. Grasp the suture one to two centimeters from the swaged end of the needle to serve as the fulcrum of movement.
2. Lightly grasp the body of the needle so it may act as a pendulum for the swing.
3. Maintain tension on the suture to allow for needle rotation.
Measurements and Main Results: N/A
Conclusion: Mastering laparoscopic needle handling and suturing are important fundamentals of gynecologic laparoscopic surgery. The swing technique may be used in a variety of port configurations making it adaptable and transferable across a wide setting of operations. Additionally, it uses minimal needle grasps for increased safety and efficiency. Learning this reproducible and methodical swing technique may help develop safe and efficient needle handling practices for the gynecologic trainee.

8551 Investigating the Impact of the Addition of a MIGS Surgeon on Surgical Volume of General Obstetrics and Gynecologys

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Study Objective: The primary objective was to determine whether adding a fellowship-trained minimally invasive gynecologic surgeon (FMIGS) would decrease the surgical volumes of physicians in other subspecialties within an academic obstetrics and gynecology (Obstetrics and Gynecology) department.
Design: The study compared case type and quantity, and case minutes of general Obstetrics and Gynecology, Female Pelvic Medicine & Reconstructive Surgery (FPMRS), and Reproductive Endocrinology & Infertility (REI) physicians before and after the addition of a FMIGS-trained surgeon. “Before” was academic years 2015-16 and 2016-17. “After” was academic years 2017-18, 2018-19, 2019-20, and 2020-21.
Setting: An academic Obstetrics and Gynecology department that grew from twelve to twenty surgeons from AY 2015-21.
Patients or Participants: All general Obstetrics and Gynecology, REI, and FPMRS physicians within an academic Obstetrics and Gynecology department.
Interventions: Surgical data including numbers of surgeries, categorized by major and minor, with and without endometriosis, and total case minutes from all general Obstetrics and Gynecology, REI, and FPMRS physicians from AY 2015-21 were collected for each academic year. Clinical full-time equivalents (FTE) per academic year, adjusted for hire date and medical leaves, were also collected.
Major cases included hysterectomy, laparoscopic or abdominal myomectomy, and sacrocolpopexy. Minor cases included other laparoscopies, hysteroscopy, dilation and curettage, and suburethral slings. Endometriosis had its own subcategory due to the wide range of associated surgical interventions.
Measurements and Main Results: The FMIGS surgical volume grew from 95 cases to 213 cases in four years. Case volumes did not change for any subspecialty after the hire of the FMIGS surgeon, with and without adjustment for FTE, or when sub-categorized into major, minor, and endometriosis cases. Case duration did not show any change before and after the addition of the FMIGS surgeon.
Conclusion: The addition of a FMIGS-trained surgeon to this department’s surgical practice did not decrease surgical volumes for the other sub-specialties. This information can help overcome concerns of other members of the faculty when considering whether to hire a FMIGS-trained surgeon.

8553 The Effect of Obesity on the Accuracy of Uterine Weight Estimation and Impact on Hysterectomy Outcomes

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Study Objective: Determine the effect of obesity on the accuracy of uterine weight estimation by bimanual exam (BME) and transvaginal ultrasonography and evaluate the impact on hysterectomy outcomes including surgical route and operative complications.
Design: Retrospective cohort study.
Setting: Large academic medical center.
Patients or Participants: 1297 patients who underwent hysterectomy for benign indications at Parkland Hospital by generalists and Minimally Invasive Gynecologic Surgery (MIGS) fellowship-trained gynecologists between 01/2016 to 06/2018.
Interventions: Data was collected from electronic medical records up to 6 months after hysterectomy. Surgeon type and mode of hysterectomy were compared. Resident physicians performed preoperative BME to determine estimated uterine size by gestational age, which was then converted to clinical uterine weight (grams) using mean weights for uteri between 6-26 weeks. For ultrasound weight, the equation: weight (g) = 50.0 + 0.71 x volume (cc) was used. Actual uterine weight was collected from surgical pathology data.
Measurements and Main Results: There was a significant correlation between both ultrasound-converted weight and pathology weight ($r=0.81$, $p<0.001$), and BME clinical weight and pathology weight ($r=0.70$, $p<0.001$). The correlation between ultrasound estimation and actual weight did not statistically differ between obese and non-obese populations ($p=0.06$). The correlation between BME estimation and actual weight did statistically differ between obese and non-obese populations ($p<0.001$). Most hysterectomies performed by MIGS surgeons were laparoscopic (59%) and generalists were open (50%). With uteri up to 22 weeks, MIGS surgeons performed significantly more laparoscopic hysterectomies than generalist surgeons regardless of obesity class ($p<0.05$). Complication rates did not statistically differ in obese versus non-obese populations ($p>0.05$).
Conclusion: BME estimation was affected by obesity and had a stronger correlation with actual weight in obese patients. Regardless of obesity class or uterine size, more MIGS surgeons chose a laparoscopic route while generalist surgeons chose open. Despite MIGS surgeons performing minimally invasive hysterectomies in more surgically complex cases, there were no differences in complication rates.

8556 Exploring the Impact of Preoperative Anemia on Postoperative Costs and Complications

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Study Objective: To determine the difference in hospital costs associated in anemic versus non-anemic patients undergoing benign, elective hysterectomy.
Design: We included patients undergoing elective, benign hysterectomy between July 2016 and December 2020. Preoperative anemia was defined as a hemoglobin <120 g/L. Primary outcome was total estimated hospital cost, in Canadian dollars (CAD), including index admission and complications requiring emergency room visit and/or readmission. Costs for outpatient physician services or indirect costs associated with quality of life and loss in productivity were not accounted for. Multivariable regression analysis adjusting for patient and surgical covariates was used to measure association between anemia and cost.
Setting: Nine Canadian hospitals (6 academic, 3 community).
Patients or Participants: Our data captured 4557 patients undergoing benign, elective hysterectomy.
Interventions: N/A.
Measurements and Main Results: Of the 4557 patients who underwent elective hysterectomy, 909 (19.9%) had preoperative anemia. After adjusting for differences in covariates between groups, mean hospital cost per hysterectomy was significantly higher in anemic compared to non-anemic patients ($7465.36 ± $2022.86 CAD vs $7082.56 CAD ± $941.16 CAD, p<0.001), translating into a 5.4% increase. Primary drivers of increased cost in the anemic group were increased length of stay (30 vs 29 days, p=0.005), perioperative blood transfusions (7.7% vs 1.3%, p<0.001) and iron infusions (2% vs 0.4%, p<0.001).
Conclusion: Preoperative anemia in patients undergoing elective hysterectomy for benign indications is associated with a significant increase in healthcare costs.

8557 Laparoscopic Resection of Involuting Cesarean Scar Pregnancy after Failed Multidose Methotrexate and KCl Treatment

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Study Objective: To describe the workup, treatment, and follow up of a cesarean-section scar ectopic pregnancy (CSP) that failed medical management and to demonstrate a laparoscopic resection of a cesarean section scar ectopic pregnancy that has failed medical management.
Design: Surgical video.
Setting: An academic teaching hospital and tertiary care center.
Patients or Participants: 36-year-old G2P2022, with a persistent cesarean scar ectopic pregnancy, who failed medical management with a multi-dose Methotrexate protocol and intrasac KCl injection and presented 3 months later for infertility evaluation.
Interventions: After failing medical management, the patient consented for a laparoscopic resection of CSP with revision of the previous scar. During surgery, the patient was found to have an involuting ectopic pregnancy at the site of the previous scar, which was successfully resected. The uterine incision was repaired in two layers.
Measurements and Main Results: The laparoscopic repair was completed successfully. Pathology showed fibrotic and necrotic chorionic villi with an adjacent decidual reaction consistent with a pregnancy. The patient's beta-hcg trended down to non-pregnant levels and she had a normal postoperative visit with no concerns.
Conclusion: Recommended treatment for CSP includes surgical resection, as medical management alone is unlikely to be successful. Key strategies for laparoscopic excision include use of backfilling the bladder to delineate borders, avoidance of excessive thermal energy, and closure of the defect in multiple layers.

8559 "Tap, Tap, Push": A Reproducible Ureterolysis Technique

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Study Objective: To describe and show a "tap, tap, push" technique for ureterolysis.
Design: Video case series of robotic-assisted laparoscopic ureterolysis and endometriosis excision.
Setting: OR.
Patients or Participants: 3 cases of robotic-assisted laparoscopic ureterolysis and endometriosis excision.
Interventions: A new "tap, tap, push" technique for ureterolysis.
Measurements and Main Results: We will show a new technique for ureterolysis starting from normal pelvic anatomy to ureterolysis for endometriosis excision that is safe, effective, and reproducible.
Conclusion: The "tap, tap, push" technique is safe and can be applied to a variety of settings where ureterolysis is performed.

8569 Approach to a Giant Pedunculated Fibroid

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Study Objective: This video reviews the surgical approach to a large pedunculated fibroid including preoperative assessment and intraoperative considerations for performing a laparoscopic myomectomy with contained tissue extraction.
Design: Surgical technique demonstration.
Setting: The patient was seen in an academic medical center. In the outpatient setting, she was consulted by a minimally invasive gynecologic surgeon with expertise in fibroid management. The surgery was performed in the outpatient surgery center.
Patients or Participants: A 37-year-old nulliparous female with a fibroid uterus. Based on preoperative imaging, the predominant fibroid was a posterior, pedunculated fibroid with an estimated weight of 1300 grams. The patient agreed to the use of photos and videos for educational purposes via an informed consent process.
Interventions: Preoperatively, the patient received leuprolide acetate injection in effort to decrease the size and vascularity of the large, broad-stalked, pedunculated fibroid. Eight weeks later she underwent laparoscopic myomectomy with a minilaparotomy for contained tissue extraction. Prior to the start of the surgery, she received misoprostol and tranexamic acid to aid in hemostasis. The video demonstrates the

intraoperative use of vasopressin in addition to the surgical approach to the primary myomectomy. Use of the minilaparotomy for surgical assistance, open myomectomy of an additional fibroid, and contained morcellation is portrayed in the video.
Measurements and Main Results: N/A.
Conclusion: This video reviews the surgical approach to a large, pedunculated fibroid via laparoscopic myomectomy with minilaparotomy. The surgery was without complication and the patient was discharged on the same day. Key learning points that lead to a successful case included: preoperative optimization when you expect to encounter high risk of blood loss, retention of a rim of serosa overlying a broad pedicle when performing myomectomy of an exophytic fibroid, and use of minilaparotomy to aid progression of case, not only for tissue extraction.

8571 Prevalence of Baseline Lower Urinary Tract Symptoms in Women Planning to Undergo Hysterectomy for Uterine Fibroids

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Study Objective: Compare the prevalence of baseline lower urinary tract symptoms (LUTS) in women planning to undergo hysterectomy for fibroids versus abnormal uterine bleeding (AUB) and examine their association with fibroid characteristics
Design: This is a retrospective cohort study of 202 women planning to undergo hysterectomy for fibroids vs. AUB. The aim was to compare LUTS in those with vs without fibroids. Baseline demographics, fibroid characteristics, and urinary symptoms were collected. Urinary symptoms included stress and urge incontinence, dysuria, frequent bladder infections, hematuria, nocturia, incomplete emptying, urgency, and frequency. Fibroid characteristics included dominant fibroid size, location, and total uterine volume. A priori power analysis determined 97 participants were needed per group (194 total) to assess for a 20% difference in LUTS, with alpha = 0.05 and power = 0.8. 202 participants were included to account for missing data upon chart review.
Setting: N/A.
Patients or Participants: Participants were identified from a surgical database. They were eligible for inclusion if they were planning to undergo hysterectomy for fibroids or AUB from 2014-2019.
Interventions: N/A.
Measurements and Main Results: When assessing baseline LUTS in women planning to undergo hysterectomy for fibroids vs. AUB, there were no differences in individual symptoms (all p>0.05) or in prevalence of 'any urinary symptom' as a single variable (42.6 vs 45.5%, p=0.67). Dominant fibroid size >6cm was correlated with greater prevalence of 'any urinary symptom' (64.9% vs 40.4%, p=0.02), as well as difficulty passing urine (p=0.02), nocturia (p=0.04), and urinary frequency (p=0.04). When controlling for age, BMI, parity, chronic pelvic pain, and diabetes, fibroids >6cm remained significantly associated with the presence of lower urinary tract symptoms (OR 3.1, 95% CI 1.2-8.3).
Conclusion: Lower urinary tract symptoms are prevalent in women planning to undergo hysterectomy for fibroids, particularly in those with fibroids >6 cm. Future studies should evaluate how urinary symptoms change following hysterectomy.

8574 Robotic-Assisted Correction of Sacrocolpopexy Mesh Erosion

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Study Objective: This video highlights the technique for robotic-assisted laparoscopic correction of sacrocolpopexy mesh erosion into the vaginal cuff.
Design: N/A.
Setting: This surgery is performed at a tertiary teaching hospital.
Patients or Participants: 56-year-old gravida 1 para 1 with persistent vaginal discharge and intermittent bleeding, noted to have a retained foreign body eroding into the vaginal cuff ten years after undergoing abdominal hysterectomy due to pelvic organ prolapse.
Interventions: The patient underwent a robot-assisted laparoscopic excision of an eroded sacrocolpopexy mesh. After extensive adhesiolysis was performed, the pelvic sidewalls were opened, and bilateral ureterolysis was performed. The bladder was carefully dissected away from the vaginal cuff. Colpotomy was performed, and the eroded foreign body was visualized and identified as a mesh. Intraoperative cystoscopy confirmed there was no bladder erosion. The colpotomy was extended laterally, and the mesh was dissected using monopolar scissors. The presacral peritoneum was incised, and the presacral space was developed towards the cul de sac. The mesh was densely adhered to the right uterosacral ligament (USL) and extended cranially towards the sacral area. The mesh was transected at the level of the right USL and removed vaginally. The vaginal cuff was closed with a 0 polydioxanone suture in two layers. The left USL was then transfixed to the vaginal cuff.
Measurements and Main Results: The mesh was successfully removed, and the patient's symptoms resolved.
Conclusion: This approach offers optimal exposure and ease of access for excision in cases of vaginal mesh erosion. This can be especially beneficial in patients with dense adhesions from prior surgery. There are limited case reports describing laparoscopic correction of sacrocolpopexy mesh erosion, and further studies are necessary to compare this to the vaginal approach.

8575 Single Dose Methotrexate, Predicting Outcomes at Time of Second Dose

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Study Objective: The single dose methotrexate protocol, which may include additional doses, is an accepted option for treating ectopic pregnancies. The objective of this study was to determine what percentage of patients administered a second dose of methotrexate fail this regimen and undergo laparoscopy. Additionally, we defined patient characteristics that may influence the decision to pursue surgery.
Design: Retrospective cohort study.
Setting: High volume academic, tertiary medical center.
Patients or Participants: Patients with an ectopic pregnancy from July 2011 to July 2021 that underwent medical treatment with single dose methotrexate 50 mg/m^2 IM and subsequently received a second dose of methotrexate.
Interventions: Laparoscopic tubal surgery for ectopic pregnancy.
Measurements and Main Results: Over 10 years, 167 patients were given a second injection of methotrexate following their initial methotrexate dose. Of those, 35/167 (21%) patients underwent surgery. In those who underwent surgery 12/35 (34.3%) had a ruptured ectopic pregnancy, of whom 5/12 (41.7%) had a significant hemoperitoneum (≥500 ml). In patients with a documented ultrasound prior to the second dose of

methotrexate, 26 of the 94 (27.7%) women with an adnexal mass had subsequent surgery compared to 9 of the 68 (13.2%) without a mass, RR of 2.12 (P=0.03). No other demographic or surgical risk factors (i.e. BMI, smoking status, history of abdominal surgery, diabetes, or prior ectopic pregnancy) impacted the risk of undergoing surgical management.
Conclusion: Of all women receiving a second dose following planned single dose methotrexate therapy, 79% were successfully medically managed. Patients with an adnexal mass on ultrasound had more than double the relative risk of undergoing surgery (27.7%) and should be counseled accordingly.

8576 A Video Tutorial on the Use of a Bell Pepper as a Model for Hysteroscopy Simulation

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Study Objective: In this educational video, we demonstrate the use of a bell pepper as a model for hysteroscopy simulation.
Design: This model is created by using an os-finder to bore a hole into the side of a bell pepper. Hysteroscopic equipment is set up in the traditional fashion with or without fluid. The features of the bell pepper can then be used to practice skills including visualization, tissue sampling of the bell pepper seeds, and septum take-down which are demonstrated in this video.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Obstetrics and gynecology residents in ACGME-accredited programs are required to complete forty hysteroscopies during their training. Hysteroscopy education with simulation has been shown to improve procedural knowledge, performance, and procedure time, as well as increase interest and confidence among OB-GYN trainees. The benefit of using a bell pepper as a DIY educational model is that it is inexpensive, easily accessible and provides haptic feedback while simultaneously being easily replaceable for skill repetition. These DIY models have been shown to be preferred by trainees and education using these models has been shown to improve trainees' procedural skills and confidence. The skills developed using this model include diagnostic skills such as equipment handling and cavity visualization and operative skills including tissue sampling, polypectomy and septum-take down.

8580 Comparison of Anesthetic Usage with Different Endometrial Ablation Devices

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Study Objective: To compare the anesthetic requirements associated with the use of different non-resectoscopic endometrial ablation (NREA) techniques.
Design: Retrospective comparative analysis for five marketed NREA devices using the information reported in their FDA approved instructions for use (IFU). "Physician discretion" directed anesthesia data were compared.
Setting: Office and operating room.
Patients or Participants: The Intent to treat population reported in IFU for the clinical studies conducted in support of FDA Premarket approval of five endometrial ablation devices.
Interventions: Endometrial ablation with the Cerene® Cryotherapy Device, Genesys® HTA Endometrial Ablation System, Mara™ Water Vapor Ablation System, Minerva® Endometrial Ablation System, and NovaSure® Impedance Controlled Endometrial Ablation System.
Conclusion: When comparing endometrial ablation modalities, anesthetic requirements should factor into choosing one technique over another, especially when considering an in-office procedure. Based on these data, cryoablation with Cerene was significantly more likely to be performed without IV medications (97%) demonstrating high tolerability for office use, as compared with hyperthermic endometrial ablation devices.

Measurements and Main Results: Device	**Cerene**	**Genesys HTA**	**Mara**	**Minerva**	**NovaSure**
Mechanism Energy Source/ Mode of Delivery	Hypothermic Liquid nitrous oxide filled liner (balloon)	Hyperthermic Recirculated heated saline	Hyperthermic Recirculated hot water vapor	Hyperthermic Argon gas/ plasma filled membrane (balloon) ionized by radiofrequency (RF) electrical current	Hyperthermic Bipolar RF electrode array
ITT	242	187	155	110	174
Procedure Time	6.9±1.1 min	26.4±12.1 min	4.3±1.6 min	3.1±0.5 min	4.2±3.5 min
Anesthesia					
General	0	55% (103)	6% (9)	9% (10)	27% (47)
IV Sedation[1]	3% (7)	30% (56)	76% (118)	82% (90)	73% (127)
Total IV[2]	**3% (7)**	**85% (159)**	**82% (127)**	**91% (100)**	**100% (174)**
Paracervical with oral medications	89% (215)	0	18% (28)	0	0
Paracervical only	8% (20)	15% (28)	0	9% (10)	0
Total No IV[2]	**97% (235)**	**15% (28)**	**18% (28)**	**9% (10)**	**0**

[1] with/without paracervical block and with/without other medications.

[2] Pairwise comparison between Cerene and other groups with all p<0.01.

