AGL 2022

51st GLOBAL CONGRESS ON MIGS

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SYLLABUS

UROGYN-612: Urogyn for the MIGS Surgeon: Apical Support

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Lauren Siff, MD*

URO-612: Urogyn for the MIGS Surgeon: Apical Support

Co-Chairs: *Tanaz Ferzandi, MD, Luiz Gustavo Oliveira Brito, MD*

Faculty: *Soorena Fatehchehr, MD, MSc, Jamal Mourad, DO, Amy Park, MD, Lauren Siff, MD*

Course Description

This course is designed for the MIGS surgeon to address the vaginal apex, the cornerstone of vaginal support. It is important to understand the functionality of correcting the apex as this correlates with other defects, such as the anterior compartment. We will provide data regarding the best approach for surgical restoration of the anatomy in a long-term fashion, and the recent growing of uterine preservation.

Learning Objectives

At the conclusion of this course, the participants will be able to: 1) Diagnose POP (Baden Walker vs. POPQ) and consider different possible surgical approaches; 2) Describe different approaches for sacrocolpopexy, uterosacral ligament suspension and 3) Follow the indications for hysteropexy and the recent data comparing with standard, vaginal hysterectomy for apical prolapse.

Course Outline

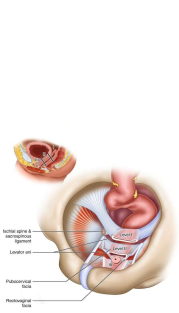
9:45 am	Welcome, Introduction and Course Overview	T. Ferzandi/L.G. Oliviera Brito
9:50 am	Laparoscopically Tackling the Apex: Native Tissue Approach: Uterosacral Colpopexy, Richardson Stitch	T. Ferzandi
10:10 am	Laparoscopically Tackling the Apex: Mesh Augmented: Sacral Colpopexy	J. Mourad
10:30 am	The OG Method: Vaginal Surgery: Uterosacral and Sacrospinous Ligament Fixation	L.G. Oliveira Brito
10:50 am	Hysteropexy: Vaginal Uterine Conservation Technique	L. Siff
11:10 am	Laparoscopic Uterine Conservation	S. Fatehchetr
11:30 am	vNOTES: Combining the Best of MIS	A. Park
11:50 am	Questions & Answers	All Faculty
12:15 pm	Adjourn	

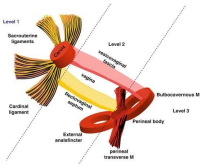
Apical Support

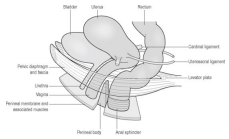
Urogynecology for the MIG Surgeon
51st AAGL Global Congress on Minimally Invasive Gynecologic Surgery
December 1, 2022
Aurora, CO

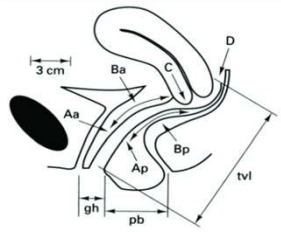
Disclosures related to this talk

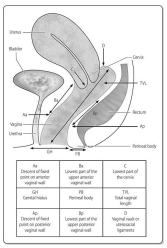
- Advisory Board - Coloplast





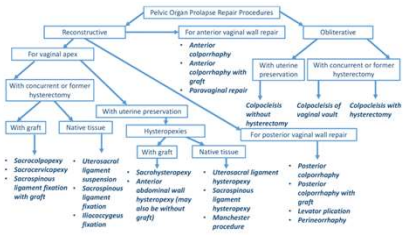






Treatment options- surgery

- In women who fail or decline non-surgical options
- Important considerations:
  - Location and severity of prolapse
  - The nature of the symptoms (eg, presence of urinary, bowel, or sexual dysfunction)
  - The patient's general health (BMI, esp. distribution of adiposity)
  - Patient preference