8583 Posterior Approach for Uterine Artery Ligation in TLH (Tackling the Uterine Artery First Before the Bladder Dissection)

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Study Objective: Comparison of uterine artery first, posterior approach of bladder dissection (Newer approach) / versus lateral window approach (Conventional approach) in TLH.
Design: Case control study of total 627 patients of TLH spanning over 5 years.
Setting: All patients in modified dorsal lithotomy position, under GA.
Patients or Participants: Out of 627 patients 307 patients underwent TLH by lateral window approach (Control) and 320 cases done by posterior approach. Study was conducted at a tertiary referral center.
Interventions: In Posterior approach the posterior leaf of broad ligament is opened, and the uterine artery skeletonized and transected first and then the bladder dissection started. This is based on two sound anatomic principles that the plane of uterine artery dissection is the same as bladder dissection and more importantly it is the uterine artery that holds the ureters to the uterus. By first dissecting, coagulating and cutting the uterine artery, this step releases the anterior Mackenrodt's ligament and exposes the cotton candy plane of bladder dissection effortlessly.
Measurements and Main Results: Control group had 307 cases with 124 patients with previous surgery while study group had 320 patients with 150 with previous surgeries. Patients were in age group (30yrs to 73yrs), BMI (16.61kg/m^2 to 58.11kg/m^2), uterine weight (100gm to 3000gm). The ease of bladder dissection in an avascular plane was highly appreciable in posterior approach, i.e the study group. Two bladder injuries noted in conventional approach and no bladder injury noted in newer approach. Lesser time was spent in the uterine artery first approach, more than the time, the ease of achieving the plane of bladder dissection was remarkable.

Conclusion: We propose, the uterine artery first, posterior approach as a novel, safe and avascular dissection of bladder in face of previous surgeries. Sound anatomic principles are applied in formulating this approach.

8588 Tips and Tricks to Perform Laparoscopic Nerve-Preserving Sacrocolpopexy

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Study Objective: The objective of this video is to show a nerve- preserving surgical approach for apical prolapse in order to diminish the rate of complications of laparoscopic sacrocolpopexy.
Design: Presentation of one case of a patient with POP-Q stage IV and explain the steps of the surgical approach highlighting the tips and tricks to perform a nerve-preserving sacrocolpopexy
Setting: This procedure was performed at Hospital Militar de Especialidades de la Mujer y Neonatología, Mexico in October 2021.
Patients or Participants: A 68-year-old patient is presented with a history 3 vaginal deliveries and obesity grade I. The patient has previously undergone abdominal hysterectomy in 1990 and came into the consultation with foreign body sensation in the vagina of 1 year of evolution. In the physical examination we diagnose a pop-q stage 4.
Interventions: In this video, show a laparoscopic nerve-preserving sacrocolpopexy for treatment of the apical prolapse.
Measurements and Main Results: The surgical treatment was performed successfully with no trans or post-surgical complications, the surgical bleeding was 10 cc, the surgical time was 150 minutes, the patient was discharged 24 hours after the surgical event. At the follow-up at 6 months the patient is without pelvic pain, without voiding dysfunction, or recurrence of the prolapse.
Conclusion: Performing nerve preservation during sacrocolpopexy is a technique that can be performed systematically and safely, since laparoscopy allows identification of the nerve and vascular structures to be preserved in order to reduce the risk of previously described complications derived from denervation during the open procedure.

8602 Adopting Sentinel Lymph-Node Mapping in Early Endometrial Cancers- a Pilot Study

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Study Objective: Sentinel Lymph node mapping has emerged as the new frontier in surgical staging of early endometrial cancers. Different colorimetric and radioactive tracers have been proposed. Fluorometric mapping using indocyanine green (ICG) appears to be suitable and attractive alternative to provide reliable staging.
Design: in this video we present the technique of SLN mapping in 2 cases followed by para-aortic Lymphadenectomy in one case with positive sentinel lymph node using ICG and near-infrared technology provided by the newer imaging systems. Together we also report the preliminary experience on the first 25 cases performed at our center since 2021.
Setting: After complete evaluation early well differentiated endometrial carcinomas were selected to undergo sentinel lymph node mapping. The patients were positioned in the in a dorsal lithotomy position after complete written informed consent. We adopted the Memorial Sloan Kettering Cancer Center SLN algorithm; All samples were subjected to frozen section and ultra-staging. . SLN was detected in all the cases (25/25, 100%).
Patients or Participants: During this period till date 25 cases have been enrolled.
Interventions: Laparoscopic staging surgery.
Measurements and Main Results: Bilateral SLN was detected in all the cases (100%). 13 (52%) patients received systematic pelvic lymphadenectomy after SLN mapping, and 1 patient underwent a para-aortic lymphadenectomy for positive pelvic lymph nodes. There were no peri-operative complications detected.
Conclusion: SLN mapping has been acknowledged by National Comprehensive Cancer Network as a viable option for management for selected uterine malignancies. Currently near infrared imaging technology is built in many camera systems and provides real-time imaging with ICG. Ours is an ongoing study and this is our preliminary observations, and these indicate that SLN mapping is an effective and safe procedure with high overall detection and low false negative rates.

8605 Gynecologic Laparoscopy in the Bariatric Patient: A Retrospective Review of Abdominal Access and Associated Complications

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Study Objective: To provide clinical direction on laparoscopic abdominal entry techniques in women with known history of laparoscopic Roux-en-Y Gastric Bypass (RYGB) undergoing gynecologic surgery and to identify any associated complications.
Design: Retrospective Chart Review and Case Series.
Setting: Community-based tertiary care medical center.
Patients or Participants: All patients who underwent RYGB between 2013 and 2020 and had a subsequent gynecologic procedure.
Interventions: Abdominal access.
Measurements and Main Results: Thirty-one patients were identified, of which 18 had an adnexal surgery and 13 a hysterectomy. At time of surgery, the mean age was 44 years and body mass index was 32 kg/m^2. The average interval time from RYGB to gynecologic surgery was 29 months. The majority of women (71%) had additional abdominal surgeries, among them 82% had prior laparotomies. Three entry sites were identified at the initial attempt to access the abdominal cavity; umbilical (71%), left upper quadrant (LUQ, 26%) and left lower quadrant (LLQ, 3%). Closed entry technique using the Veress needle was the most commonly used entry technique (68% versus 29% for optical trocar entry and 3% for open entry). There were no injuries resulting from abdominal access irrespective of the entry site or technique chosen. However, access was unsuccessful in 25% (2 out of 8) of the cases when attempted in the LUQ, resulting in conversion to alternative entry sites.
Conclusion: Successful and safe abdominal access in the bariatric patient can sometimes be challenging and preoperative surgical planning is essential. While no injuries during entry were reported regardless of site chosen, closed entry at the umbilicus using the Veress needle was the technique the most practiced and was associated with fewer attempts and conversions to alternative sites as compared to LUQ entry.

8608 Training Validation of a Novel Tissue Containment System Using a Laparoscopic Simulator

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Study Objective: To review how training validation occurs, introduce the use of a novel device for contained morcellation, and discuss how simulation training validation plays a role in FDA compliance of device development.
Study Design: Prospective observational study.
Setting: Urban tertiary care centers.
Patients or Participants: Twelve US gynecologic surgeons with experience in power morcellation.
Interventions: The surgeons observed all procedures for completion of the critical task including watching an animated video for concept, reviewing instructions with a video example, watching a simulated procedure, performing a simulated procedure, and reviewing the instruction for use packet (IFU). After a break, surgeons returned to perform contained tissue extraction using the device without instruction.
Measurements and Main Results: Both a study coordinator and a gynecologic surgeon observed all procedures. A questionnaire was completed by each participant on usability of the device. Bag integrity was immediately tested after each procedure with air inflation. Bags were collected for bacterial emersion and viral penetrance testing with controls for final confirmation.
Results: Twelve gynecologic surgeons performed the simulated procedure. All participants felt the training and IFU were clear and understandable. Most surgeons strongly agreed or agreed that the training was adequate for proper use of the device. All surgeons strongly agreed or agreed that they felt competent to use the device in surgery following training. No study bags were ruptured during power morcellation based on air inflation testing.
Conclusion: Training validation in a simulated laparoscopic environment produced the intended result of appropriately training surgeons on a novel device. Surgeons agreed that the training allowed them to achieve competence in using the device while maintaining bag integrity. Validation training may be an important part of device development as it has the ability to improve surgeon competence and maintain safety with a new device.

8615 Day-Surgery for Endometriosis in Canada: A Retrospective Cohort of Trend and Regional Variation in Types of Surgeries and Complications

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Study Objective: This study assessed the temporal trend and regional variation in day surgeries for endometriosis and perioperative complications.
Design: A retrospective cohort study.
Setting: N/A.
Patients or Participants: We used data from the National Ambulatory Care Reporting System (NACRS), which includes data from 4 provinces (Ontario [ON], Alberta [AB], Nova Scotia [NS], and Prince Edward Island [PEI], ordered by the proportion of the rural population). 16,982 women aged 15-44 years undergoing day-surgery for endometriosis between 2015 and 2019 were eligible.
Interventions: Surgeries were categorized as minor conservative (e.g., biopsy or minor adhesiolysis) or major conservative surgeries (e.g., lesion excision or resections) or hysterectomies.
Measurements and Main Results: 16,982 patients underwent day-surgery over the study period; 39% were minor uterine conservative surgeries, 57% were major uterine conservative surgeries, and 4% were hysterectomies. The rate of day surgeries for endometriosis remained nearly constant at 80 to 90 cases per 100,000 women of reproductive age (p-value= 0.12). The rate of day-surgeries was significantly different between provinces and higher in provinces with greater proportions of rural population than the province with the lowest proportion of the rural population (AB=94, NS=93 vs. ON=85 per 100,000 women of reproductive age: p-values <0.02). The perioperative complication rate was 6% and 15% for hysterectomies, and 6% and 5% for major and minor conservative procedures, respectively. After adjusting, the odds of complications decreased with the time (OR comparing 2019 to 2015: 0.84; 95% CI 0.73 to 0.98). There was a significant regional variation, with the highest complication rates in provinces with a higher proportion of the rural population than in the one with the lowest proportion of the rural population after adjustment [PEI vs. ON:4.13 (95% CI: 2.58 to 6.62), and NS vs. ON:1.47 (95% CI: 1.11 to 1.95)].
Conclusion: The rate of day-surgery and perioperative complications for endometriosis was higher in provinces with higher proportions of the rural population.

8627 Evaluating the Feasibility of Assigning 2021 AAGL Endometriosis Classification Scores to Pre-Operative MRI Imaging

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Study Objective: To evaluate the feasibility of applying the AAGL 2021 Endometriosis Classification system to pre-operative MRI findings in order to predict surgical complexity.
Design: A retrospective chart review of patients who had a pelvic MRI performed for the indication of pelvic pain and underwent surgery for presumed endometriosis.
Setting: N/A.
Patients or Participants: 190 charts were reviewed of patients referred for an MRI for pelvic pain. Of those patients, 47 had both an MRI and subsequently underwent pelvic surgery.
Interventions: N/A.
Measurements and Main Results: Of the 190 charts reviewed, 48 patients had both an MRI and underwent pelvic surgery. Using the AAGL Endometriosis Classification system, patients were assigned a score for their MRI and operative findings. When measurements were not specified in the MRI report, they were reviewed on the images or assigned based on terminology of "mild" and "severe." Scores for operative findings were based on explicit use of the scoring system (14.89%) or deduced from the operative and pathology reports. Scores differed significantly for overall AAGL score ($t(46) = 3.964$, $p = 0.00026$) with a mean difference between operative and MRI scores of 6.55 (mean operative score of 16.3, SD = 12.54; mean MRI score 9.74, SD = 8.42). Scores differed significantly for stage of endometriosis ($t(46) = 4.15$, $p = 0.0001$) with a mean difference between operative and MRI scores of 0.809 (mean operative score of 2.4, SD = 1.48; mean MRI score 1.57, SD = 1.28).
Conclusion: Use of the AAGL Classification system has been implemented to better assess surgical complexity of endometriosis cases. Assigned scores for MRI results, however, differ significantly from operative findings suggesting that there are limitations to the adoptability of this system to imaging findings. Future consistent use of the scoring system in operative reports may improve consistency and more detailed imaging reports may improve accuracy of assigning scores to pre-operative imaging.

8633 ERAS Implementation in Hysterectomy Patients at a Public Hospital during the COVID-19 Pandemic

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Study Objective: Immediately prior to the COVID-19 pandemic, in early 2020, our public hospital implemented an enhanced recovery after surgery (ERAS) protocol. The purpose of this study was to evaluate ERAS outcomes for hysterectomy patients at our public hospital given concerns about barriers to care in our underserved population.
Design: A retrospective analysis was performed comparing outcomes (% outpatient cases, length of stay, peri-operative opioids, % ED return) for hysterectomy patients for pre- and post- intervention periods (2019 and 2021). Outcomes were compared using Fisher's exact or t-test.
Setting: A tertiary care public hospital.
Patients or Participants: All patients who underwent hysterectomy in the years 2019 and 2021 at our medical center.
Interventions: ERAS protocol was implemented in early 2020.
Measurements and Main Results: 356 pre-intervention and 285 post-intervention hysterectomy cases were analyzed. The majority of patients were Hispanic/Latinx in both groups (80% vs. 78%; p=0.43). There was no significant change in the percentage of minimally invasive procedures (71% vs 68%; p=0.49). The percentage of outpatient hysterectomies increased from 0% to 49% (p<0.0001), and the mean length of stay (LOS) decreased from 1.7 days to 1.1 days (p<0.0001). Peri-operative mean morphine milligram equivalents (MME) decreased from 77 to 60 (p<0.0001). Mean post anesthesia care unit stay increased from 178 to 261 minutes (p<0.0001). There was no increase in returns to the emergency department <30 days (12% vs 9%; p=0.31) or mean number of opioid pills prescribed (12 vs 13; p=0.14).
Conclusion: ERAS implementation for hysterectomy patients at our public hospital decreased LOS and peri-operative opioids without increasing ED returns. Although there was initial hesitation in adopting the ERAS protocol, these changes proved to be feasible and safe in our underserved patient population. The COVID-19 pandemic likely helped to expedite the integration of outpatient management, which resulted in a decrease utilization of our limited inpatient resources, at a crucial time for our health system.

8636 Metabolic Profiling of the Endometrium in Patients with Recurrent Uterine Myoma.

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Study Objective: Identification of biomarkers for recurrent uterine fibroids based on metabolomic analysis of the endometrium.
Design: Level II Canadian Task Force.
Setting: Operative Gynecology Department, National Medical Institute of Obstetrics, Gynecology and Perinatology named after Academician V.I. Kulakov, Moscow, Russia.
Patients or Participants: 35 patients with newly diagnosed uterine fibroids (UF) and 31 patients diagnosed with recurrent uterine fibroids (RUF) underwent laparoscopic myomectomy. 15 patients in the comparison group (CG)underwent intrauterine septum resection.
Interventions: Endometrial biopsy was performed in the 1st phase of the menstrual cycle during the surgery. Histopathological examination and lipidomic analyses of the specimens took place. Qualitative and quantitative assessment of lipidoma was performed using electrospray mass spectrometry.
Measurements and Main Results: Statistically significant differences in lipidomic status of the compared clinical groups were revealed. The lowest level of lipids of the following classes was noted in patients with RUF: ceramides, sphingomyelins, phosphatidylserines (exceptions - PS 34:0, PS 36:0, PS 42:5, PS 46:1), significant phosphatidylethanolamines (exceptions - PE 44:2, PE 38:3, PE 42:6, PE 44:6, PE O-38:3, PE O-38:4), phosphatidylcholines (exceptions - PC 38:5, PC 36:4, PC O-38:1, PC O-38:0, PC O-38:2, PC 38:2, PC 40:0), phosphatidylglycerols with a total chain length of less than 40 carbon atoms. The highest level of lipids of the following classes was noted in RUF when comparing with lipidomic data of patients with UF and CG: lysophosphatidylcholines, phosphatidylglycerols with a total chain length of more than 40 carbon atoms.
Conclusion: Analysis of the lipid composition of the endometrium revealed ceramides, sphingomyelins, phosphatidylserines, phosphatidylethanolamines, phosphatidylcholines, the levels of which differ significantly in endometrial tissues of patients with RUF as compared with patients in uterine fibroids and comparison groups. This data opens new possibilities for lipidomic-based analysis of the endometrium for prediction of recurrence of uterine fibroids.

8640 Emergency Laparoscopic Cerclage in a Case of Advanced Gestational Age with Incompetent Cervix

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Study Objective: To demonstrate the feasibility of emergency laparoscopic cerclage in a patient with advanced gestational age (22 weeks) with incompetent os as a rescue method to prolong the pregnancy till the period of fetal viability.
Design: Stepwise demonstration of laparoscopic cerclage procedure with narrated video footage along with radiological images.
Setting: Tertiary care hospital.
Patients or Participants: A 28-year primigravida with 22 weeks pregnancy presented with pain in abdomen since 2 days. Per speculum examination revealed open cervical canal with bag of membranes in vagina. Preoperative ultrasound confirmed open cervical canal with bulging bag of membranes in the cervical canal and vagina. After primary treatment with progesterone and tocolysis, patient settled with relief of pain and taken for laparoscopic cerclage. Patient was counseled about the risks and benefits of surgery.
Interventions: Emergency laparoscopic cerclage done. As pregnancy was of 22 weeks, there was space restriction in pelvis. Bladder dissected from cervix and course of both uterine vascular pedicles identified. To facilitate the passage of nonabsorbable polyester tape of 30 cm x 5 mm, broad ligament windows were created on both sides. The tape passed medial to the uterine vascular pedicles and lateral to cervix and both ends tied anteriorly. Vaginal assistant gently pushed bag of membranes with sponge above cervical stitch while tightening the knot.
Measurements and Main Results: Postoperative recovery of patient was uneventful. Post operative ultrasound showed internal os closed with stitch in situ with membranes above the level of internal os and cervical stich. Patient closely monitored in the antenatal period. The patient continued

the pregnancy till term. Elective caesarean section was performed at 37 weeks with healthy baby.
Conclusion: Laparoscopic cerclage can be used as a rescue method in patients with advanced gestational age with incompetent os to prolong the pregnancy till the period of fetal viability.

8653 Technique for Cosmetic Closure of the Umbilicus during Single Site Laparoscopy

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Study Objective: This presentation demonstrates a novel technique to ensure cosmetic closure of the umbilicus during single-site laparoscopy. Single-site laparoscopy has grown in popularity as it leaves a single abdominal scar that can be hidden within the umbilicus. However, usual closure technique is often not sufficient to optimize the appearance for patients.
Design: Instructional Video.
Setting: Tertiary care center outside of a major city in the United States.
Patients or Participants: Patients presenting for single-site laparoscopic gynecologic surgery.
Interventions: Abdominal entry is performed using Hassan technique through a single vertical skin incision extending just superior and inferior to the umbilical edges. After the procedure is complete, the fascia is closed with a single running 0 polyglactin suture. The skin is undermined to create bilateral flaps and redundant tissue is trimmed. The fascia is grasped by a Kocher clamp and two throws of a 2-0 polyglactin suture on a non-cutting needle are driven through one skin edge, through the fascia and through the opposite skin edge to recreate the umbilical base. The sutures are tied down in sequence, and the remaining skin is reapproximated with several interrupted, inverted 3-0 polyglactin sutures on a cutting needle. Using this method, the final incision is under 3 centimeters and the natural depth of the umbilicus is recreated. The incision is cleaned and dressed with petroleum gauze, an eye patch, and an occlusive dressing with excess air removed with an empty syringe.
Measurements and Main Results: At 6 weeks after surgery the incision is hardly visible, and the reconstructed umbilicus resembles its natural preoperative appearance.
Conclusion: When single-site laparoscopy is performed, cosmesis can be optimized by using a specialized technique to reconstruct the umbilicus.