International Urogynecological Association., Meriwether, K.V., Gold, K.P. *et al.* Joint report on terminology for surgical procedures to treat pelvic organ prolapse. *Int Urogynecol J* **31**, 429–463 (2020). https://doi.org/10.1007/s00192-020-04236-1

- Apical

(Robot Assisted, Laparoscopy, Abdominal, Vaginal)

- Sacrocolpopexy (post hysterectomy)
- SCH with Sacrocervicopexy
- Sacrohysteropexy
- Uterosacral ligament suspension (uterus or vault)
- Sacrospinous fixation, +/- vaginal hysterectomy
- Sacrospinous Hysteropexy
- Iliococcygeal Vaginal Suspension
- [[Rectopexy]]

- Anterior Compartment +/- Graft or Mesh
  - Anterior Colporrhaphy
  - Paravaginal Defect Repair (vaginal, abdominal)
- Posterior Compartment +/- Graft or Mesh
  - Posterior Colporrhaphy – levator plication
  - Posterior Colporrhaphy – site specific
  - Sacrospinous Ligament Fixation
- Obliterative (with uterus or post-hysterectomy)
  - Le Fort Colpocleisis (or "colpectomy")

Sacrocolpopexy (SCxP)

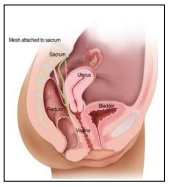

Repair of Posthysterectomy Vaginal-Vault Prolapse

- First described in 1962, Dr. Frederick Lane
- Grade A: SCxP preferred for vaginal apical prolapse
- Grade B: monofilament polypropylene mesh preferred graft
- Grade B: LSC is preferred technique
- Grade C: either permanent or delayed abs sutures @ vagina
- Grade C: permanent sutures or tackers @ sacral promontory
- Grade C: closing peritoneum over mesh
- Insuff evidence/conflicting data on total vs. SCH
- Insuff evidence/conflicting data for uterine preservation
  - Nevertheless, uterus preservation is associated with less mesh erosion (Grade B)

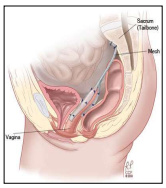
Costantini, E., Brubaker, L., Cerkiqni, M., Matthews, C.A., O'Reilly, B.A., Rizk, D., Giamitsas, K. and Maher, C.F., 2016. Sacrocolpopexy for pelvic organ prolapse: evidence-based review and recommendations. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *205*, pp.60-65.

Sacrocolpopexy with Mesh

"the gold standard"



Sacrohysteropexy (uterus in place)



Sacrocolpopexy (vaginal vault)

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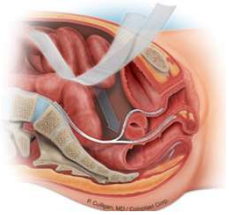
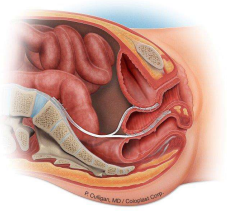
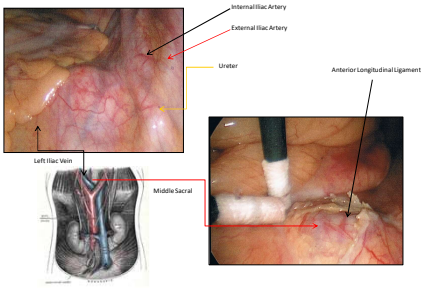




Steps

- After hysterectomy
  - Anterior dissection cvx/vaginal vault
    - Back fill bladder – delineate borders
    - Monopolar cautery to dissect
      - Caution with detrusor mm
      - Caution with over-correction anterior
  - Posterior Dissection
    - EA Sizer in rectum if there has been prior surgery / scarring
    - Avoid very distal dissection to the perineal body

Sacrocolpopexy - Anatomy



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Steps – cont'd

- Type of mesh
  - Type 1, polypropylene
  - Y-shaped vs. create own mesh
- Goretex vs. Delayed Abs sutures (vs. barbed)
  - How many is ideal?
  - Intracorporeal vs Extracorporeal knot tying
- Placement through ligament
  - NOT sacral promontory
- Re-peritonealization of mesh
  - Technique
  - ? Risk of bowel obstruction with barbed suture

Delayed Complication: Lumbar spondylodiscitis

Figure 1. MRI. Lumbar pyogenic spondylodiscitis, enhancement of soft tissues surrounding the L5-S1 vertebrae (arrow). MRI = magnetic resonance imaging.