8659 Interleukin-33 Promotes Endometriosis Fibrosis by Inducing Fibroblast to Myofibroblast Transformation.

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Study Objective: Fibrosis is one of the important features of endometriosis (EMs). Inflammatory factors including interleukin (IL)- 33 enriched-microenvironment is implicated in the pathogenesis of fibrosis. However, the mechanism of IL-33 in fibrosis of EMs remains unclear. In this study, we elucidate the role of IL-33 in the regulation of fibrosis.
Design: N/A.
Setting: N/A.
Patients or Participants: N/A.
Interventions: Masson staining was performed to evaluate the degree of fibrosis. We examined the expression of lipid peroxides by immunofluorescence and the expression of IL-33 in the peritoneal fluid by ELISA. Eutopic and ectopic endometrial stromal cells (ESC) were cultured, and an oxidative stress model in vitro was established. The expression of IL-33 in the supernatant of ESC was detected by real-time PCR and ELISA under the oxidative stress model. Real-time PCR and western blotting were performed to evaluate the effect of IL-33 on fibroblast- myofibroblast transformation (FMT) of ESC.
Measurements and Main Results: The percentage of collagen area in ectopic endometriotic lesions was higher than in eutopic endometrium. The expression of IL33 in the peritoneal fluid was significantly increased in the EMs patients than in the controls, accompanied by higher expression of lipid peroxide in ectopic endometriotic lesions. The oxidative stress model was successfully established by reactive oxygen species (ROS): the ROS level in ESC increased significantly, peroxidase decreased due to consumption, and lipid peroxide expression increased. The expression and secretion of IL-33 were significantly increased in ESC induced by oxidative stress, especially in ectopic ESC. After treatment with IL33, the expression of collagen Ⅰ and α- smooth muscle actin that promoted FMT of ESC increased.
Conclusion: Our findings indicated ROS could promote the expression and secretion of IL33 in ESC. On this basis, IL33 could promote FMT of ESC. Our findings suggested IL33 was one of the factors promoting endometriosis fibrosis and provided a novel therapeutic target for the management of endometriosis.

8661 Identification of Distinct Pathways in Ovarian Endometrioma and Deep Endometriosis

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Study Objective: To identify the difference in molecular mechanisms between ovarian endometrioma (OMA) and deep endometriosis (DE).
Design: N/A.
Setting: N/A.
Patients or Participants: N/A.
Interventions: Gene expression matrix of GSE141549 was downloaded from Gene Expression Omnibus (GEO) database and conducted to compare deep endometriosis with ovarian endometrioma. Differentially expressed genes (DEGs) were identified by limma package. Specific pathways related to OMA and DE were identified by gene set enrichment analysis (GSEA) and Weighted correlation network analysis (WGCNA). xCELL and CIBERSORT were used to analyze the difference in immune and stromal cell enrichment between OMA and DE.
Measurements and Main Results: 91 DE samples and 28 OMA samples were analyzed, from which we identified 406 DEGs between DE and OMA. WGCNA identified 14 co-expression modules, which were constructed by the top 5000 genes according to median absolute deviations. Module turquoise which was enriched in fibrosis and adhesion is most positively correlated with DE. Module blue, which was enriched in embryonic organ development and response to chemicals, is most positively correlated with OMA. The result of GSEA showed that cell adhesion-, fibrosis - and inflammation- related pathways were significantly enriched in DE samples, while pathways enriched in OMA related to steroid biosynthesis, metabolism of carbohydrates and amino acids. xCELL and CIBERSORT indicated that the differences between two groups were mainly in stromal cells rather than immune cells.

Conclusion: Through bioinformatic analysis, we explored the difference in gene expression profile between two common subtypes of endometriosis-OMA and DE. Fibrosis and inflammation seemed to be more associated with DE while OMA tended to be more related with steroid synthesis and metabolism. Further exploration of key genes and underling molecular mechanisms is needed to help developing novel therapeutic targets in treating endometriosis.

8665 Minimally Invasive Surgical Management of Placental Site Trophoblastic Tumor

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Study Objective: We present a unique case of presumed stage 1 placental site trophoblastic tumor (PSTT) with an incidental pancreatic mass noted on MRI. A minimally invasive surgical approach was planned in combination between gynecologic oncology and surgical oncology.
Design: Single patient case report.
Setting: Academic quaternary care hospital.
Patients or Participants: A 31-year-old G4P0131 was diagnosed with PSTT four months following a spontaneous abortion. Her preoperative evaluation included a β-hCG which plateaued at 80 milliunits/mL, magnetic resonance imaging with a 2 cm mass in the body of the pancreas, and no other evidence of metastatic disease. The pancreatic mass had imaging characteristics suggestive of a pseudopapillary neoplasm of the pancreas. Patient declined preoperative upper endoscopic ultrasound with biopsy. Due to the presumed low malignant potential of the pancreatic lesion and low likelihood of metastatic disease to the pancreas, she was deemed low-risk with a WHO score of 3. She had completed childbearing and surgical management with hysterectomy was recommended.
Interventions: A combined robotic assisted total laparoscopic hysterectomy and laparoscopic distal pancreatectomy and splenectomy.
Measurements and Main Results: The patient was discharged home on postoperative day three after the above procedure and had an uncomplicated postoperative course. Final pathology revealed a metastatic implant in the pancreas. The patient has since completed adjuvant chemotherapy with EMA/CO. β-hCG down trended to within normal limits and the patient currently has no evidence of disease.
Conclusion: We present a case of a rare tumor with an unusual metastatic pattern. Given its rarity, minimally invasive surgical management should remain the standard for low risk PSTT. However, preoperative biopsy could be beneficial with unusual imaging findings as high risk PSTT requires chemotherapeutic management.

8681 Complications Among Patients Undergoing Mesh Graft Revision Surgery: A Retrospective Cohort Study of the NSQIP Database

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Study Objective: To compare complication rates among patients having urogynecology surgery for revision of a mesh graft placed for management of pelvic organ prolapse.
Design: A retrospective, population-based cohort study was conducted using the American College of Surgeons National Quality Improvement Program (NSQIP) database. A multivariable logistic regression analysis adjusting for age, race, smoking status, ASA category and concomitant procedures was completed. The outcomes were a composite of complications excluding urinary tract infections (UTI), and hospital readmission within 30 days.
Setting: Inpatient and outpatient mesh revision surgeries performed at community and academic hospitals captured in the NSQIP database from 2012 to 2019.
Patients or Participants: Patients undergoing mesh graft revision by urology or gynecology were classified into vaginal, abdominal or laparoscopic approach using Common Procedural Technology (CPT) codes. Patients having revision of a mid-urethral sling were excluded.
Interventions: Mesh graft revision surgery by vaginal, abdominal or laparoscopic approach
Measurements and Main Results: Of 1692 eligible patients, 1561 underwent vaginal, 74 underwent abdominal, and 57 underwent laparoscopic approach graft revision. The complication rate, excluding UTI, was 4.6% in the vaginal approach group, 12.2% in the abdominal approach group and 12.3% in the laparoscopic approach group ($p<0.001$). Compared to a vaginal approach, the abdominal approach group had higher odds of complications (abdominal: adjusted OR 2.76, 95% CI 1.30 − 5.83; laparoscopic: adjusted OR 1.86, 95% CI 0.73 − 4.72). The abdominal and laparoscopic groups had higher odds of readmission compared to the vaginal approach group (abdominal: adjusted OR 3.11, 95% CI 1.15 − 8.40; laparoscopic: adjusted OR 6.57, 95% CI 2.22 − 19.40). Clavien-Dindo IV complications were rare and only seen after vaginal surgery (0.4%, n=6).
Conclusion: Short term complications were uncommon after vaginal mesh graft revision surgery, and less common than following an abdominal approach.

8683 Robotic Single-Site Versus Laparoscopic Single-Site Hysterectomy in Benign Gynecologic Disease: A Single Surgeon's Experience

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Study Objective: The purpose of this study is to evaluate the feasibility and safety of robotic single-site hysterectomy (RSSH), and to compare postoperative outcomes between RSSH and laparoscopic single-site hysterectomy (LSSH) for benign gynecological disease.
Design: A retrospective study was conducted of all cases of RSSH and LSSH performed from January 2018 to February 2021.
Setting: N/A.
Patients or Participants: Among 170 consecutive patients who had undergone total hysterectomy for benign gynecologic disease, surgical outcomes were compared between the RSSH group (n=92) and the LSSH group (n=78).
Interventions: RSSH was performed using the da Vinci Xi robotic system with Lab single®, and LSSH using a handmade globe port at the umbilicus. And all operations were performed by a single gynecologic oncologic surgeon.
Measurements and Main Results: All operations were completed with no additional port insertion or conversion to laparotomy. There were no significant differences in the characteristics of the patients between the 2 study groups. The uterus weight was 389 ± 190 in the RSSH group and 390 ± 225 in the LSSH group. Mean operation time was higher in the RSSH group than the LSSH group (85.3 ± 26.5 vs 73.6 ± 26.5 min, $p < 0.0001$). However, the postoperative pain score was lower in the RSSH

group. The mean NRS score after 2 hours, 4 hours, 8 hours, and 12 hours was significantly lower than the LSSH group ($p < 0.0001$). Operative Mean hemoglobin drop (1.4 ± 0.9 vs 1.3 ± 1.0 g/dl, p = 0.122) and Mean postoperative day (3.1 ± 0.6 vs 3.1 ± 0.5 days, p = 0.943) did not significantly differ between two groups.
Conclusion: The RSSH using the da Vinci Xi system is feasible and safe in appropriately select patients with benign gynecologic disease. Additionally, prospective randomized clinical trials will be able to evaluate the potential benefits of Robotic single-site surgery.

8697 Vaginoplasty in MRKH: A Single Center Experience

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Study Objective: The aim is to compare the efficacy of MacIndoe and laparoscopic Davydov's vaginoplasty to create neovagina in MRKH patients.
Design: This was a retrospective clinical study carried out at a tertiary care center in North India, done over a period of 2 years on 14 patients of MRKH.
Setting: Out of 14 patients, 9 underwent MacIndoe's vaginoplasty and 5 had Davydov's laparoscopic vaginoplasty.
Patients or Participants: All the patients with the diagnosis of MRKH who underwent vaginoplasty over a period of two years were included in the study and were analyzed for various parameters (Clinical characteristics, intra-operative findings and follow up)
Interventions: Out of total 14 patients of MRKH, 9 underwent MacIndoe's vaginoplasty and 5 underwent Davydov's laparoscopic vaginoplasty.
Measurements and Main Results: All patients presented with primary amenorrhea and vagina was absent in all the patients. Single kidney was present in 14.28 % (2/14) patients. Mean age at presentation (17.33 vs 16.66) was similar in both groups (p value=0.87) while age at operation (24.8 vs 21.7 years) was higher in Davydov's as compared to MacIndoe's group but the difference was not statistically significant (p value=0.27). Intra-operatively, uterus was absent in 57.14% (8/14) and hypoplastic in 42.85% of patients. Duration of surgery was more in Davydov's group 114 min (100-135 min) and in MacIndoe's 33.88 min (30-60 min) which is statistically significant (p value<0.001). Neovaginal length was similar in both group (6.7 cm vs 6.5 cm), p value=0.6. During an average follow up of 1-3 years, 35.71% (5/14) got married and out of those 80% (4/5) patients had no coital difficulty.
Conclusion: Both the procedure are simple, safe, and effective surgical methods for vaginal reconstruction, but the Davydov's procedure require minimally invasive surgical expertise as compared to MacIndoe's technique.

8704 Evolving Referral Patterns and Management Following Implementation of a Multidisciplinary Fibroid Center

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Study Objective: Evaluate referral patterns and management of symptomatic fibroids following implementation of a multidisciplinary (minimally invasive gynecologic surgery [MIGS] and interventional radiology [IR]) fibroid center.
Design: Retrospective cohort study.
Setting: Academic medical center in New York, NY.
Patients or Participants: Patients who presented for initial fibroid consultation between January-June 2019 and January-June 2021. Consult providers included general gynecologists (GYN), MIGS, IR and others.
Interventions: In September 2020, our institution established a multidisciplinary fibroid center where patients had same-day consults with both MIGS and IR providers. Data were collected before and after implementation of the program with regards to patient demographics, fibroid characteristics, prior imaging and management, referral patterns, and management after consultation.
Measurements and Main Results: 615 patients met inclusion criteria: 273 patients in 2019 and 342 patients in 2021. Patients seen in 2021 were more likely to have previously tried medical management (30.1% vs 20.2%, p<0.01) and many had no prior treatment (53.2% vs 61.5%, p=0.04). There were more MIGS (65.5% vs 53.1%) and fewer general GYN (19.0% vs 25.6%, p=0.02) consultations in 2021. More patients presented for an additional opinion in 2021 (83.6% vs 67.0%, p<0.01), predominately with MIGS (58.8% vs 37.0%, p<0.01). General GYNs were more likely to refer to MIGS (79.3% vs 73.1%) and IR (16.0% vs 13.0%, p=0.046) in 2021. There was increased utilization of MRI imaging in 2021 among MIGS (66.5% vs 52.4%, p<0.01). Among patients who saw MIGS for consultation in 2021, more underwent uterine artery embolization (UAE) (13.8% vs 6.9%, p=0.04) and fewer underwent diagnostic hysteroscopy/dilation and curettage (11.7% vs 4.5%, p<0.01) within 1 year of consultation.
Conclusion: Many patients with symptomatic fibroids seek specialist opinions regarding their treatment options. A multidisciplinary fibroid management program with coordinated efforts between MIGS and IR allows for comprehensive counseling and may lead to more efficient and timely care and an increase in minimally invasive procedures including UAE.

8707 Robotic Assisted Hysterectomy for Large Fibroid Uterus with Approach of Endometriosis Stage Four: Surgical Strategies for Complex Cases

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Study Objective: Report minimally invasive approach in a complex case of large fibroid uterus with intraligamentary and parasitic myomas associated with deep endometriosis.
Design: Case report with description of the surgical approach.
Setting: The patient was in dorsal lithotomy position and the robot was docked for pelvic surgery.
Patients or Participants: Female, thirty-eight years old, with chronic pelvic pain and increased menstrual flow, who were already submitted into clinic treatment without response. She was nulliparous and had no desire of future pregnancy. Transvaginal ultrasound with bowel preparation showed large uterus with 159 × 81 × 112 mm and numerous nodules suggesting myomas. Lesions suggestive of endometriosis were found in rectosigmoid and retrocervical space, associated with adhesions producing obliteration of retrouterine recess.

Interventions: Patient was submitted to robotic assisted surgery. A large uterus was found with intraligamentary nodule located in left broad ligament, endometriomas in both ovaries and obliteration of posterior compartment. The first step was to release the adhesions followed by right oophoroplasty and left oophorectomy. In sequence, the dissection of pararectal spaces with ureterolysis and neurolysis were performed to remove endometriosis lesions in both sides, being the left side associated with a parasitic myoma. Due to the large uterus and reduced mobility, the strategy was to perform first its removal by vaginal morcellation, to provide better view of retrocervical lesion, which was removed followed by bowel shaving.
Measurements and Main Results: Complete excision of endometriosis lesions and large uterus hysterectomy with success. The patient had good postoperative recovery, without complications.
Conclusion: Robotic assisted approach to large uterus and endometriosis stage four is a good option for minimal invasive surgery. It is important that the surgeon is prepared to detect more extensive lesions than those previously described in imaging exams. Therefore, a deep knowledge of pelvic anatomy and systematic approach is essential for preservation of noble structures, such as ureter and nerve.

8711 Robotic Assisted Treatment of Deep Endometriosis, with Bowel and Ureteral Involvement

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Study Objective: To demonstrate a minimal invasive approach to treat a patient with deep endometriosis causing renal exclusion.
Design: A surgical video highlighting anatomy and describing the steps of a multidisciplinary surgery.
Setting: Tertiary care hospital. The patient was in dorsal lithotomy position.
Patients or Participants: Female, 41-year-old, G1 with a previous cesarean 8 years ago. Suffering from chronic pelvic pain. After imaging tests, the patient was diagnosed with deep endometriosis, the main lesions being: a retrocervical lesion with involvement of the vagina and intestine, a lesion causing ureteral constriction and 2 intestinal lesions.
Interventions: At first, the patient was submitted to laparoscopic nephrectomy, with subsequent removal of the piece vaginally. Afterwards, she underwent robotic-assisted surgery, being performed hysterectomy with left parametrectomy and bilateral salpingectomy, adhesiolysis, resection of peritoneal lesions, intestinal shaving, appendectomy, left ureterectomy, ureterolysis and neurolysis.
Measurements and Main Results: The robotic assisted treatment of deep endometriosis was completed without complication. At post-operative follow-up, the patient was doing well without concerns.
Conclusion: In this video, we demonstrate a treatment for patients with stage 4 endometriosis, through minimally invasive surgery, with preservation of nerves and noble structures. Robotic surgery has proved to be an attractive strategy for treating these types of injuries, with good results, as shown in the video.

8715 Enhancing Quality of Recovery and Satisfaction in Minimally Invasive Gynecologic Surgery - Utility of Structured Perioperative Education

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Study Objective: Determine if additional structured perioperative education improves patient quality of recovery (QoR) and satisfaction in patients undergoing minimally invasive gynecologic surgery (MIGS).
Design: Two-phased quality improvement initiative.
Setting: Academic institution.
Patients or Participants: All patients undergoing MIGS with fellowship-trained surgeons.
Interventions: Patient educational video and informational handout.
Measurements and Main Results: A total of 126 patients received standard of care (SoC) counseling with their individual surgeon and 96 patients received standard of care plus additional education (SoC+E). Thirty SoC patients and 31 SoC+E patients met criteria. There were no significant differences in age, BMI, and duration of surgery between our two cohorts, however we observed longer duration of surgery in the SoC+E group. Approximately 75% of all cases were performed via multi-port laparoscopy. When examining our primary outcome, QoR between the cohorts was significantly different (p=0.03). Interestingly, while we hypothesized that QoR would be better in patients receiving additional education, the opposite was true in our study population. There were no significant differences when patients were asked to rate their recovery and preoperative counseling. Patient satisfaction did not differ between SoC and SoC+E groups with 80% and 74% as "very satisfied" in each cohort respectively. When patients in the SoC+E group were asked to rate the preoperative video and handout, 45% of patients and 32% of patients "strongly agreed" and "agreed" that the video was helpful, respectively.
Conclusion: Current literature supports the safety and feasibility of same-day-discharge in MIGS. This places the patient in a unique position to self-manage their recovery at home. There is a paucity of data suggesting ways to actually enhance peri-operative counseling beyond individual surgeon counseling (SoC). We demonstrate a significant difference between QoR scores. Interestingly, those who only received surgeon counseling demonstrated higher QoR scores. Additional studies are needed to determine effective tools that will serve as an adjunct to each surgeon's standard of care

8718 Novel Use of Viscera Retainer for Safer Resection of Posterior Fibroids during Laparoscopic Myomectomy

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Study Objective: To demonstrate a novel use of an abdominal viscera retainer for improving safe access to the posterior aspect of the uterus during laparoscopic myomectomy.
Design: Surgical film.
Setting: N/A.
Patients or Participants: Patient with a large 7 × 7cm subserosal and intramural fibroid at the posterior aspect of the uterine body and fundus.
Interventions: A viscera retainer is a device widely used by surgeons to retain omentum and protect underlying bowel during fascial closure of laparotomy cases. The device has been used to improve speed of closure while significantly reducing the risk of unintended needle punctures. During this laparoscopic myomectomy case, we used an umbilical port for the camera, left and right lower quadrant ports, and a midline suprapubic

mini-laparotomy incision using a mini GelPoint. We used a medium sized viscera retainer, measuring approximately 6 × 9 inches. The retainer is able to be easily rolled for placement in the pelvis through the mini GelPoint. Once in the abdomen, the retainer can be positioned into the posterior cul-de-sac overtop of any underlying bowel. The weighted center spine helps to keep the device in place and prevents bowel from inadvertently moving into the surgical field.
Measurements and Main Results: The viscera retainer was able to be used as an intra-abdominal retraction device and physical protective barrier for the bowel during laparoscopic myomectomy, specifically during enucleation of the fibroid and suturing of the hysterotomy.
Conclusion: This unique use of a device typically reserved for laparotomy improved surgeon's access to the posterior aspect of the uterus for dissection and enucleation of posterior fibroids during laparoscopic myomectomy.

8724 Routes of Specimen Extraction in Laparoscopic Surgery

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Study Objective: To demonstrate the operative techniques of three entry methods for in-bag, extracorporeal specimen morcellation including vaginal approach, umbilical mini-laparotomy and suprapubic mini-laparotomy.
Design: We present a surgical video with narration which demonstrates three entry techniques for specimen morcellation.
Setting: Morcellation is a surgical technique which has been used for decades to allow removal of the uterus through the vagina or smaller abdominal incisions[2]. Electromechanical morcellation gained popularity in the early 1990s due its ease of use and efficiency, however concern for the spread of cancer cells in cases of uterine sarcomas led to the practice of manual morcellation using containment bags[1]. The American College of Obstetricians and Gynecologists continues to endorse a minimally invasive approach to hysterectomy when possible if the specimen is too large to be removed intact or removing the uterus intact through an abdominal incision[2].
Patients or Participants: Patients undergoing laparoscopic hysterectomy.
Interventions: We demonstrate three entry routes for manual uterine morcellation: vaginally following colpotomy, umbilical mini-laparotomy and suprapubic mini-laparotomy.
Measurements and Main Results: Specimen extraction via minimally invasive routes.
Conclusion: Vaginal entry following colpotomy, umbilical mini-laparotomy and suprapubic mini-laparotomy are three safe, effective entry methods for the morcellation of large, fibroid uteri which offers a minimally invasive approach for the removal of uterine specimens following laparoscopic hysterectomy.

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8731 Combined Preserving Fertility Treatment of Women with Cervical Pregnancy

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Study Objective: To evaluate the effectiveness of combined approaches for preserving fertility in patients with cervical/cesarean scar pregnancy.
Design: Canadian Task Force Level II Study.
Setting: Operative Gynecology department, National Medical Research Centre for Obstetrics, Gynecology and Perinatology named after V.I. Kulakov, Moscow, Russia.
Patients or Participants: 105 cases of cervical pregnancy were treated at Operative Gynecology department over the period of 15 years.
Interventions: 35 of 89 women with cervical pregnancy required combined therapy with preoperative methotrexate chemotherapy and resectoscopy; 3 patients had abdominal hysterectomy. Resectosopy included evacuation of embrio, curettage of the uterine cavity and cervical canal, resectoscopic coagulation of cervical vessels, ligation of the descending branches of the uterine arteries (as needed). In 33 cases with highest blood supply of chorion and its invasion into the cervix, we added bilateral selective uterine artery embolization (SUAE). Parameters for each approach were established.
Measurements and Main Results: The gestational age ranged from 5 to 10 weeks. Patients with cervical pregnancy received methotrexate at an average of 50 mg/every 48 hours, leucovorin administered at a dose of 6 mg after 28 hours after methotrexate injection. The total dose of administered methotrexate was 200 to 300 mg. Surgical procedure started at decreased level of β-hCG about 4000-7000 IU/l. The blood loss in all cases after SUAE was less than 30 cc. The effectiveness of organ-spearing treatment of cervical pregnancy is 96.63% and 100% in cesarean scar pregnancy.
Conclusion: The results of our study suggest that resectoscopic removal of embryo preceded by cytostatic therapy with methotrexate and leucovorin allows to preserve fertility in women with early cervical pregnancy.
In cases of chorion invasion into the cervix and myometrium SUAE following resectoscopy appears to be a treatment of choice.

8732 Laparoscopic Bilateral Gonadectomy in a Patient with Mosaic 45,X/46,XY Turner Syndrome

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Study Objective: To demonstrate a laparoscopic technique for prophylactic bilateral gonadectomy in a patient with mosaic 45,X/46,XY Turner syndrome.
Design: We present a stepwise, narrated demonstration of our technique for risk reducing bilateral gonadectomy. We highlight key anatomy, and place special attention on techniques to permit excision of at least 2 cm of the gonadal vessels with the specimen.
Setting: Referral center in Upstate New York.
Patients or Participants: 27-yo G1P1 diagnosed with mosaic Turner syndrome (45,X/46,XY)
Interventions: Visual inspection of the pelvis was performed, and pelvic washings were obtained. The course of the ureter was dissected out within the retroperitoneal space, developing a window between the ureter and gonadal vessels. The peritoneum was opened medial

and lateral to the streak gonad to ensure removal of all tissue with potential for malignancy. The infundibulopelvic ligament (IP) was skeletonized and gonadectomy was performed transecting the IP 3-4 cm cephalad to the streak gonad. The same procedure was completed on the opposite side.

Measurements and Main Results: Successful laparoscopic bilateral gonadectomy was performed with an estimated blood loss of 5mL. Pathology demonstrated bilateral streak gonads without evidence of germ cell tumor.

Conclusion: Given the inability to reliably diagnose the presence of germ cell tumors in streak gonads preoperatively, the use of wide dissection at the time of laparoscopic bilateral gonadectomy for risk reduction in mosaic Turner Syndrome patients with Y-chromosome material is an important consideration.

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8734 Endometriosis Surgery: Factors Associated with Complete and Incomplete Management

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Study Objective: Incomplete surgery for endometriosis is associated with increased disease severity, however, there is limited data on potential reasons. This study aims to elucidate patient and surgical factors associated with previous incomplete and complete surgery.

Design: A retrospective cohort study of patients referred to a minimally invasive gynecologist over 1-year. Patients with complete and incomplete surgical treatments were compared. Exposure variables included referral reason, symptomatology, and severity of endometriosis and adhesions noted during surgery.

Setting: Tertiary-center endometriosis clinic.

Patients or Participants: Inclusion criteria included female gender assigned at birth, previous endometriosis surgery, and age 18 or greater. Charts were excluded if referral reason was unrelated to endometriosis.

Interventions: N/A.

Measurements and Main Results: One-hundred and twenty-nine charts met the criteria. Common reasons for referral included endometriosis (82.9%) and pelvic pain (70.5%), while reported symptoms included pelvic pain (80.6%) and dysmenorrhea (62.8%).

Surgical information was collected from the initial consultation, and 75 (58.1%) charts included operative notes. Disease severity was reported by previous surgeons in 55 (42.6%) cases: mild/minimal in 14 (14/55, 25.5%), moderate in 8 (8/55, 14.5%) and severe in 33 (33/50, 60%). Adhesions were present in 50 (38.8%) cases.

Surgical management was complete in 55 (42.6%) cases and incomplete in 31 (24.0%) based on operative history. In 43 (33.3%) cases, completeness could not be determined from available information. When incomplete, reasons cited included extent of disease (9/31, 29.0%), proximity to ureter (4/31, 12.9%), bowels (4/31, 12.9%), pelvic sidewall (2/31, 6.5%), procedure beyond consent (2/31, 6.5%) and adhesions (1/31, 3.2%). In 9 (9/31, 29.0%) cases, no reason was provided by the surgeon.

Conclusion: This review showed that incomplete surgery was often due to disease proximity to pelvic structures noted at the time of surgery. Further analysis assessing each factors' relationship with incomplete surgery and assessment of outstanding operative notes will provide more information to decrease incomplete surgery risk.

8740 Preparing for the Operating Room: What to Expect at Time of Surgery for Patients with History of Endometriomas

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Study Objective: This study aims to examine if history or presence of endometriomas is an independent risk factor for adhesive disease, longer operative time, and higher blood loss in patients undergoing endometriosis surgery.

Design: Our study was a retrospective chart review which reviewed the endometriosis cases of two surgeons at our institution from March 2018 to March 2021. A report was generated using CPT codes billed for the surgeries performed. 11 CPT codes were used to ensure we captured all endometriosis cases. These codes included any procedure of the ovary, fallopian tube, excision of endometriosis, or laparoscopic appendectomy. Charts were then reviewed and included in the study if endometriosis was confirmed on pathology. Comparisons were made using Wilcoxon rank sum and Chi-Squared tests.

Setting: N/A.

Patients or Participants: N/A.

Interventions: N/A.

Measurements and Main Results: The query resulted in 3,106 matches for the 2 surgeons using the 11 CPT codes queried with 1,120 individual surgical cases. Of these patients, 389 had endometriosis confirmed on pathology and were included in the analysis. We analyzed three outcome variables at time of surgery including presence of adhesions, case length, and blood loss in the setting of one risk factor, prior surgical or image history of endometrioma. There was a higher percentage of patients with a prior surgical or image history of endometrioma also having adhesions (76.47%), compared to those who did not (45.52%) ($p<0.001$). The median case length (372 min vs 221 min) and median blood loss (50cc vs 25cc) were both statistically significantly higher amongst patients with prior surgical or image history of endometrioma compared to those who did not.

Conclusion: Of patients undergoing surgery for endometriosis, those with endometriomas or a history of endometriomas had a higher rate of adhesions, longer case length, and greater blood loss compared to those who did not. This information will help improve surgical preparation, expectations, and counseling.

8741 Versius®, a Revolutionary Robotic Platform - First Endometriosis Surgical Trials in Brazil

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Study Objective: This study aims to assess a gynecological surgical team's early outcomes with the new Versius® platform in terms of safety and efficiency in minimally invasive gynecological operations.

Design: A prospective study that followed for 10 days endometriosis surgeries performed by the new robotic Versius® platform.

Setting: An operation room with space foi the surgeon console and of all base system units. All patients were positioned in the same way in dorsal decubitus. The trocar punctures followed the same techniques for the 4 robot arms.

Patients or Participants: 10 women with deep endometriosis.

Interventions: the first 10 cases of gynecological surgeries in the Americas using the platform Versius, performed by the same team in a private hospital in Sao Paulo, Brazil.
Measurements and Main Results: Ten robotic gynecological surgeries were conducted to treat endometriosis in individuals with an average age of 42 years and a BMI of 25.3. Six of the patients had severe endometriosis with an AAGL IV classification, whereas the other four had an AAGL II classification. Two of the instances were linked to hysterectomy, while one was linked to myomectomy. The average docking time was 24.7 minutes, while the average procedure duration was 93.7 minutes, and all procedures were without complications. Nine of the ten patients were discharged within 24 hours after the operation, and one was discharged within 48 hours. Collisions between the surgical arms were noticed throughout procedures, necessitating changes to the placement of the units or further "port-training" to establish a better fit and avoid collisions. All patients had the same standardization of trocar placement for the highest efficiency and best cosmetic result (pictures below).
Conclusion: CMR's Versius® system and the treatment of deep endometriosis surgery are encouraging, but additional cases should be monitored to measure learning curve time and improvements in the positioning of units to avoid collisions.

8744 Factors Associated with Oophorectomy Among Pediatric Ovarian Torsion Patients

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Study Objective: Ovarian torsion (OT) is the fifth most common gynecologic emergency, with one-third of cases occurring in females younger than 20 years-old. We aimed to evaluate factors associated with oophorectomy at the time of surgery for suspected OT in our pediatric population.
Design: Retrospective cohort analysis.
Setting: Tertiary, academic medical center.
Patients or Participants: Patients less than 18 years of age undergoing surgery for suspected ovarian torsion between 2016-2021.
Interventions: Evaluation of patient demographics, presentation timeline, imaging characteristics, and surgical variables associated with oophorectomy as well as perioperative outcomes.
Measurements and Main Results: Forty-five pediatric patients underwent surgical management for suspected ovarian torsion. Five patients were excluded for planned management of antenatally diagnosed ovarian masses, of which 3 underwent oophorectomy. Of the 40 included patients, 26 (65%) were confirmed to be torsed intra-operatively. Seventeen of these patients (66%) underwent ovarian preserving surgery (OPS) while 9 (34%) underwent unilateral oophorectomy (UO). Between the UO and OPS group, there were no differences in age or race. There were no differences in ultrasound findings including absent flow, enlarged ovary, and peripheral follicles; however, the UO group had significantly larger associated ovarian masses (12.48cm vs 8.06cm, p = .015). The median time from presentation to surgical start was 480 minutes (IQR 336-800.75) in the OPS group versus 868 minutes (IQR 257.5-1353.5) in the UO group. There was no association with primary surgical service (Pediatric Surgery versus Gynecology) however time from presentation to OR was significantly faster amongst patients treated by gynecologists (p=0.018). 50% of oophorectomy patients had a minimally invasive approach compared to 78.6% in the OPS group; however, this varied significantly by surgical specialty.
Conclusion: Given the significant sequelae associated with oophorectomy, current standards in surgical management of OT recommend conservative, ovarian-preserving techniques. Our data supports that delayed time to surgery and larger adnexal masses are associated with oophorectomy at the time of surgical management.

8747 Excision of Endometriosis in a Postmenopausal Patient

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Study Objective: We seek to demonstrate endometriosis excision in a postmenopausal patient status post hysterectomy and explore the important clinical features of postmenopausal endometriosis.
Design: Case study.
Setting: Urban academic tertiary care center.
Patients or Participants: One postmenopausal female with history of biopsy proven endometriosis experiencing persistent pelvic pain and deep dyspareunia following prior total laparoscopic hysterectomy and endometriosis excision procedures.
Interventions: Exam under anesthesia, bilateral salpingo-oophorectomy, lysis of adhesions, excision of endometriosis, partial peritonectomy, and cystoscopy.
Measurements and Main Results: Intra-op findings included abundant filmy adhesions and focal hemorrhagic lesions, which appeared consistent with endometriosis. Pathology showed fibrous serosal adhesions and associated hemosiderin laden macrophages compatible with clinical impression of endometriosis, though classical findings of endometrial glands and stroma were absent. The patient reported near complete resolution of her prior symptoms following the surgery, without use of narcotic medication, and overall satisfaction with the procedure.
Conclusion: Endometriosis is an estrogen-mediated chronic inflammatory condition that is benign but has a significant impact on the quality of life of many people. Though symptoms are typically seen in premenopausal individuals, cases of postmenopausal endometriosis have also been shown and are estimated to account for roughly 1-5% of all cases. It is hypothesized that extra-ovarian estrogen production from adipose tissue or endometriosis implants may contribute to or drive these processes, but the precise mechanism and etiology is not well understood. Surgical management is particularly important for postmenopausal patients, especially those with endometriomas, given the increased association with malignancy. Here we present a case of a patient with postmenopausal endometriosis status post TLH who experienced significant symptom improvement following surgical treatment with bilateral salpingo-oophorectomy, partial peritonectomy, lysis of adhesions and excision of endometriosis lesions. More research is needed to fully understand the etiology, impact, and appropriate treatment options for postmenopausal endometriosis.

8760 Racial and Ethnic Disparities in Utilization of Laparoscopic Myomectomy

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Study Objective: When feasible, laparoscopic myomectomy has superior outcomes, including complication risk, recovery time and patient satisfaction, compared to open surgery. A few studies have shown mode of surgery for myomectomy to be influenced by a patient's race; we sought to further explore this association.
Design: Retrospective cohort.
Setting: 722 hospitals participating in the American College of Surgeons National Surgical Quality Improvement Program.
Patients or Participants: Patients undergoing myomectomy from 2014-2020.

Interventions: Patients undergoing laparoscopic or open myomectomy were identified by CPT code. We used log-binomial regression to estimate risk ratios (RR) and 95% confidence intervals (CI).
Measurements and Main Results: Among 24,416 patients, 25.0% were white, 40.6% Black, 9.9% Hispanic and 24.4% other/unknown race or ethnicity. White patients had a higher proportion of laparoscopic myomectomy (58.5%) than open myomectomy (41.5%), but all other racial and ethnic groups more frequently had open surgery (64.7% Black, 60.3% other/unknown, 52.9% Hispanic). All other racial and ethnic groups were significantly more likely than white patients to undergo open myomectomy (Black RR 1.56 [95% CI 1.51-1.61], other/unknown RR 1.45 [95% CI 1.40-1.50], Hispanic RR 1.27 [95% CI 1.21-1.34]). The RRs were essentially unchanged when controlling for patient factors that could influence route of myomectomy, such as age, BMI, medical comorbidities, and smoking. Even within the same procedure type, race was associated with risk of complications. Among laparoscopic myomectomies, Black patients were significantly more likely than white patients to have surgical morbidity (5.1% vs 3.0%, p<.0001); among open myomectomies, Black patients were significantly more likely than white patients to have both medical (1.1% vs 0.4%, p = 0.001) and surgical morbidity (19.9% vs 9.0%, p<.0001).
Conclusion: Race and ethnicity were associated with differences in route of myomectomy and risk of complications. Influencing factors could involve both fibroid burden and social determinants of health, including racism.

8761 Batwing Endometriosis: Radiographic Findings and Surgical Approach

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Study Objective: To present radiographic findings suggestive of deep infiltrating endometriosis of the uterosacral ligaments and posterior torus uterinus (referred to as batwing endometriosis) and review surgical considerations and approach to excision of disease.
Design: Description of imaging findings and surgical technique.
Setting: Academic teaching hospital.
Patients or Participants: Patients with batwing endometriosis on preoperative pelvic magnetic resonance imaging (MRI) and concordant intraoperative findings.
Interventions: Preoperative pelvic MRI and laparoscopic or robotic excision of endometriosis with and without hysterectomy.
Measurements and Main Results: Batwing endometriosis can often be associated with an obliterated posterior cul-de-sac and present significant challenges during laparoscopy. Here we review a systematic approach to aid with restoration of this space and focus on relevant anatomy to consider. The following important steps are discussed: methods for navigating ureterolysis, ways to shave disease and preserve neurovascular and ligament support, and finally, techniques to consider with vaginal cuff closure for concurrent hysterectomy. In addition to highlighting batwing endometriosis on MRI, key pelvic structures are identified including the ureter, uterine vessels, and pararectal space which all aid in dissection.
Conclusion: Identification of batwing endometriosis on preoperative pelvic MRI may improve surgical planning. Knowledge of important anatomic considerations and surgical steps allows for safe and effective excision for patients with batwing endometriosis.

8768 The Angled View of Hysteroscopy

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Study Objective: Understand the difference in viewpoint between a zero degree and thirty-degree hysteroscope.
Design: Recorded hysteroscopy performed with zero-degree and thirty-degree using an educational model and with patients.
Setting: Video recorded in OR with educational model and patient.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Visualize and understand the difference in viewpoint between a zero-degree and thirty-degree hysteroscopy.

8771 The Impact of Social Determinants of Health Delaying Treatment for Women That Undergo Hysterectomy for Abnormal Uterine Bleeding

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Study Objective: 1) Identify the social determinants of health that contribute to delayed treatment for abnormal uterine bleeding (AUB), defined as women presenting with large uteruses at the time of hysterectomy, and patterns of healthcare utilization over a 3-year period and 2) Assess health-related outcomes in women with delayed hysterectomy for AUB.
Design: Retrospective cohort study.
Setting: Single hospital system.
Patients or Participants: 1,361 women who underwent hysterectomy for benign causes of abnormal uterine bleeding over a 3-year period between January 1, 2014, to December 31, 2017.
Interventions: N/A.
Measurements and Main Results: Women with enlarged uteri ≥ 500 g at time of hysterectomy were more likely to present to the emergency department (10.9% vs. 7.0%, p=0.034) and subspecialty care visits (34.2% vs. 28.0%, p=0.047). There were no differences in generalist gynecological visits among the two groups. Black women disproportionately composed those with enlarged uteri (59.9% vs. 36.1%, p=<0.001). There were no differences identified in age, BMI, socioeconomic status, ethnicity or insurance type. Women who delayed treatment for AUB were more likely to undergo mini-laparotomy (2.7% vs. 0.8%, p=0.01) or laparotomy (68.9% vs. 24.2%, p=<0.001) compared to minimally invasive approaches, demonstrated lower pre-operative hemoglobin levels (11.5 vs. 12.3, p=<0.001), lower hemoglobin levels in a 3-year period leading up to hysterectomy (10.0 vs. 11.3, p=<0.001), increased estimated blood loss (373.3mL vs. 178.7mL, p=<0.001), procedure time (171.9 min vs. 145.1min, p=<0.001) and length of hospital stay (1.4 days vs. 0.6 days, p=<0.001).
Conclusion: Delayed treatment for women who ultimately underwent hysterectomy for abnormal uterine bleeding was associated with increased emergency department and subspecialty care visits, and this population was disproportionately composed of Black woman. Perioperatively, delayed treatment was associated with more open surgeries, increased blood loss, increased operative time, and longer hospital stays.