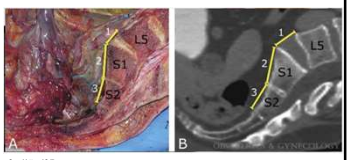
Figure 2. MRI after mesh removal 2 wk later: bony destruction of the lower part of the L5 vertebra and the dome of the sacrum (arrow). MRI = magnetic resonance imaging.

Lumbar spondylodiscitis

- 36.5% laparotomy
- 44.2% laparoscopic in 44.2%
- 15.4% robotic-assisted
- 63.5% cases - Sacral anchorage was performed with synthetic mesh (nonabsorbable or partially absorbable)
- Biologic mesh 1.9%, direct sutures 3.8%
  - 25% of all cases, the type of sacral anchorage was not specified.
- The attachment to the promontory
  - was made with sutures in 36.5% (all nonabsorbable sutures)
  - staples, clips, tacks or screws in 23% of the cases
  - Information lacking in 40.4% of the cases

Where to tack the mesh?

- Review of 21 cases of pyogenic spondylitis
- Authors determined that the safest site of securing the mesh was the "true" sacral promontory which lies 1.5 cm below L5-S1 intervertebral disc



Rosenblatt and Culligan

Good, M.M., Abele, T.A., Belgodère, S., Schaffer, J.I., Slocum, P., McIntire, D. and Corton, M.M., 2013. Preventing L5–S1 discitis associated with sacrocolpopexy. *Obstetrics & Gynecology*, *121*(2 PART 1), pp.281-290.

Do we need to perform systematic supracervical hysterectomy during laparoscopic Sacrocolpopexy?

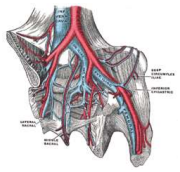
- Ninety, four patients were included in the study.
- 64 patients (68.1%) received promonto fixation with subtotal hysterectomy, 12 patients (12.7%) received uterine-sparing promonto fixitis, 16 patients (17%) had a history of hysterectomy, and 2 patients (2.2%) received promonto fixation with total hysterectomy.
- The mean age of patients was 61 ± 20 years, parity was 2 ± 2 and body mass index was 25.2 ± 7.32. The objective success rate, defined as a < 2 POP-Q stage, was 93.75% in the promonto fixation with subtotal hysterectomy group vs. 66.7% in the uterine-preserved promonto fixation group (p=0.019).
  - The subjective success rates were 98.4% and 83% respectively (p = 0.063 ns).
- Conclusion
- Promonto fixation offers good anatomical results, with better objective and subjective success rates when combined with subtotal hysterectomy.

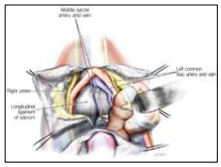
LSC SCH vs LSC total hyst – national trends

- 2010 - 2017
- 7729 surgical cases: 4292 (55.0%) total hysterectomy and 3480 (45.0%) supracervical hysterectomy
- 2014 FDA safety communication re: power morcellation
- Concurrent total hysterectomy remained relatively unchanged from 64.2% in 2010 to 52.5% in 2017
- No significant change in trend between 2010 – 2017
  - LOS greater for SCH group (2d)

Danger Danger …

- Median sacral artery
- Left common iliac vein
- Aortic bifurcation
- Right ureter
- L5-S1 disc space





Managing brisk intra-operative bleeds

- Prevention
- Management
- Basic Hemostatic Techniques
- Laparoscopic Hemostasis
- Management of bleeding at the sacrum