8772 The Impact of Acute Urinary Retention Volume on Postoperative Urinary Dysfunction Following Robotic Sacrocolpopexy

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Study Objective: Sacrocolpopexy (SCP) for pelvic organ prolapse is typically performed with a midurethral sling (MUS) to treat or prevent postoperative stress urinary incontinence (SUI). A known complication is the development of postoperative urinary dysfunction, namely obstructed voiding, chronic urinary retention (CUR) and eventual sling release. This study aims to investigate whether the degree of acute urinary retention (AUR) is predictive of longer-term sequelae.
Design: Retrospective case control study.
Setting: Academic-affiliated community hospital.
Patients or Participants: All patients (n=708) undergoing a robotic SCP with transobturator MUS placement by a single urogynecologist between January 2012 and March 2022 stratified by their post-void residual bladder volumes (PVRBV) were included in this study.
Interventions: Patients were grouped by their degree of PVRBV: ≤150mL (n=397), >150 and ≤300mL (n=111), >300 and ≤450mL (n=84), and >450mL (n=116).
Measurements and Main Results: Higher volumes of AUR had a statistically significant increase in the percentage chance risk of CUR. (6.3%, 16.2%, 10.7%, 14.7%, $p<0.05$). A non-statistically significant distribution was observed between PVRBV and requirement for eventual sling release (3%, 1.8%, 0%, 6%, p=0.08). There were no differences in other long term postoperative sequelae amongst variable degrees of acute PVRBV including urinary symptoms, need for postoperative medications or return to the emergency department or hospital readmissions. Patients with greater PVR volumes had lower body mass index (28.7, 27.7, 27.2, 26.8 kg/m^2, $p<0.05$). Other demographic variables were similar amongst groups.
Conclusion: Increasing BMI has a protective effect from developing CUR. Higher PVRBV in excess of 150mL were associated with a greater propensity for CUR. This had a trend toward requiring sling release and/or revision. Future studies are necessary to determine whether the degree of AUR is related to the procedure or pre-existing bladder dysfunction.

8776 Perioperative Outcomes of Robotic Versus Open Midline Specimen Extraction Fascial Site Closure

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Study Objective: Laparoscopic sacrocolpopexy (SCP) is typically performed to repair advanced stage pelvic organ prolapse. Surgeons often opt to perform a supracervical hysterectomy (SCH) rather than total during combination SCP to avoid mesh erosions/infections. Tissue extraction is accomplished by extending a midline port site and may be closed by either a traditionally open or intra-abdominal robotic technique. This study aims to evaluate the outcomes of these two closures.
Design: Retrospective cohort study.
Setting: Academic-affiliated community hospital.
Patients or Participants: All patients (n=183) undergoing a robotic-assisted SCH, SCP, and midurethral sling placement by a single urogynecologist in which the uterus was extracted from an extended midline port between January 2021 and March 2022 were included in this study.
Interventions: Cases (n=105) of extraction sites closed via an intra-abdominal robotic approach were compared to controls (n=78) of a traditional open approach.
Measurements and Main Results: Cases and controls had similar operative times (251 vs 258 mins, p=0.35). Cases required less pain medication use in morphine milligram equivalents (MME) during the hospital stay (12.1 vs 18.4 MME, $P<0.05$). Body mass index (BMI) averages were also greater amongst cases (28.3 vs 26.3 kg/m^2, $p<0.05$). No difference was observed in other demographic data including age, race, and comorbid medical conditions. No statistical difference was noted comparing returns to the emergency department or hospital readmissions between groups.
Conclusion: Robotic and open fascial closure after tissue extraction requires similar operative times. Robotic closure has decreased pain requirements with similar complication profiles and was performed on patients with greater BMI reflecting surgeon bias for its use in obese patients. Surgeons should consider intra-abdominal robotic closure especially when patient body habitus makes secure fascial closure from an open approach more challenging.

8777 Descriptive Postoperative Complications Following Robotic Sacrocolpoperineopexy in 1000+ Patients

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Study Objective: Sacrocolpoperineopexy (SCPP) repairs multicompartmental pelvic organ prolapse (POP) and involves extensive dissection along the anterior and posterior vaginal length to a greater degree than sacrocolpopexy. Medical literature is lacking large-scale studies of the complication profile for SCPP. This study aims to offer a descriptive investigation of the intraoperative and postoperative complications amongst over 1000 cases of SCPP.
Design: Descriptive study.
Setting: Academic-affiliated community hospital.
Patients or Participants: All patients (n=1243) undergoing a robotic-assisted SCPP by a single urogynecologist between January 2012 and March 2022 were included in this study.
Interventions: Of all patients, 821 (66%) underwent a concomitant hysterectomy: 62% supracervical, 4.1% total, and 34% with prior hysterectomy and vaginal vault suspension. 1117 (90.2%) were performed without co-surgeons ie. sling placement by a urologist or hysterectomy by a gynecologist. 1145 (92.1%) had a concomitant anti-incontinence procedure, with 91.2% being a transobturator sling.
Measurements and Main Results: The median age of all patients was 66 years old, with an average BMI of 28.2 kg/m^2. Rate of intraoperative complication was 1.4% (n=15); blood transfusion (0.1%, n=1), and bladder (1%, n=11), ureteral (0%), or bowel injury (0.3%, n=3). 35.8% (n=371) required discharge with home catheterization. 5.7% (n=61) of all patients had a return to the emergency department (ED) within 90 days of surgery mainly for pain (n=15), nausea and vomiting (n=3), constipation (n=8), or urinary tract symptoms (n=18). 2.7% (n=29) required readmission, and of those, 17.2% (n=5) required re-operation if readmitted to the hospital: incisional hernia repair (n=2), drainage of abscess (n=2), and pulmonary embolism thrombectomy (n=1).

Conclusion: SCPP is a treatment for advanced POP that has low rates of intraoperative complications and generally uncomplicated postoperative recovery. This case series of over 1000 procedures demonstrates the safety of the surgery and low rates of postoperative ED visits and hospital readmission on a large scale.

8778 Laparoscopic Low Anterior Resection of Endometriosis Pelvic Mass with Side-to-End Colorectal Anastomosis

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Study Objective: To perform resection of a recto-vaginal endometriosis mass and end-to-side bowel resection with minimally invasive surgery.
Design: Case study.
Setting: General endotracheal anesthesia. Foley catheter in place. Patient in modified lithotomy with both arms tucked, all pressure points padded and all extremities in neutral position. The patient received preoperative antibiotics and sequential compression devices were placed. The abdomen was prepped and draped in the usual sterile fashion.
Patients or Participants: Patient with endometriosis involving the rectum and vagina desiring minimally invasive surgery.
Interventions: Laparoscopic low anterior resection with side-to-end colorectal anastomosis, trachelectomy, bilateral oophorectomy, lysis of adhesion, flexible sigmoidoscopy, cystoscopy.
Measurements and Main Results: surgery performed without complications; patient recovery was uncomplicated.
Conclusion: We show in this surgical video the possibility to resect a recto-vaginal endometriosis mass and to perform end-to-side bowel resection using minimally invasive surgery without intra-operative or post-operative complications.

8786 Teaching Principles of Electrosurgery Via Simulation: Adverse Effects and Potential Complications

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Study Objective: To demonstrate a hands-on approach to teaching complications of electrosurgery via simulation.
Design: N/A.
Setting: N/A.
Patients or Participants: OB/GYN Residents.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Adverse effects and potential complications of electrosurgery can be effectively taught to OB/GYN surgical trainees using a low-cost meat model simulation

8787 Caring for Pediatric and Adolescent (PAG) Population: Tips and Tricks for the on-Call Gynecologist

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Study Objective: To provide an overview of key differences in surgical care of pediatric and adolescent gynecology (PAG) patients to generalists and MIGS surgeons.
Design: N/A.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: N/A.

8788 Effect of Endometriosis on Postoperative Outcomes after Hysterectomy Performed for Benign Gynecologic Disease

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Study Objective: Endometriosis affects 10% of reproductive aged women. Its impact on complications after gynecologic surgery is, however, not well known. This study aimed to investigate the effect of endometriosis on perioperative outcomes of patients undergoing hysterectomy for benign disease.
Design: The 2014-2019 American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) databases were used to select patients undergoing elective hysterectomy performed for benign indications. Propensity scores derived from logistic regression and inverse probability treatment weighting analysis were used to assemble weighted samples of patients with and without endometriosis. Primary outcomes included 30-day mortality, postoperative complications, and reoperations. Binary logistic regression was used to compare differences in the primary outcomes between patients with and without endometriosis.
Setting: N/A.
Patients or Participants: A total of 127,556 hysterectomy cases were identified. Of those, 19,618 (15.4%) had a diagnosis of endometriosis.
Interventions: N/A.
Measurements and Main Results: Patients with endometriosis were younger, had higher incidence of pelvic inflammatory disease and prior abdominal operations but lower prevalence of chronic comorbidities. The incidence of postoperative complications was higher in patients with endometriosis (9.3% vs. 8.4%; Odds ratio (OR) [95% CI], 1.12 [1.05-1.20]; P=0.001). However, the incidence of 30-day mortality (0.04% vs.0.03%; OR [95% CI],1.16 [0.38-3.52]; P=0.789) and reoperations (1.50% vs. 1.36%; OR [95% CI, 1.11 [0.92-1.33]; P=0.287) were not different in patients with and without endometriosis.
Conclusion: The rate of postoperative complications is higher in hysterectomies involving endometriosis compared to hysterectomies without endometriosis. Likely this is due to the anatomic distortion incurring increased surgical complexity. Patients and surgeons should be aware of this increased risk when planning surgery for suspected endometriosis.

8795 Impact of Surgical Procedures on Intestinal Function and Quality of Life in Patients with Deep Endometriosis: A Prospective Study

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Study Objective: To analyze the prevalence of intestinal discomforts in patients with deep endometriosis (DE) and the alteration of different surgical procedures on their intestinal function and quality of life at short-term follow-up.
Design: A prospective cohort study.
Setting: A university-based tertiary obstetrics and gynecology hospital.
Patients or Participants: Patients with deep endometriosis infiltrating the rectum treated in the same medical team since April 1, 2018.
Interventions: Patients underwent rectal shaving, disk excision or segmental bowel resection depending on the severity of DE.
Measurements and Main Results: The primary end point was the prevalence of intestinal discomforts, pain symptoms ranked by VAS (visual analogue score). The secondary end points were values of gastrointestinal questionnaires, including GIQLI(gastrointestinal quality of life index), Wexner constipation score, CRADI-8 (colorectal-anal distress inventory 8),and SF 36 to evaluate quality of life.
As of March 15, 2019,88 patients were enrolled, including 58 patients in group rectal shaving, 25 in disk excision and 5 in segmental bowel resection.59.04% (49/88) of patients had intestinal symptoms preoperatively, manifested as menstrual diarrhea 26(53.06%), bulge 19(38.78%) and hematochezia 13 (26.53%). However, postoperatively, the discomforts were mainly caused by diarrhea 10.23% (9/17) at 1-month follow-up(V1), constipation 40% (4/10) at 6-month follow-up(V6).
According to the follow-up, there are significant improvement in dysmenorrhea in all three group, but the improvement of intestinal discomfort only in group shaving were significant 0(0,2) vs 0(0,0) at V1 and 0(0,2) vs 0(0,0) at V6,$P<0.05$,respectively.Patients in group shaving had mild symptoms preoperatively, who had lower CRADI-8 and Wexner constipation scores than the other two groups. After surgical treatment, patients' gastrointestinal function were mild improved, but the SF-36 and the GIQLI score did not reach statistical significance among these 3 groups compared to the baseline.
Conclusion: For patients with complaints of periodic diarrhea, anal bulge and hematochezia, endometriosis should be considered. Although surgical procedures can improve patients' dysmenorrhea and intestinal discomfort, but, the occurrence of constipation in short term after surgery should be alert, especially in radical procedures.

8796 Comparative Analysis of Surgical Outcomes of Morbidly Obese Patients in Endometrial Cancer: Robotic Versus Laparoscopic Surgery

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Study Objective: Compare the surgical outcomes of robotic versus laparoscopic surgery in the treatment of endometrial cancer for morbidly obese patients.
Design: A cohort of morbidly obese patients who underwent robotic assisted hysterectomy with lymphadenectomy (RHLND) was compared to a historical cohort of patients who underwent laparoscopic hysterectomy with lymphadenectomy (LHLND) for the treatment of endometrial cancer. The estimated blood loss (EBL), average operative times (AOT), intraoperative and postoperative outcomes, number of pelvic (PLN) and paraaortic (PALN) lymph nodes retrieved, and number of conversions to open laparotomy were evaluated.
Setting: A tertiary hospital.
Patients or Participants: From 1999 to 2018, all patients with BMI >30 who underwent RHLND or LHLND.
Interventions: The surgical outcomes measured were EBL, operative times, intraoperative and postoperative complications, number of PLN and PALN retrieved, and rate of conversion to open laparotomy. Fisher exact tests or two tailed t-tests were used to analyze for difference.
Measurements and Main Results: 330 patients underwent surgical treatment for endometrial cancer between 1999-2018. 254 (77%) patients were RHLND and 76 (23%) patients were LHLND. The mean age and BMI were comparable. The AOT (123 minutes) and EBL (50cc) for RHLND was significantly less compared to AOT (169 minutes) and EBL (198cc) for LHND. The average number of pelvic lymph nodes in RHLND (18) and aortic lymph nodes (9) retrieved were significantly less than LHLND pelvic lymph nodes (24) and aortic lymph nodes (17). The rate of conversion to open procedures favor the RHLND group 0/254 (0%) compared to the LHLND 7/76 (9.2%). No significant difference for intraoperative RHLND 5/254 (2%) vs LHLND 2/76 (3%) and postoperative RHLND 17/254 (7%) vs LHLND 4/76 (5%) complication rate was noted.
Conclusion: The surgical outcomes for treatment of endometrial cancer in obese patients with RHLND compared to LHLND is associated with less blood, shorter operative time, less conversion to open with no difference in postoperative complication rate.

8798 Pressure-Induced Fibroid Ischemia: First-in-Human Experience with a Novel Device for Laparoscopic Treatment of Symptomatic Fibroids

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Study Objective: Assessment of feasibility of use of a novel fibroid treatment device intended to cause fibroid infarction by increasing intratumoral pressure.
Design: Prospective, single-arm, single-center. Follow up duration – 12 months post-procedure.
Setting: Subjects in dorsal lithotomy position; arms secured at the sides, shoulder pads in Trendelenburg position during laparoscopy. Surgeon on the subject's left, assistant on the subject's right; facing subject's legs. Laparoscopic tower at the midline of subject's legs.
Patients or Participants: Sixteen 30–50-year–old pre-menopausal black women indicated for hysterectomy with 2-6–cm type-2-, 3-, 4-, 5-, 6-, or 2-5-fibroids. Main exclusion criteria: prior myomectomy or surgical or minimally-invasive fibroid treatment, known/suspected pregnancy, pregnancy intent, prior pelvic surgery, ongoing anticoagulant therapy, life-threatening condition, contraindication for magnetic resonance imaging with gadolinium contrast. Eleven subjects completed the follow-up.
Interventions: The novel Empress fibroid treatment system comprises two handheld devices (OrbiTal, OrbiTight), a titanium ring, and a size-0

absorbable suture. OrbiTal was inserted into the abdominal cavity and a suture was passed around a fibroid. OrbiTight carrying the titanium ring was inserted thereafter, the suture was threaded through the ring, tightened, crimped, and left on the uterus outer surface. Multiple sutures could be placed.
Measurements and Main Results: Uterine and fibroid characteristics were calculated from fat-suppressed T1-weighted coronal, sagittal, and transverse planes on gadolinium-enhanced magnetic resonance images 1 day and 1,3, 6, and 12 months after the procedure.
At 3 months, fibroid volume decreased by 36.3% (P=.002) and continued to decrease until the 12-month follow-up (60.4%; P=.008). There were no failed procedures.
Improvement was observed at 3 months post-procedure in the Health-Related Quality of Life total, Energy/Mood, Control, and Sexual Function domains of the Uterine Fibroid Symptom and Quality of Life questionnaire.
Serious adverse events, unanticipated risks were not reported.
Conclusion: Initial assessment of the device supports feasibility of the approach for fibroid treatment, does not reveal safety concerns.

8801 Safe Hysteroscopic Management of Caesarean Scar Pregnancy

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Study Objective: Role of Hysteroscopy in the management of Caesarean Scar Pregnancy.
Design: Prospective.
Setting: Private clinic.
Patients or Participants: Patients with previous caesarean section and now presenting with amenorrhea and sonography confirmation of implantation in scar area with period of gestation not greater than 7 weeks.
Interventions: Operative Hysteroscopy under general anaesthesia with or without resectoscope.
Measurements and Main Results: Complete evacuation of pregancy-100%, Minor complications-1%. (Haemorrrhage).
Conclusion: Hysteroscopy is safe and effective in the management of complete evacuation of CSP as it allows:
Identification of scar site pregnancy.
Complete evacuation and confirmation.
Control of Haemostatsis.

8802 GYN 101: Introduction to Uterine Manipulators

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Study Objective: To understand the insertion techniques and use of various types of uterine manipulators.
Design: This video highlights the importance behind the use of manipulators during laparoscopy and identifies unique aspects of various types of manipulators. Additionally, we review how to properly insert and use manipulators.
Setting: The patient is placed in dorsal lithotomy for the video.
Patients or Participants: One patient is filmed to demonstrate the placement of a Fornisee manipulator for a robotic assisted total laparoscopic hysterectomy. A combination of simulation models and photographs were also utilized to review educational topics.
Interventions: The utility of manipulators during laparoscopy, various types of manipulators, and proper insertion techniques are reviewed.
Measurements and Main Results: We review how uterine manipulators assist with visualization, elevate the uterine vessels farther away from the ureters and bladder, and delineate the cervicovaginal junction assisting with colpotomy. Many manipulators have unique aspects that make them favored for specific clinical situations. This video demonstrates how extracorporeal hand movements position the uterus in an opposite fashion intra-abdominally.
Conclusion: It is important to know different manipulator types to tailor their use to specific clinical scenarios. Safe and accurate placement and proper movements are crucial in assisting the surgeon, especially during important dissection steps.

8809 Laparoscopic Cornual Resection after Ectopic Pregnancy in Fallopian tube Remnant

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Study Objective: To review ectopic pregnancies after salpingectomies. To demonstrate a safe and feasible approach to a laparoscopic cornual resection after an ectopic in a fallopian tube remnant.
Design: A single person case report with a stepwise demonstration of surgical techniques with narrated video footage.
Setting: Tertiary-care academic center.
Patients or Participants: A 31-year-old has a history a history of a right salpingo-oophorectomy in childhood and a left salpingectomy after a history of two ectopic pregnancies. She presented with a right fallopian tube remnant ectopic pregnancy, which was treated with methotrexate. Prior to embryo transfer, it was recommended for her to have this right tubal remnant removed.
Interventions: Vasopressin was administered into the uterus for bleeding prevention into the right cornua. A uterine manipulator was placed, and methylene blue was injected to delineate the tubal ostia and thus the area of resection. A small wedge resection of the cornua was performed and the uterus closed in 2 layers with a 2-0 V-loc suture.
Measurements and Main Results: N/A.
Conclusion: Ectopic pregnancies after bilateral salpingectomies are rare. In patients who desired invitro fertilization after a history of an ectopic pregnancy in a fallopian tube remnant, may safely undergo a resection of the uterine cornua, by a trained gynecologic surgeon.

8811 Diaphragmatic Endometriosis: Anatomopathology and Correlation with Surgical Technique in 230 Patients Treated in a Referral Center

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Study Objective: To define a decision-making algorithm for Diaphragmatic Endometriosis (DE) surgical treatment correlating laparoscopic appearance of endometriotic implants with their histopatological counterpart.