Preoperative Preparedness

- Recognition of procedures at high risk for heavy bleeding
- Appropriate preoperative laboratory evaluation
- Crossmatched blood available
- OR team informed of likelihood that bleeding may be encountered
  - Plan reviewed
  - Tools available

Management

- Alert the OR team
  - Ask for the help you need
- Anticipate Resuscitation
  - Alert anesthesia
  - Call for blood
- Get visualization
  - Suction, packs, extra hands
- Communication
- "Slow is smooth, and smooth is *fast*"
- TTT! (Dr. Magrina)

Basics of Hemostasis

- APPLY PRESSURE
  - Laparotomy
    - Finger
    - Sponge stick
    - Damp laparotomy pads
- Identify and control localized bleeding
  - Visualization
  - Ligate or cauterize as appropriate
  - Use of hemostatic agents for low-volume bleeding
- Get Help
  - Vascular surgery
  - Interventional radiology

Laparoscopic Hemostasis Techniques

- Visualization
  - Suction irrigator
  - Increase insufflation pressure and flow settings
- Apply Pressure
  - Atraumatic grasper to bleeding site
  - 4 x 8 gauze sponges to hold pressure
  - Increase insufflation pressure for small bleeds
  - Convert to laparotomy

Management of Bleeding at the Sacrum

- Conventional hemostatic techniques
  - Cautery
  - Ligation
- Bone tacks
- Bone wax








Take Home Points

- Prepare
- Communicate
- APPLY PRESSURE
- Maintain control
- Ask for help
- Keep learning!

Sacrospinous Ligament Fixation (SSLF)

SSLF

- Transvaginal surgical treatment is mainly represented by the sacrospinous ligament fixation
- Sederl 1958; Richter 1968; Randall and Nichols 1971
- Sutures the posterior vaginal wall to the sacrospinous ligament
- Compared to sacrocolpopexy, SSLF
  - avoid abdomen
  - higher rate of dyspareunia
  - higher recurrence
  - lower morbidity
  - shorter intervention time
  - faster postoperative recovery
  - lower cost

Basic Steps:

- Exposure (lone star!)
- Infiltration
- Vaginal incision
- Recto-vaginal dissection
- Pararectal dissection
- SSL suture
- Vaginal fixation (with vaginal strips)
- Vaginal closure
- SSF
- Final closure.

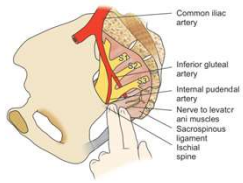
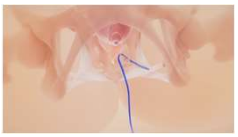


Fig. 6: Anatomy of sacrospinous ligament

Patient Selection, Risks, and Alternative Surgical Strategies | Abdominal Key

Transvaginal Sacrospinous Ligament Fixation: Revisited in Modern Gynecology. Shraddha S Shastri, Sameer P Darsawade, Nikita R Yadagiri. Journal of South Asian Federation of Obstetrics and Gynaecology (2020): 10.5005/jp-journals-10006-1760



USLS vs. SSF

- The recurrence rates in literature varies widely, 0 to 70.3% in the OPTIMAL trial
- OPTIMAL trial, randomized, compared uterosacral ligament suspension versus SLF
  - the recurrence rates were respectively 61.5% and 70% without any significant difference.

Jelovsek JE, Barber MD, Brubaker L, Norton P, Gantz M, Richter HE, et al.
Effect of uterosacral ligament suspension vs sacrospinous ligament fixation with or without perioperative behavioral therapy for pelvic organ vaginal prolapse on surgical outcomes and prolapse symptoms at 5 years in the OPTIMAL Randomized Clinical Trial.
JAMA. 2018;319(1):1-11.