Design: All the cases of DE surgically treated in Our Department, from January 2004 to January 2021, were analyzed in a retrospective chart review.
Setting: DE lesions were correlated to intraoperative findings (morphology, localization, side of the diaphragm, diameter, depth of infiltration and number) and classified according to their histopathological features as:
•"Foci": bidimensional superficial peritoneal lesions, generally ≤ 1 cm diameter.
•"Plaques": thin fibrotic lesions, thickening the diaphragmatic peritoneum with no muscular infiltration, > 1cm diameter.
•"Nodules": solid, tridimensional implants, associated with partial or full-thickness infiltration of underneath muscle layers and generally > 1cm diameter.
Patients or Participants: Two hundred -thirty patients were collected.
Interventions: The histopathologic revision of all the specimens enabled us to select a different laparoscopic surgical approach, for each lesion, as the following:
Measurements and Main Results: •Argon Beam Coagulator (ABC) and/or Diathermocoagulation (DTC) for diaphragmatic foci;
•Diaphragmatic stripping is indicated for endometriotic plaques
•Nodulectomy is the right choice for endometriotic nodules, with the need of partial or full-thickness diaphragmatic resection according to the entity of muscular involvement.
Conclusion: A safe eradication of the implants requires a standardization of the surgical technique based on the knowledge of laparoscopic and histopathologic characteristics of lesions, thus avoiding intra- and post-operative morbidities.

8842 Optimizing Trocar Placement in Gynecologic Surgery for the Obese Patient: A Systematic Review and Meta-Analysis

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Study Objective: Obesity, as defined as a BMI of greater than 30 kg/m2, has been associated with increased surgical risk and increased technical difficulty. Many studies have evaluated ways of combating these challenges, including patient positioning and abdominal entry, however little has been reported in regard to ancillary trocar insertion site and techniques. This systematic review and meta-analysis aim to answer the question, what is the optimal trocar placement in the obese patient?
Design: A systematic review will be conducted using the following databases: Embase, Cochrane, Medline and Pubmed.
Setting: Clinical trials, randomized control trials, retrospective cohort studies and systematic reviews will be analyzed.
Patients or Participants: Women who have undergone laparoscopic surgery with a BMI of 30 kg/m2 or greater.
Interventions: Outcomes following laparoscopic gynecologic surgery related to trocar placement in the obese patient will be evaluated.
Measurements and Main Results: Statistical analysis will be performed using comprehensive meta-analysis software. Outcomes to be compared and evaluated will include successful surgery, complications such as vascular or bowel injury, unsuccessful trocar placement, conversion to open, wound infection, and operative time. Complete review and meta-analysis to be completed by August 2022.
Conclusion: Laparoscopic surgery in the obese patient has been known to have increased surgical risks and technical challenges. By determining the optimal trocar placement in the obese patient, we can improve surgical ergonomics, as well as the laparoscopic safety profile for this population.

8843 Laparoscopic Hysterectomy Under Minimally Invasive Anesthesia.

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Study Objective: In the minimally invasive era, laparoscopic gynecological surgery is currently performed under general anesthesia (GA), although regional anesthesia (RA) could be considered a valid alternative in some specific settings. Aim of this study was to assess the feasibility and the perioperative outcomes of laparoscopic hysterectomy in regional anesthesia from the point of view of the surgeon, anesthesiologist and patient.
Design: Retrospective case series.
Setting: University of Naples Federico II.
Patients or Participants: Five patients affected by benign gynecological disease (atypical endometrial hyperplasia or uterine leiomyomas).
Interventions: Laparoscopic hysterectomy under RA.
Measurements and Main Results: A database search was performed to identify patients who underwent laparoscopic hysterectomy under RA from April 2020 and September 2021. The postoperative pain, nausea and vomiting (PONV) and the antiemetic/analgesic intake were evaluated. Postoperative surgical and anesthesiological variables were recorded.
Duration of surgery was 84 ± 4.18 and no conversion to GA was required. According to VAS score, the postoperative pain during the whole observation time was less than 4 (median). A faster resumption of bowel motility (≤ 9hours) and patient's mobilization (≤ 4hours) were observed as well as a low incidence of post-operative nausea and vomit. Early discharge and greater patient's satisfaction were recorded. Intraoperatively pain score on a Likert scale during all the stages of laparoscopy in RA was assessed with only 2 patients complaining scarce pain (= 2) at pneumoperitoneum.
Conclusion: RA showed to have a great impact on surgical stress and to guarantee a quicker recovery without compromising surgical results. RA technique could be a viable option for patients undergoing laparoscopic hysterectomy.

8847 Office Operative Hysteroscopy Using the LiNA Operascope Lasso and Biopsy Forceps

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Study Objective: To evaluate the LiNA OperaScope Lasso and Biopsy Forceps for office hysteroscopy with polypectomy and targeted endometrial biopsy.
Design: Retrospective clinical study.
Setting: Private Gynecology Practice.
Patients or Participants: 148 patients who underwent office hysteroscopy, including 31 patients with polypectomy and 27 patients with targeted endometrial biopsy.
Interventions: Office hysteroscopy was performed with the LiNA OperaScope, a single use hysteroscope with an operative channel. Polypectomies were performed with the LiNA OperaScope Lasso (16 mm), a 5 Fr mechanical instrument with a basket at the distal end. Targeted biopsies were obtained with the LiNA OperaScope Biopsy Forceps (5 Fr).
Measurements and Main Results: In 2021, 148 hysteroscopies were performed in an office setting under local anaesthesia with paracervical block. The mean age of the patients was 53 years. 53% of the patients were menopausal. The main indications for hysteroscopy included abnormal uterine

bleeding, postmenopausal bleeding, abnormal findings during diagnostic imaging as well as endometrial polyps.
In 31 patient's polypectomies were performed with the LiNA OperaScope Lasso. In 29/31 patients the polypectomies were successfully completed (average polyp size 1,1 cm, ranging from 0,5 − 2 cm). In one patient the endometrial polyp was only partially removed due to large polyp size (2,5 cm). One patient did not tolerate the hysteroscopy procedure. In all successful polypectomy cases sufficient tissue samples for pathology assessment were obtained.
27 patients underwent endometrial biopsies with the LiNA OperaScope Biopsy Forceps. In 26/27 cases the procedure was completed successfully and sufficient tissue samples for pathology assessment were obtained. None of the patients who underwent endometrial biopsies with the LiNA OperaScope Biopsy Forceps experienced any interruption due to pain or loss of tolerability during the procedure.
Conclusion: The LiNA OperaScope Lasso and Biopsy Forceps are suitable instruments for hysteroscopic polypectomies and targeted endometrial biopsies in the office setting.

8849 Niamh Joyce MD, OBSTETRICS AND GYNECOLOGY, MRCOG, Fellow in Reproductive Medicine

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Study Objective: Video demonstration of fertility sparing laparoscopic treatment for a symptomatic Müllerian Tract abnormality
Design: Single Case Report.
Setting: Tertiary Academic Hospital. 3 port laparoscopy, with patient in Trendelenburg Lithotomy position
Patients or Participants: A 16-year-old nulliparous patient presented with intractable dysmenorrhea since menarche aged 15, associated with syncope. There was no response to analgesia or hormonal contraception and the impact on quality-of-life necessitated surgical review.
Initial assessment by pelvic ultrasound identified normal ovaries and uterus but a solid appearing right adnexal lesion. Further imaging by MRI showed evidence of a double uterus with only the left sided uterus communicating with the vagina in keeping with an ASRM class II(b) abnormality. Differential diagnosis included Mullerian duct abnormality and accessory and cavitated mass. A uterine didelphys with only a left ostia was seen on hysteroscopy. Laparoscopy showed a uterine didelphys with a non-communicating, engorged right uterus and right fallopian tube. Her case was discussed at a multidisciplinary meeting where it was decided the most suitable treatment was to perform a laparoscopic hemi-hysterectomy with right salpingectomy to remove the right sided non communicating cavity and tube. This procedure was recorded with the patient's consent and will be shown as part of the video presentation.
Interventions: Laparoscopic hemi-hysterectomy for resection of non-communicating uterine horn. EBL minimal. Operative time 37 Mins, hospital stay 1 night.
Measurements and Main Results: A successful laparoscopic intervention was performed, and the patient was discharged day 1 post op. Review at clinic revealed completed resolution of symptoms, normal menses. Future fertility was a primary concern and was successfully conserved. Histology demonstrated a functioning endometrial cavity with focal adenomyosis.
Conclusion: Class II Müllerian abnormalities are uncommon, affecting around 0.06% of females. Symptoms can include pain or menstrual dysfunction as well as fertility/obstetric complications. When necessary, a minimally invasive approach can be utilized to treat these conditions.

8852 Incidence and Risk Factors of Tubal Ruptured Ectopic Pregnancy: An Analysis Based on 10-Year Experience in Our Tertiary Medical Center

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Study Objective: Determine predictors of tubal rupture in women with tubal ectopic pregnancy.
Design: Retrospective cohort study.
Setting: Tertiary university-affiliated hospital.
Patients or Participants: Patients admitted to our center with the diagnosis of tubal ectopic pregnancy between 2006 and 2016.
Interventions: Electronic medical records of all these patients were reviewed and analyzed. Data extraction included demographic, medical history, and laboratory results. The study aimed to assess risk factors and predictors for tubal rupture. Such as past obstetrical and surgical history, demographic characteristics, and serum β-hCG levels.
Measurements and Main Results: A total of 943 women were admitted in the above-mentioned period. Of those, 98 women had a clinical presentation of ruptured tubal pregnancy that was later confirmed by surgery. A comparison was made between the rupture group and 844 women with unruptured tubal pregnancy.
Of 943 tubal pregnancies, 10.3% were ruptured. There was no difference in age, gravidity, admission gestational age, admission mean β-hCG levels, and history of previous ectopic pregnancies. There was a statistically significant difference between ruptured and unruptured groups in parity (1.1 vs. 0.81 respectively, P = 0.009) and live children rate (1.09 vs. 0.76, p=0.002). Tubal rupture occurred in any β-hCG level with the lowest level of 179 mIU/ml. although mean β-hCG levels did not differ between groups, we found that β-hCG level above 5000 mIU/ml was significantly higher in the rupture group. (21% vs. 10%, p=0.01)
No significant difference was found when comparing tubal pregnancy risk factors such as a history of pelvic infection, IVF pregnancy, smoking, use of IUD or emergency contraceptive, past abdominopelvic surgeries, and endometriosis.
Conclusion: As seen in this large-scale study, women's parity, live children rate, and serum β-hCG levels >or=5,000 mIU/ml may help predict which tubal pregnancy will rupture. further investigation is needed to understand how this knowledge can be assimilated into the clinical decision-making process.

8859 Laparoscopic Ovarian-Preserving Management of Primary Ovarian Leiomyoma: Case Report

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Study Objective: To discuss ovarian preserving laparoscopic management of primary ovarian leiomyoma.
Design: Case-report highlighting pre-operative evaluation, imaging, surgical management, and pathologic diagnosis.

Setting: Academic hospital.
Patients or Participants: One patient with adnexal mass who underwent minimally invasive ovarian-preserving management of primary ovarian leiomyoma.
Interventions: Laparoscopic resection of primary ovarian leiomyoma.
Measurements and Main Results: Demonstration of ovarian preserving management of ovarian leiomyoma.
Conclusion: This case report highlights the feasibility of laparoscopic ovarian conserving management of primary ovarian leiomyoma following the appropriate clinical workup and patient counseling, with consideration for the patient's age and desire for future fertility.

8861 Enhancing Laparoscopic Metroplasty Results in Patients with Scar Defects after Caesarean Section

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Study Objective: Enhancing the results of laparoscopic metroplasty (LM) in patients with the c-section scar defects.
Design: Level I, Canadian Task Force. A 4-year randomized prospective study evaluating two methods of LM.
Setting: National Center for Obstetrics, Gynecology, and Perinatology, named after V.I. Kulakov, Moscow, Russia.
Patients: The study includes 83 patients of reproductive age (18 − 45 years) with c-section scar defects/niches, who are interested in pregnancy. The first group − 49 patients: LM. The second group − 34 patients: LM with plication of round ligaments and injection of platelet-riched autoplasma (PRP).
Interventions: Standard for both groups laparoscopic metroplasty included hysteroscopic niche exploration and cervical dilation. Laparoscopic exploration of the scar zone; excision of fibrotic tissue using a monopolar hook; myometrial approximation in two layers. The second group also included 5 ml of PRP injection into the myometrial repair zone and plication of the round ligaments. The ultrasound measurement of the scar was carried out before the operation and 6 months following it.
Measurements and Main Results: The original scar thickness in Group 1 was 2.1 (±0.9) mm, and after surgery − 5.0 (±2.4) mm, $p = 0.00001$; three patients had an unsatisfactory outcome with scar thickness of less than 2.5 mm, which required a repeated operation. In Group 2 the thickness of the scar was originally 2.1 (±0.6) mm before surgery, and 5.6 (±1.3) mm after surgery, $p = 0.00001$, no unsatisfactory results were noted. When comparing the two methods, a significant difference was found in the increase in the newly formed scar thickness in the second group compared to the first − by 3.9 mm and 2.9 mm, respectively, $p = 0.029$.
Conclusion: Tissue tension reduction in the area of a newly formed suture on the uterus as well as use of PRP provides for the most favorable conditions for tissue repair after LM.

8866 Vaginoplasty Using Lyophilized Nile Tilapia Fish Skin in Sex Reassignment Surgery in 35 Transgender Women

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Study Objective: describe the use of LNTFS (Lyophilized Nile Tilapia Fish Skin) as graft for the lining of the neovaginal canal in neovaginoplasty for transgender women.
Design: Transversal study from August 2019 to December 2020.
Setting: N/A.
Patients or Participants: 35 transgender women older than 18 years.
Interventions: First of all, a bilateral orchiectomy followed by ventrally urethra opening, creating a new urethral meatus and a mucosal flap that will be attached to the base of the clitoris. For the vaginal lining, a xenograft tube composed of penile skin plus LNTFS was previously constructed with the aid of a rigid mold.
Measurements and Main Results: Complications: 8 Introits small wound dehiscences, 3 vaginal shrinking, 1 rectal injury, 1 postoperative bleeding. Biopsies were performed 4 to 6 months after the procedure: sections of mucosa lined with non-keratinized stratified squamous epithelium, with dense fibrous connective tissue permeated by vascular neoformation. The depth and width of each neovagina ranged from 16 to 20 cm (average of 18.49 cm) and width ranges of 5 to 6 cm (average 5.8 cm). All the patients reported, after postoperative evaluation, excellent sensitivity outcomes and good aesthetic results, with the satisfactory appearance of the previously desired female genitalia, a good to an excellent self-lubricated vagina, sufficient for sexual intercourse. Indeed, sensitivity was self-reported as excellent and all of the patients had orgasms either with self-masturbations or penetration on an average of 6.14 weeks after postoperative evaluation, excellent sensitivity outcomes and good aesthetic results, with the satisfactory appearance of the previously desired female genitalia, a good to an excellent self-lubricated vagina, sufficient for sexual intercourse. Indeed, Sensitivity was self-reported as excellent and all of the patients had orgasms either with self-masturbations or penetration on an average of 6.14 weeks after surgery.
Conclusion: LNTFS is a biocompatible material that offers a good vaginal depth and also a moist, smooth, and self-lubricated vaginal canal.

8880 Recurrent Endometriosis-Associated Massive Hemorrhagic Ascites: A Case Report and Literature Review

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Study Objective: To discuss the presentation, pathophysiology, and management of large-volume endometriosis-related ascites.
Design: Case report and literature review.
Setting: University-based teaching hospital.
Patients or Participants: A 31-year-old with cyclic pelvic pain presented with new-onset hemorrhagic ascites up to 6L in volume requiring recurrent paracentesis.
Interventions: Initial ultrasound imaging (Figure 1) revealed large volume ascites, normal uterus, and normal ovaries. Computed tomography scan revealed a large amount of ascites with a normal-appearing liver. Paracentesis revealed hemosiderin laden macrophages and no evidence of malignancy or bacterial growth. The patient's medical and hepatologic workup was unremarkable. After undergoing two additional paracentesis procedures, she underwent diagnostic laparoscopy and peritoneal biopsies. Findings included stage 4 endometriosis with posterior cul-de-sac disease, right adnexal and large bowel disease, and diaphragmatic disease (Figure 2).
Measurements and Main Results: The patient was started on high-dose oral progestins postoperatively. Thereafter, she noted symptom

improvement and less frequent paracentesis, but stopped therapy due to side effects. She was started on Elagolix and add-back therapy with no recurrence of ascites over one month of follow-up.

Large-volume endometriosis-associated ascites is rare, usually recurrent, and thought to be due to massive ovarian transudate plus altered lymphatic drainage[1]. Symptoms may mimic those of an ovarian malignancy. Associated CA-125 levels vary and do not correlate with the presence of ascites[2,3]. Additionally, 38% of patients present with pleural effusion[2]. Suppressive therapy with gonadotropin-releasing hormone (GnRH) agonists temporarily prevents ascites recurrence, but medical management regimens and outcomes vary[1,3,4]. Surgical management of endometriosis without bilateral salpingo-oophorectomy (BSO) is associated with a recurrence rate of over 50%, while BSO is curative[1].

Conclusion: Clinicians should consider endometriosis in the workup for patients presenting with pelvic pain and recurrent large-volume hemorrhagic ascites after ruling out ovarian malignancy. Suppressive therapy with high-dose progestins or GnRH agonists/antagonists may improve symptoms and reduce the risk of recurrent ascites, but rigorous studies are lacking.

8881 Outcomes of Single Port Robotic Sacrocolpopexy Compared with Traditional Multi-Port Approaches

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Study Objective: As technology continues to advance, surgeons must evaluate risks and benefits of new instrumentation. The single-port robotic (SPR) system is a new approach which is FDA-approved for urologic procedures but is not yet FDA-approved for gynecology. We believe the single-port robotic approach is beneficial for use in sacrocolpopexy. The goal of our study is to compare surgical outcomes for the SPR approach to multi-port approaches for sacrocolpopexy.

Design: Retrospective chart review, with primary outcome of operative time. Secondary outcomes include number and severity of adverse events.

Setting: Academic tertiary care hospital.

Patients or Participants: Fifty patients who underwent minimally invasive sacrocolpopexy with a single urogynecologist between 2018-2021. Patients were divided into three cohorts: laparoscopic multi-port (LMP), robotic multi-port (RMP), and robotic single port (RSP).

Interventions: LMP, RMP, and RSP sacrocolpopexy with concomitant procedures.

Measurements and Main Results: All patients underwent at least one concomitant procedure. LMP had more concomitant procedures compared to RMP and RSP ($p < 0.001$). RMP had higher incidence of prior hysterectomy ($p < 0.001$) and prior vaginal surgery ($p = 0.002$) compared to LMP and RSP. There were no significant differences in age, BMI, ethnicity/race, pre-operative POPQ stage, number of prior laparoscopies/laparotomies, or prior hernia repair.

Linear and Poisson regression models were used to assess between-group differences in the outcome measures while adjusting for confounders. LMP had significantly higher adverse event severity than RSP (RR = 2.23, $p = 0.044$). 62.5% of the RSP group had no adverse events. No other statistically significant differences were observed. Mean operative time was 3 hours for RSP, 3.3 hours for LMP, and 2.7 hours for RMP ($p>0.05$).

Conclusion: This retrospective study demonstrates feasibility and safety of the SPR approach for sacrocolpopexy when compared with traditional multi-port approaches. Larger studies are indicated to better understand long-term outcomes.

8883 Total Laparoscopic Bladder Resection in the Management of Deep Endometriosis: "Take It or Leave It."

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Study Objective: To highlight laparoscopic surgical anatomy for bladder resection in deep endometriosis (DE).

Design: Video article.

Setting: Laparoscopic 4K OR in IRCCS Sacro Cuore Don Calabria Hospital, Trendelenburg position under general anesthesia.

Patients or Participants: 35 years old woman complaining chronic pelvic pain and urinary specific symptoms, looking for pregnancy for 4 years.

Interventions: Opening and development of paravescical spaces, Bogros and Retzius spaces, bladder nodule isolation and resection of the whole-thickness portion of the nodule. En-bloc posterior eradication of DE after opening and development of para-rectal space and recto-vaginal space.

Measurements and Main Results: Duration of the surgical procedure was 180 minutes, blood loss 50cc, inpatient stay 12 days, Foley catheter was removed after 7 days (cystography was performed to assess bladder closure).

Conclusion: Laparoscopic bladder resection might be less invasive and precise if anatomical spaces are properly prepared and the resection is limited to the infiltrating portion of the nodule.

8884 Assessment of Patient-Initiated Communications Following Benign Hysterectomy

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Study Objective: Postoperative care is an essential component of patient outcome and satisfaction. Patients after hysterectomy often contact their physicians for various concerns, but the specific reasons are not known. The purpose of this study was to evaluate the reasons and factors associated with patient-initiated communications 30 days after hysterectomy for benign conditions.

Design: A retrospective chart review.

Setting: Tertiary academic medical center.

Patients or Participants: Patients aged 18 years and older who underwent hysterectomy for benign conditions from January 2014 to December 2018.

Interventions: N/A.

Measurements and Main Results: Of the 325 patients who underwent hysterectomy for benign conditions, 161(49.5%) initiated 299

communication events. The most common reasons for patient phone calls and messages were concerns related to pain (33.5%), surgical incisions (19.3%), activity restrictions (13.0%), and urinary symptoms (13.0%). Multivariate logistic regression analysis revealed that patients with a history of mood disorder (OR 2.12, CI 1.19-3.79, p=0.01) and cesarean section (OR 2.064, CI 1.21-3.53, p<0.01) were more likely to contact the office, while Hispanic patients (OR 0.29, CI 0.13-0.62) were less likely to initiate communication. The route of hysterectomy was not associated with any differences in patient contacts. Using same-day discharge as the reference group, patients discharged on postoperative day 1 (OR 0.48, CI 0.28-0.83, p<0.01) and postoperative day 2 or later (OR 2.51, CI 1.07-5.89, p=0.04) were respectively associated with a decreased and increased likelihood of postoperative contacts.

Conclusion: About 1 in 2 patients contacted their physician within 30 days after benign hysterectomy. The most common concern was related to pain, followed by surgical incisions. By evaluating factors associated with patient communications after surgery, the healthcare team can better target patient needs and perioperative education to improve postoperative expectations, care, and satisfaction.

8886 Endometrial Wound Healing Duration after Hysteroscopic Treatment of Type 2 and 3 Myomas

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Study Objective: To assess the mean resolution time of the fovea after hysteroscopic treatment of type 2 and type 3 myoma.
Design: Prospective observational study.
Setting: University of Naples Federico II, Naples, Italy.
Patients or Participants: Women aged 30-50 years, with at least one type 2 or type 3 myoma, history of infertility or uterine bleeding who underwent hysteroscopic myomectomy.
Interventions: All patients underwent hysteroscopic myomectomy, using a 15 Fr or 26 Fr resectoscope, either outpatient or in the operating room. All surgical procedures were performed by one expert hysteroscopist. Cold loop myomectomy applied to bipolar resectoscope was used for the removal of the intramural component of the myomas. All women underwent repeated follow-up office hysteroscopies every week after the surgical procedure for the first month and then every two weeks for the following months
Measurements and Main Results: Thirty-one patients with type 2 or 3 myoma with infertility (26/31) or uterine bleeding (15/31) were enrolled. The resectoscopic myomectomy was successful in all cases, without any significant complications. Overall, the mean diameter of resected myomas was 23 mm. The fovea was almost completely restored between three to six weeks after surgery in case of myomas < 2 cm and on average within 56 days for myomas of any size. The resolution was faster in women < 40 years old. No correlation was observed between the resolution time of the fovea and the different localization of the myomas
Conclusion: These preliminary data showed short time to resolution of the fovea in case of type 2 and 3 myomas hysteroscopically treated. The respect of the myometrium and the reduced thermal injury obtained thanks to the cold loop technique applied to bipolar resectoscope, may have influenced the resolution time of the fovea

8887 Hysteroscopic Intramyometrial Injection of Botulinum Toxin As Treatment for Chronic Pelvic PAIN of Uterine Origin

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Study Objective: to demonstrate the surgical technique of the intramyometrial application of botulinum toxin Hysteroscopic approach for the management of pelvic pain of uterine origin.
Design: A step-by-step description was made for the application of intramyometrial botulinum toxin via hysteroscopic.
Setting: Advanced gynecology laparoscopic and pelvic pain unit.
Patients or Participants: Patients with painful uterine syndrome who follows the diagnostic criteria: the presence of localized pain in the pelvis, colic or sensation of uterine contraction outside the cycle, dysmenorrhea, dyspareunia, physical examination findings of pain on uterine palpation as a uterine trigger.
Interventions: hysteroscopic Intramyometrial application of Botulinum Toxin for treatment of chronic pelvic pain of uterine origin.
Measurements and Main Results: Intramyometrial application of botulinum toxin under hysteroscopic guidance with general anesthesia, use of Bettochi's hysteroscope and surgical steel needle for cystoscopy (5 Fr, 30 cm) through the working channel, use of saline solution as a means of distention, vaginoscopy, entry into the endocervical canal and endometrial cavity, evaluation of the cavity, location of the ostium, injection of botulinum toxin type A dilution (200 IU in 20 cc SSN) application of 1 cc per point distributed on the anterior and posterior face of the uterine wall.
Conclusion: Hysteroscopic intramyometrial application of Botulinum toxin can be a treatment option in patients with chronic pelvic pain of uterine origin when conventional treatment fails. It is an easily reproducible procedure, with few side effects and effective in pain control in selected patients.

8890 Robotic Hysterectomies with Mini-Laparotomies for Enlarged Uteri

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Study Objective: Robotic surgical system assistance in hysterectomies has gained significant popularity amongst gynecologists for its ease of employment, improved visualization and minimally invasive approach in attempts to decrease intra-/post-operative complications and improve clinical outcomes. Assessment of clinical outcomes, specifically length of hospitalization and postoperative complication rates, of patients undergoing robotic hysterectomy with the addition of mini-laparotomy and in bag manual morcellation for extraction of enlarged uteri specimen was analyzed.
Design: Retrospective case series analysis of patients who received the treatment in question pooled from a private practice Obstetrics and Gynecology group.
Setting: N/A.
Patients or Participants: Surgical database of this private practice was reviewed and analyzed between 2015 and 2021 for patients undergoing this procedure for benign indications with enlarged uteri (namely uterine fibroids) yielding 52 eligible participants.
Interventions: After completion of a robotic-assisted laparoscopic hysterectomy of an enlarged uterus using the standard technique, the resulting specimen which could not easily be delivered vaginally, was placed into a

surgical bag, brought through a mini-laparotomy (≤5cm) and manually morcellated to facilitate specimen extraction.
Measurements and Main Results: A total of 52 patients were included in the retrospective analysis revealing a 90.4% (47/52) same day discharges with 5 post-operative admissions; one for uncontrolled blood glucose and four for post-operative pain. The minimum uterine size requiring mini-laparotomy for extraction was found to be 12cm with at least a 366g weight. The average uterine size and weight requiring said intervention were found to be 18cm and 853g, respectively. Complications were also found to be rare with seven total reports of post-operative fever of which 5 pelvic collections were found and three microbiologically confirmed as pelvic abscesses necessitating drainage and parenteral antibiotics.
Conclusion: Mini-laparotomy within bag manual morcellation for enlarged uteri is a beneficial adjunct technique to robotic-assisted laparoscopic hysterectomies allowing the preservation of the benefits of minimally invasive surgery while also maintaining low complication rates.

8891 Visiting the Posterior Leaf: 5 Steps to Set You up for a Successful Hysterectomy

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Study Objective: The objective of this video is to provide surgical tips for easy and safe dissection of the posterior leaf that can be used routinely during both simple and complex cases.
Design: Video case presentation.
Setting: The surgeries in this video were performed in the operating room at an academic medical center. The patient was positioned in dorsal lithotomy position. Laparoscopic hysterectomy was completed using a 5mm umbilical port, a 5mm left lower quadrant port, 5mm right lower quadrant port, and a 5mm suprapubic port.
Patients or Participants: This video is made from a compilation of 4 laparoscopic hysterectomies.
Interventions: Total laparoscopic hysterectomy.
Measurements and Main Results: Potential complications of laparoscopic hysterectomy include bleeding, ureteral injury, and conversion to laparotomy. This technique creates pedicles for easier ligation and hemostasis and allows for visualization of the lateralized ureter. The steps are as follows: 1. Open the anterior leaf to create the bladder flap 2. Identify the posterior leaf of the broad ligament 3. Make a window in the posterior leaf 4. Extend the window to lateralize the ureter 5. Isolate the utero-ovarian and uterine pedicles. Various methods were used to successfully create a window in the posterior leaf. These steps are reproducible for both simple and complex cases.
Conclusion: Laparoscopic hysterectomy can be safely performed with minimal blood loss using the techniques described in this video.

8895 Fundamentals of Laparoscopic Surgery for Senior Medical Students Entering Surgical Residency

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Study Objective: The Fundamentals of Laparoscopic Surgery (FLS) is mandatory for OBSTETRICS AND GYNECOLOGY residency. We aimed to evaluate the usefulness of FLS for fourth year medical students to gain confidence and to determine quantitative improvement in FLS tasks and exam.
Design: On the first and last day of the course, students completed a Likert scale (1-10) self-assessment rating confidence in knowledge of laparoscopy, confidence in technical laparoscopic skills, and satisfaction with laparoscopic training during medical school. Students also completed the FLS written assessment. For two weeks, students had didactics and practiced the five practical tasks on FLS trainers: peg transfer, circle cutting, endoloop, extracorporeal and intracorporeal knot tying. Pre and post practice times were recorded. Students were evaluated by OBSTETRICS AND GYNECOLOGY faculty mentors with a pre and post validated global assessment tool per FLS task.
Setting: Fourth year medical school elective in an academic setting.
Patients or Participants: Sixteen fourth year medical students enrolled in the two-week FLS elective course over two years (2021-2022).
Interventions: Participants received daily didactic lessons taught by OBSTETRICS AND GYNECOLOGY faculty, as well as guided practice sessions utilizing laparoscopic task trainers. All interventions were measured pre and post didactic sessions.
Measurements and Main Results: Overall, students felt more confident in their combined laparoscopic knowledge, skills, and training assessment following the course (2.3 (1.7) vs. 6.1 (2.0), $p<0.001$). Students showed improvement on the written exam (.62 (.10) vs. .87 (.06), $p<0.001$). The mean time to complete all five of the FLS tasks decreased (seconds, 247 (135) vs. 143 (102), $p<0.001$). Finally, the average combined faculty global rating assessment of the students' performance improved (2.3 (0.4) vs. 3.9 (0.3), $p<0.001$). Feedback from students was universally positive.
Conclusion: Implementing the FLS curriculum for fourth year medical students increases confidence in laparoscopic knowledge and performance of technical skills prior to entering a surgical residency.

8896 Surgical Management of Leiomyoma: A Changing Landscape

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Study Objective: To examine trends in surgical management of patients with uterine leiomyoma and explore disparities in surgical approach in a modern cohort.
Design: Retrospective cohort study of data abstracted from American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database.
Setting: NSQIP-participating hospitals across the United States.
Patients or Participants: 52,909 women who underwent hysterectomy and 15,485 who underwent myomectomy between 2015 and 2019. Patients were excluded if they had a gynecologic malignancy, emergent surgery, or both hysterectomy and myomectomy in the study timeframe. Cases were identified by Current Procedural Terminology code.
Interventions: Hysterectomy or myomectomy for leiomyoma performed by any abdominal or minimally invasive approach, including laparoscopic, vaginal, or robotic assisted.
Measurements and Main Results: Regression and Cochran-Armitage Trend Test were conducted. The overall number of surgeries for leiomyoma (hysterectomy and myomectomy) rose from 10,896 in 2015 to 15,716 in 2019 (44.24% increase). The number of hysterectomies increased from 8,624 in 2015 to 11,846 in 2019 (37.36%), while myomectomies increased from 2,272 in 2015 to 3,870 in 2019 (70.33%). The proportion of patients who underwent myomectomy significantly increased (20.85% to 24.62%, p-value <0.0001), whereas hysterectomy significantly decreased (79.15% to 75.38%, p-value <0.0001). The number of non-Hispanic Black women receiving myomectomy rose from 913 in 2015 to 1,540 in 2019 (68.67%). The number of Asian women receiving myomectomy rose from 191 in 2015 to 372 in 2019 (94.76%).

Conclusion: Increasing rate of surgical treatment for leiomyoma was seen over the study period. A shift towards myomectomy comprising a greater proportion of surgeries performed was identified. The greatest increase in number of myomectomy performance was for Non-Hispanic Black and Asian women. These trends may represent improved access to surgical treatment of leiomyoma, resulting from the growth of Minimally Invasive Gynecologic Surgery as a sub-specialty. Additionally, these findings may suggest a positive response to notable advocacy for equitable healthcare for all patients.

8901 Strategies for a Successful Minilaparotomy Myomectomy

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Study Objective: To provide a unique video highlighting techniques to promote a successful minilaparotomy myomectomy of large uterine fibroids.
Design: Video presentation.
Setting: Academic tertiary care hospital.
Patients or Participants: A nulliparous 37-year-old presented for fertility sparing surgical management of symptomatic uterine fibroids via a minilaparotomy incision. Pre-operative planning included a pelvic MRI notable for two large FIGO 7 fibroids, one of which was an 11 cm pedunculated myoma that was noted to have torsed along with the fallopian tube.
Interventions: This video highlights techniques of mitigating blood loss including the pre-operative tranexamic acid and rectal misoprostol. Moreover, a handheld vessel sealer was specifically chosen for this procedure to ensure efficiency of dissection and hemostasis. Unique to our video is the use of a tourniquet to mitigate bleeding from a large myoma stalk. Additionally, a cell-saver was utilized to minimize the risk of a blood transfusion.
In order to promote visualization and uterine mobility, a self-containing circumferential retractor was utilized, and the patient was placed in dorsal lithotomy with a uterine manipulator. Highlighted in this video is the importance of the core/wedge technique, which facilitated the decompression and evacuation of 689g of fibroids from a 6 cm minilaparotomy incision.
Measurements and Main Results: Our hemostatic efforts were successful in minimizing blood loss, which was estimated to be 350cc, below the threshold for cell saver autologous transfusion. The entire procedure was successfully performed with a minilaparotomy incision, and the patient met criteria for same day discharge.
Conclusion: Strategies for a successful myomectomy include the use of pre-procedure tranexamic acid and misoprostol, cell saver for possible autologous transfusion, a self-containing retractor, handheld vessel sealer/tourniquet, and efficiency with the core/wedge morcellation technique.

8913 Intestinal Disc Excision for Deep Infiltrative Endometriosis

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Study Objective: Describe the surgical technique used in a center for patients with intestinal endometriosis who are candidates for disc excision as a conservative treatment, highlighting anatomical and technical aspects of the intervention, in a schematic approach with easy reproducibility.
Design: Video presentation review of surgical technique.
Setting: Under general anesthesia in the Trendelenburg position, the patient undergoes surgery with a routinely specified entrance to the abdominal cavity by using pneumoperitoneum for the consequent inspection of the pelvic abdominal cavity and its resulting intervention.
Patients or Participants: Women with intestinal wall endometriotic lesions smaller than 3 cm, involvement of less than 40% of its circumference and extension to the muscularis propria affecting up to 7 mm in depth.
Interventions: Adequate exposure of the cavity via adhesiolysis, bowel mobilization and bilateral ovarian suspension with suture. Careful dissection of the avascular spaces of the pelvis through healthy tissue is made until adequate identification of ureters, rectum and rectovaginal septum. Delimitation of the lesions from lateral to medial, attempting preservation of the intestinal serosa and the posterior vaginal wall on a conservative management basis. After the passage of the transanal endostapler, the lesion is invaginated inside the gap delimited by the instrument anvil and cartridge, with subsequent closure and incorporation of the lesion inside the stapler for its activation, consequent cut and anastomosis over the anterior intestinal wall. Extraction of the excised tissue through a 10 mm port or through the vaginal cuff, depending on the case.
Measurements and Main Results: N/A.
Conclusion: Discoid intestinal resection can be adopted in selected cases with better functional outcomes for the intestine, less risk of complications in the immediate postoperative period (especially in low colorectal lesions) and equal symptom control than intestinal resection. The dissection of the spaces and the adequate intestinal segment preparation before resection are essential for the adequate application of the endo stapler on the tissue.

8915 Outcomes and Complications for Concurrent Hernia Repair Among Women Undergoing Hysterectomy

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Study Objective: Primary hernia repair adds complexity to a planned hysterectomy and may worsen operative outcomes. The aim of this study was to determine if concurrent hernia repair (hysterectomy+hernia) is associated with an increased complication rate compared to hysterectomy alone.
Design: Retrospective cohort study
Setting: Patients who underwent hysterectomy with or without hernia repair were queried using the American College of Surgeons National Surgical Quality Improvement Program participant use file (2005-2019).
Patients or Participants: 369,010 patients underwent hysterectomy, and 5,071 patients had hysterectomy+hernia. Propensity score matching was performed 1:1 resulting in 5,071 patients in each group.
Interventions: hysterectomy, hysterectomy+hernia.
Measurements and Main Results: Hysterectomy+hernia had a longer operating time (OT) by 46.1 minutes (95% Confidence Interval [CI] = 42.6, 49.6; $p < 0.001$) and longer length of stay (LOS) by 0.71 days (95% CI = 0.59, 0.84; $p < 0.001$). Hysterectomy+hernia was associated with 22% higher risk (95% CI = 1.11, 1.34; $p < 0.001$) of a major complication and 34% higher risk (95% CI = 1.16, 1.56; $p < 0.001$) of a minor complication. In subgroup analyses, there was no significant effect on major complications for subjects with a body mass index (BMI) <40 kg/m^2, age <40 or >60 years, tobacco use, diabetes, or a minimally invasive approach. Among patients with a malignant indication for hysterectomy, hysterectomy+hernia was associated with a longer OT by 32.0 minutes (95% CI = 25.2, 38.8; p <0.001) and 0.35 days longer LOS (95% CI = 0.04, 0.67; $p = 0.027$) but no significant difference in major and minor complications.

Conclusion: Hysterectomy+hernia is associated with increased OT, LOS, and risk of major and minor complications compared to hysterectomy without hernia repair. Based on subgroup analyses, concurrent hernia repair may be considered in select patients, such as those with BMI <40 kg/m^2 and those proceeding with a minimally invasive hysterectomy.

8918 Relationship between Brainwave Biomarker and Endometriosis Pain Symptoms before and after Laparoscopic Surgery

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Study Objective: The purpose of this study was to explore the relationship between peak alpha frequency (PAF), an electroencephalogram (EEG)-based biomarker for pain sensitivity, and pain symptoms for patients undergoing laparoscopic surgery for endometriosis.
Design: Prospective observational pilot study.
Setting: Large academic hospital.
Patients or Participants: Patients (n=18) undergoing laparoscopic endometriosis excision surgery were invited to participate. Participants enrolled before surgery and were followed up to 6 weeks postoperatively.
Interventions: N/A.
Measurements and Main Results: Participants completed a physical exam, quantitative EEG, and symptom questionnaires before and after surgery (2-weeks and/or 6-weeks post-op). We hypothesized that PAF would increase after surgery indicating an improvement in pain symptoms. To measure PAF, EEG data was collected using a BrainBit dry electrode headset. Patient-reported outcome measures for pain and endometriosis symptoms were collected using Modified Brief Pain Inventory (BPI), Short-form McGill Pain Questionnaire 2, Endometriosis Health Profile 30, and Patient Health Questionnaire 9. Descriptive statistics and Spearman correlation coefficients were calculated for each measure before and after surgery.
Overall, we observed an increase in PAF following surgery, where median values shifted from 9.88 Hz preoperatively (IQR 9.84 - 9.99 Hz) to 10.01 Hz postoperatively (IQR 9.84 - 10.06 Hz). Preliminary results suggest that preoperative PAF is moderately inversely correlated with average preoperative pain reported using BPI (rho = -0.52) but is not strongly correlated with other measures.
Conclusion: While the reported results are underpowered to determine statistical significance, PAF was found to increase six weeks after endometriosis surgery. Furthermore, preoperative PAF appears to be inversely correlated with preoperative pain symptoms, suggesting that PAF is a useful measure for tracking pain in patients with endometriosis. Additional investigation and follow-up is needed to determine how PAF relates to long-term surgical outcomes for patients with chronic pelvic pain.