Vaginal axis after abdominal sacrocolpopexy versus vaginal sacrospinous fixation—a randomized trial

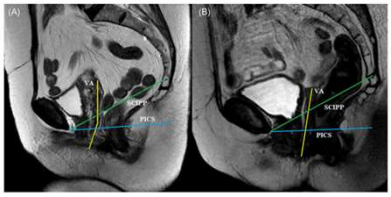


FIGURE 2 MRI photograph from vaginal axis (yellow line) after ASC (A) and vaginal SSF-M (B). It is shown the pelvic inclination correction system (PICS)—blue line and sacrococcygeal inferior pubic point line (SCIPP)—green line. ASC, abdominal sacrocolpopexy; MRI, magnetic resonance imaging; SSF-M, sacrospinous fixation surgery and anterior mesh

Adverse Events:

- Gluteal pain – requiring removal of stitch(es)
- Bleeding
- Injury to rectum (ureter, bladder)
- Constipation
- UTI
- Dyspareunia
- Myositis
- Perineal necrotizing infection of the gluteal region

Uterine preservation or not? SSF Hysteropexy

- recurrence rate was 19.5%
- retreatment rate was 11.0%
  - cystocele was the most common recurrent compartment (17.1%)
  - the uterine preservation group (n = 66) was younger, had lower parity, and had fewer stage 3 to 4 cystoceles and uterine prolapses than the concomitant hysterectomy group (n = 16)
  - Shorter operation times (99.4 minutes vs 153.7 minutes, *P* = .002) and lower anatomical recurrence rates (11.5% vs 45.5%, *P* = .039) were found in the uterine preservation group before and after PSM
  - Previous pelvic organ prolapse surgery (hazard ratio 3.14) and concomitant hysterectomy (hazard ratio 4.08) were identified as risk factors for anatomical recurrence
  - most common adverse event was buttock pain (14.6%) - resolved spontaneously within 4 weeks
- compared with concomitant hysterectomy, SSLF with uterine preservation reduces the anatomical recurrence rate.

Uterine preservation or not? SSF v USLS

- 4 sites, 147 patients underwent SSHP and 114 underwent USHP
  - SSHP patients were younger, higher BMI
- One year postop: 1 in 3 patients were available for follow-up
  - no differences in prolapse recurrence between patients who underwent USHP versus SSHP
  - adverse events was low and less than 5% of patients underwent subsequent hysterectomy for prolapse

Woodburn, K.L., Yuan, A., Toroia, M., Roberts, K., Ferrando, C. and Gutman, R.E., 2022. Sacrospinous fixation and vaginal uterosacral suspension: evaluation in uterine preservation surgery. *American Journal of Obstetrics & Gynecology*, *226*(3), p.S1270.

CYSTOSCOPY after all these procedures

World Health Organization

"health is a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity"

Laparoscopically Tackling The Apex Mesh Augmented Sacrocolpopexy

Jamal Mourad DO
Department of Obstetrics and Gynecology
Division of Minimally Invasive Gynecologic Surgery
University of Arizona College of Medicine – Phoenix
Banner – University Medical Center Phoenix

THE UNIVERSITY OF ARIZONA College of Medicine Phoenix

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December 1-4, 2022 | Aurora, CO | congress.aagl.org

Disclosure

I have no financial relationships to disclose

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Objectives

- Discuss the role of the MIGS surgeon in the treatment of POP?
- Review the surgical approach to a RSCP with mesh
- Summarize possible complications associated with SCP.

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Food for thought

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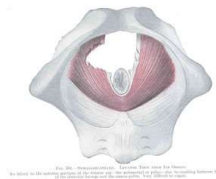
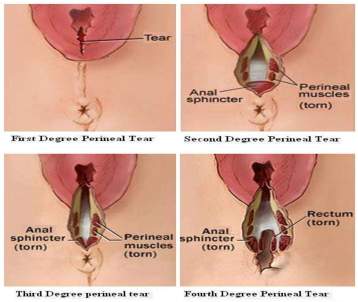


De Lee, Joseph B., A.M., M.D. The Principles and Practice of Obstetrics. 7th ed. Philadelphia: W. B. Saunders Company, 1938