8934 Laparoscopic Isthmocele Repair

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Study Objective: The treatment of symptomatic isthmoceles can be medical (with oral contraceptives) in small defects (residual myometrium greater than 3 mm), and by minimal invasion in large defects or those small that did not respond to medical treatment.
In defects with residual myometrium > 3 mm, the correction is done by hysteroscopy. The fibrotic tissue of the defect is removed, the edges of the niche are resected, achieving continuity of the uterine wall with the cervical canal, and the base is fulgurated to remove inflamed tissue.
In defects with residual myometrium <3 mm, laparoscopic treatment is recommended. The edges are resected to remove scar tissue, and the defect is closed with two-layer sutures.
The combination of hysteroscopy-laparoscopy allows transillumination of the defect by hysteroscopy and laparoscopic correction, which also allows the treatment of other causes of pain and infertility, as well as mobilization of the bladder and revision of tubal patency.
Surgery improves HUA, chronic pelvic pain, and infertility in 71.4%, 83.3%, and 83.3%, respectively, based on a case series.
Hysterectomy is reserved for patients who do not wish to be fertile or who have persistent symptoms after conservative treatment.
Design: Video of hysteroscopy-guided laparoscopic isthmocele correction surgery. Informed consent of the patient. Literature review.
Setting: Proceeding in a pre-scheduled manner, under general anesthesia in the Trendelenburg position, with access to the abdominal cavity under a routinely specified pneumoperitoneum for the consequent inspection of the pelvic abdominal cavity
Patients or Participants: Patients with defects with residual myometrium <3 mm.
Interventions: Laparoscopic correction of isthmocele.
Measurements and Main Results: N/A.
Conclusion: Patients with large isthmoceles with <3mm residual myometrium benefit from hysteroscopy-assisted laparoscopic isthmoplasty.

8942 Development of a Novel Physical Exam for Patients Undergoing Laparoscopic Excision of Endometriosis

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Study Objective: To create and validate a standardized physical exam for patients undergoing laparoscopic excision of endometriosis surgery.
Design: Prospective observational feasibility study.
Setting: Large academic hospital.
Patients or Participants: Patients (n = 17) undergoing operative laparoscopy for management of endometriosis were consented and enrolled before surgery and followed up to 6 weeks postoperatively. This is an ongoing study with plan to enroll 30 participants.
Interventions: N/A.
Measurements and Main Results: We developed a physical exam that included numerical pain ratings from regions typically affected by endometriosis.
The complete exam was conducted at the preoperative visit and a modified version was performed at 2-week and 6-week postoperative visits for patient comfort. Composite pain scores were calculated from the modified physical exam to quantify physical symptom severity. These scores were compared to a validated patient-reported outcome measure for pain, Brief Pain Inventory (BPI). The composite physical exam pain scores improved progressively following surgery, decreasing from a median of 22.5 (IQR 14-34.29) preoperatively to 11.5 (IQR 5.26-16) at 6-weeks postoperative (p=0.072 using Wilcoxon signed-rank test). This was consistent with a decrease in average pain reported using BPI (p= 0.063). Spearman correlation coefficients showed a moderate correlation between preoperative physical exam scores and BPI (rho = 0.5419).
Conclusion: Currently, there is no consensus physical exam to describe symptom severity for patients with chronic pelvic pain. We report a novel

standard physical exam to describe endometriosis symptom severity. Even though our results were not statistically significant, we observed a reduction in physical exam pain scores reported before and after surgery, which correlated with pain scores collected using a validated pain questionnaire. This proposed exam could be used to objectively follow up success of endometriosis excision. Our study is currently underpowered and anticipate achieving statistical significance after completing recruitment.

8944 Outcomes Among Patients Undergoing Gender-Affirming Hysterectomy from 2010-2020: A NSQIP Analysis

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Study Objective: We utilized the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database, to study reoperation rates after benign hysterectomy in transgender and gender non-conforming (TGNC) patients.
Design: Demographic data and surgical outcomes between 2010-2020 were abstracted from the ACS NSQIP database.
Setting: ACS NSQIP Database.
Patients or Participants: Current Procedural Terminology (CPT) codes were used to identify patients who underwent hysterectomy for non-oncologic indications. ICD-9/10 codes were used to identify patients with gender dysphoria. 445,997 hysterectomies were performed between 2010-2020, of which 2,011 (0.45%) were for TGNC patients.
Interventions: Associations between gender dysphoria and unplanned reoperation were examined using propensity score-adjusted logistic regression. Propensity scores were calculated using the variables of: Age, race, BMI, ethnicity, hypertension requiring medication, and diabetes.
Measurements and Main Results: The percent of hysterectomies for TGNC patients increased between 2010-2020 (21 (1.0%) to 379 (18.6%), $p < 0.01$). TGNC Patients were younger (mean age 35.6 vs. 49.5), less likely to use anti-hypertensive medications (12.7 % vs. 29.7%), and less likely to have diabetes (4.4% vs. 9.7%), compared to non-TGNC patients, $p < 0.001$. Body mass index was similar between groups (28.3 IQR [24.2, 33.4] vs. 29.9 IQR [25.5, 35.7]). The risk of reoperation in this cohort was low overall (6,600 (1.5%)), and similar between groups (6,568 (1.5%) vs. 32 (1.6%), $p = 0.747$). A propensity-score adjusted linear regression demonstrated no increased risk of reoperation for cisgender compared to gender diverse patients (aOR 1.01 95%CI [0.99-1.01]).
Conclusion: Benign hysterectomy carries a low overall risk of reoperation. There was no difference in reoperation among TGNC patients, even when controlling for differences in health status. Hysterectomy continues to be a safe, medically necessary procedure for TGNC patients.

8954 Abdominal Wall Nerve Blocks

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Study Objective: To demonstrate the nerve block techniques for the ilioinguinal, iliohypogastric, lateral femoral cutaneous, and the genital branch of the genitofemoral nerves.
Design: Procedural video.
Setting: Operating room at an academic medical center.
Patients or Participants: Patients with chronic abdominal pain.
Interventions: This video demonstrates how to perform nerve blocks to the ilioinguinal, iliohypogastric, lateral femoral cutaneous, and genital branch of the genitofemoral nerves. It also highlights the techniques of these nerve blocks and includes general management and follow-up principles for these patients.
Measurements and Main Results: Patients' individual responses to nerve blocks are assessed on a pain scale of 0-10. They are measured prior to and after nerve blocks to gauge response.
Conclusion: Determining the source of chronic abdominal and pelvic pain can be difficult for gynecologists. Nerve blocks can be an effective strategy to help evaluate and possibly treat abdominal wall pain. These blocks can delineate whether pain is originating from the abdominal wall or from another source. Nerve blocks can also potentially be therapeutic in instances of nerve entrapment, muscle spasms, neuralgia, or myofascial pain. These instructional videos on administering abdominal nerve blocks can help gynecologists provide another potential source of therapy for their patients.

8969 Excision of Primary Umbilical Endometriosis Under Local Anesthesia

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Study Objective: To excise primary umbilical endometriosis using local anesthesia, thereby reducing demand for operating room resources during the COVID-19 pandemic.
Design: Case study of two cases of primary umbilical endometriosis, excised under local anesthesia.
Setting: Outpatient clinic with procedure room.
Patients or Participants: Two patients referred to gynecology for isolated umbilical endometriosis.
Interventions: Excision of primary umbilical endometriosis in the outpatient clinic under local anesthesia.
Measurements and Main Results: Patients were assessed for adequate excision immediately at the end of the procedure and one was re-assessed at two months post-procedure.
Conclusion: Excision of primary umbilical endometriosis can be adequately performed in the out-patient setting under local anesthesia, further reducing demand for operative time during the COVID-19 pandemic.

8972 Laparoscopic Rudimentary Horn Removal

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Study Objective: To demonstrate key steps to laparoscopic resection of a rudimentary horn.
Design: A case report.
Setting: A tertiary care teaching hospital.
Patients or Participants: The case is based on a 14-year-old, gravida zero, with a non-communicating rudimentary horn and unicornuate uterus.
Interventions: The video demonstrates pre-operative imaging, highlights key anatomy, and teaches techniques to laparoscopic resection of the horn with oversewing of the defect.
Measurements and Main Results: Safe and efficient laparoscopic non-communicating uterine horn removal.
Conclusion: Laparoscopic uterine horn removal can be a safe and efficient outpatient procedure.

8974 Laparoscopic Loop and Stitch Technique in Tubal Stump Ectopic Pregnancy

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Study Objective: To describe a new technique of loop and stitch technique in tubal stump ectopic pregnancy
Design: Description of technique with narrated video clip
Setting: Academic tertiary hospital
Patients or Participants: 33-year-old female with tubal factor infertility was diagnosed with tubal stump ectopic pregnancy at 5+3 weeks period of gestation. She had history of right tubal ectopic conceived through IVF in the past. Serum beta HCG showed an inadequate rise of 21%. Diagnosis was facilitated by 2D and 4D ultrasound findings.
Interventions: Laparoscopy confirmed our diagnosis of ectopic in right tubal stump. Diluted Vasopressin was injected at the base of stump. Circumferential stitches were taken all around the base of the stump using barbed vicryl suture. Ectopic mass was completely removed with the tubal remnant using harmonic scalpel. Serosal breach was repaired with same suture. Contralateral salpingectomy was also done.
Measurements and Main Results: Laparoscopic loop and stitch technique is minimally invasive thus avoiding cornual wedge resection and blood loss. Uterine myometrium was saved from damage thus preventing future major obstetric catastrophe like uterine rupture and morbidly adherent placenta.
Conclusion: Diagnosis of stump ectopic requires high degree of suspicion with history, examination and ultrasound findings. This new minimally invasive technique of loop and stitch which when offered timely enhances women's future fertility and reproductive outcomes.

8977 The Use and (Potential) Misuse of the AAGL Endometriosis Classification System

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Study Objective: To demonstrate use and (potential) misuse of the AAGL 2021 Endometriosis Classification Scoring System, an anatomy-based surgical complexity scoring system - with the goal of optimizing future endometriosis staging.
Design: A case report applying the new AAGL 2021 Endometriosis Classification and use of the App.
Setting: A university hospital based in Detroit, Michigan; Wayne State University/ Detroit Medical Center.
Patients or Participants: A case report of a Stage 2 Endometriosis based on the Scoring System with a patient presenting for infertility.
Interventions: Application and utilization of the AAGL 2021 Endometriosis Classification for a Stage 2 Endometriosis Classification.
Measurements and Main Results: Scoring system demonstrated feasibility, applied utility to the correlation that was discussed regarding the Scoring System, but also limitations and potential misuses of the scoring system.
Conclusion: The AAGL Endometriosis Scoring System is a feasible intraoperative scoring system correlated with pain. It is critical to be cognizant of staging parameters while scoring the endometriotic lesions and remaining consistent.

8979 Laparoscopic Lysis of Adhesions: Adhesiolysis, Enterolysis, and Salpingo-Ovariolysis in a Patient with Infertility

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Study Objective: To show the surgical steps used to perform adhesiolysis, enterolysis, and salpingo-ovariolys in a patient with a complex surgical history and a desire for pregnancy, planning to undergo in vitro fertilization treatment.
Design: Step-by-step video demonstration of the technique.
Setting: A university tertiary care hospital.
Patients or Participants: A 36-year-old gravida 2 para 0 with an extensive surgical history – including a cholecystectomy with subsequent exploratory laparotomy on post operative day 2 secondary to hematoma formation, and infertility.
Interventions: Studies have shown that salpingectomy for hydrosalpinx prior to undergoing in vitro fertilization treatment can improve pregnancy rates. In patients with a prior history of abdominal surgery or other inflammatory event, adhesion formation can obstruct access to the pelvis and distort pelvic anatomy, adding increased complexity to the intended procedure. A diagnostic laparoscopy with adhesiolysis, enterolysis, and salpingo-ovariolysis is performed prior assessing the integrity of the fallopian tubes and ultimately performing bilateral salpingectomy with the aim to improve in vitro fertilization success rates.
Measurements and Main Results: We discuss three important issues related to lysis of adhesion. First, preoperative and intraoperative considerations regarding abdominal entry and trocar placement. Second, guidelines for lysing specific types of adhesions are discussed, including technique and use of ultrasonic energy. Finally, management of sequela of adhesion lysis such as bowel injury, fallopian tube damage, and obtaining hemostasis are discussed. At postoperative follow up, the patient had healed well and was referred back to reproductive endocrinology to start in vitro fertilization treatments.
Conclusion: It can be difficult to know preoperatively the extent of adhesive disease in a patient with prior abdominal surgery. Preoperative review of imaging, history, and prior operative reports can help in planning entry. Visualization and skilled intra-operative surgical technique are necessary to perform safe adhesiolysis, enterolysis, and salpingo-ovariolysis.

8983 Pararectal Schwannoma Causing Pelvic Pain

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Study Objective: To describe a surgical management of a very rare case of rectal schwannoma as cause of chronic pelvic pain and postoperative outcome.
Design: Video Presentation.
Setting: University tertiary care hospital.
Patients or Participants: 41-yo G0P0000 presents for evaluation of chronic pelvic pain for many months. Past medical history: Migraines, Anxiety disorder. Past Surgical History: Laparoscopic Hysterectomy and bilateral salpingectomy followed by right oophorectomy few months later. Physical exam: the cervix and uterus noted to be absent, no other abnormalities were found.
Interventions: Rectal Schwannoma is extremely rare and only 12 cases have been reported, our patient had already underwent total laparoscopic hysterectomy, bilateral salpingectomy and right oophorectomy for pelvic pain without relief, MRI was done and showed para rectal mass, laparoscopic resection of the mass was done.
Measurements and Main Results: At the 2-week postoperative follow up, the patient reported resolution of her painful symptoms.
Conclusion: Chronic pelvic pain is often a challenge to diagnose and to manage given the large number of etiologies, rectal schwannoma is extremely rare but can be the etiology behind pelvic pain, MRI helps with diagnosis and laparoscopic resection is possible with complete pain relief

8986 vNOTES Usls

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Study Objective: The vNOTES approach offers better visualization, and thus better access to the deep pelvic structures in performance of high uterosacral ligament suspension.
Design: This video demonstrates a hybrid of traditional vaginal and laparoscopic technique through the natural vaginal orifice to perform reduction of pelvic organ prolapse.
Setting: Community Hospital.
Patients or Participants: 57-yo G1P1 with Stage 3 uterine prolapse and cystocele.
Interventions: transvaginal natural orifice transluminal endoscopic surgical (vNOTES) hysterectomy and high uterosacral ligament suspension.
Measurements and Main Results: Successful reduction of stage 3 uterine prolapse and cystocele to stage 0 following a high uterosacral ligament suspension through a vNOTES approach.
Conclusion: vNOTES offers an improved approach to high uterosacral ligament suspension over traditional vaginal and laparoscopic approaches by offering better visualization and access to the deep pelvic structures.

8988 Laparoscopic Combined Paravaginal Repair, Burch Colposuspension, and Sacral Colpopexy

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Study Objective: The objective of this video is to demonstrate an overview of indications, procedural steps, and high-yield anatomy for laparoscopic paravaginal defect repair, Burch colposuspension, and sacral colpopexy.
Design: Surgical video.
Setting: The setting is a community teaching hospital.
Patients or Participants: 54yo G1P1 with grade 3 cystocele, grade 2 rectocele, and uterine prolapse identified on physical exam in the outpatient setting after initially presenting with complaints of pelvic discomfort, vaginal pressure, and sensation of urinary retention. She failed conservative management with pessary and desired definitive management.
Interventions: Total laparoscopic hysterectomy was first performed in routine fashion. Then, laparoscopic paravaginal defect repair, Burch colposuspension, and sacral colpopexy were together performed for correction of pelvic organ prolapse. Burch colposuspension was performed prophylactically to treat potential postoperative stress urinary incontinence. The patient had a stable postoperative course.
Measurements and Main Results: QBL was 50mL.
Conclusion: The risk of requiring surgery for pelvic organ prolapse increases with age. A laparoscopic approach to pelvic organ prolapse correction offers advantages to both the patient and surgeon. Burch colposuspension is an effective additional procedure during pelvic organ prolapse surgery for prophylactic treatment of potential postoperative stress urinary incontinence.

8995 Laparoscopic Hernia Repair in a Patient with Mayer-Rokitansky-Kuster-Hauser Syndrome, Turner Mosaic Syndrome and Tubo-Ovarian Hernia

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Study Objective: To report a rare case of Mullerian agenesis and Turner mosaic syndrome with tubo-ovarian inguinal hernia
Design: Case report.
Setting: Department of Obstetrics & Gynecology of a tertiary care referral center.
Patients or Participants: A 17-year-old girl presented with complaints of primary amenorrhea, phenotypical features of Turner syndrome with left inguinal hernia and severe hypertension.
Interventions: Baseline hormonal analysis was normal. Karyotype revealed Turner mosaic with 46XX (85%); 45XO (15%). MRI showed Mullerian agenesis with normally located right ovary in pelvis and left ovary prolapsed through deep inguinal ring into the canal of Nuck. Antihypertensives were started, and patient optimized for surgery. Laparoscopic hernia repair and repositioning of left ovary into the pelvis was done.
Measurements and Main Results: Patient had uneventful post-operative course and was discharged in stable condition on anti-hypertensive medication. Future reproductive issues and need of passive vaginal dilatation or vaginoplasty before marriage were explained to the patient and family.
Conclusion: This is the first ever reported case with unusual association of atypical MRKH, Turner mosaic syndrome and tubo-ovarian hernia into the inguinal canal.

8999 Reproductive Outcomes and Overall Prognosis of Patients with Asherman's Syndrome Undergoing IVF Cycles

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Study Objective: To estimate the impact of Asherman's Syndrome (AS) following hysteroscopic adhesiolysis on short term reproductive outcomes and the time to achieve pregnancy in infertile patients during IVF cycles.
Design: Retrospective cohort study.
Setting: Tertiary university affiliated medical center.
Patients or Participants: Fifty-one infertile patients who were treated for Asherman's syndrome (AS) and underwent IVF cycles (study group). Patients were matched with controls in a 1:1 ratio, according to their age and etiology of infertility (control group).
Interventions: The collected date was obtained from medical records and telephonic survey.
Measurements and Main Results: There was no difference in the mean number of embryo transfer per patient between the two groups (4.9 ±4.6 vs. 6.22 ±4.3, p=0.78). The mean endometrial thickness before embryo transfer was significantly higher among women in the control group (8.7 ±1.8 vs. 6.95±1.7, respectively, p=0.001). Women with AS had significantly lower cumulative live birth rate and significantly higher miscarriage rate as compared to women in the control group (23.5% vs 56.8, p=0.001 and 41% vs. 15.6%, p=0.008 accordingly). The mean endometrial thickness was significantly higher among women with AS who had live birth (8.2 (±1.4) 6.9 (±1.2), p=0.001). The Overall time to conception was significantly longer among with AS (407.962 ±74.7 Vs 785.6
Conclusion: AS has an impact on the reproductive potential in infertile patients following hysteroscopic adhesiolysis. Endometrial thickness was shown to be an important predictor for live birth among women with AS that utilizing IVF.

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