Banner University Medicine

Clinical Note – Tears During Delivery



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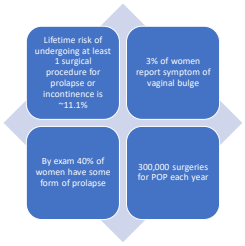
Epidemiology



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Risk Factors

- Parity (vaginal deliveries)
  - Operative deliveries
  - Birthweight
- Advancing age
- Obesity
- Connective tissue disorders
- Menopausal status
- Chronic disease
  - Constipation
  - COPD

Banner University Medicine

Prolapse Grading

Braden-Walker

Grades:

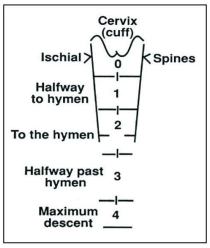
0 = Normal anatomical position

1 = Descent less than half way to hymen (mild prolapse)

2 = Descent more than half way to hymen, up to, or slightly beyond the hymen (mod prolapse)

3 = Half of organ is past the hymen (severe prolapse)

4 = Complete eversion



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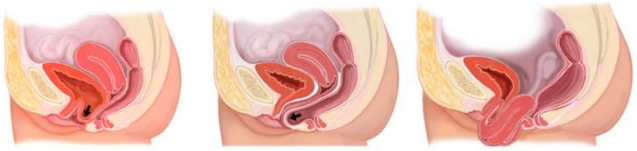

Cystocele 34.3%[2] **Rectocele 18.6%[2]** **Apical Prolapse 14.2%[2]**

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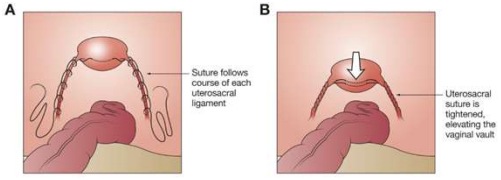
Uterosacral Colpopexy



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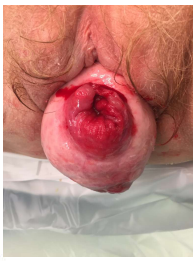
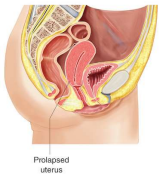
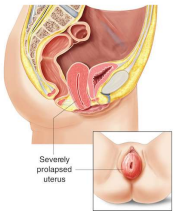
Prolapse: Uterine prolapse







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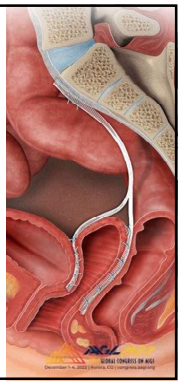
Sacocolpopexy

Graft Options

- Natural graft: fascia lata, rectus fascia, dura mater
- Autologous: fascia lata, rectus fascia
- Allogenic: fascial lata, dermal grafts
- Synthetic grafts: polypropylene, polyester fiber, polytetrafluoroethylene, Dacron

Type 1 mesh (polypropelene) standard of care



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SCP – Postoperative Complications

- Mesh exposure – 1-10%
  - Higher mesh erosion rate from older mesh types
  - Supracervical hyst decreases mesh exposure rate
- Cystotomy
- Small bowel obstruction (higher in Abdominal vs Laparoscopic)
- Sacral osteomyelitis

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Apical - Sacrocolpopexy vs Vaginal Vault suspension

- No direct comparison between SCP vs vaginal repairs
- Meta-analysis 2016 (Cochrane)
  - POP Symptoms more common after vaginal repairs (7% vs 14%)
  - Repeat Surgery more common after vaginal repairs (4% vs 8%)
  - Recurrent prolapse more common after vaginal repairs (22% vs 41%)
  - Dyspareunia more common after vaginal repairs
- Ileus and SBO more common in abdominal group (2.7% vs 0.2%)
- VTE higher in abdominal group (0.6% vs 0.1%)
- Mesh complications present with SCP (1-2%)

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Uterosacral Ligament Suspension: Laparoscopic and Vaginal Approaches

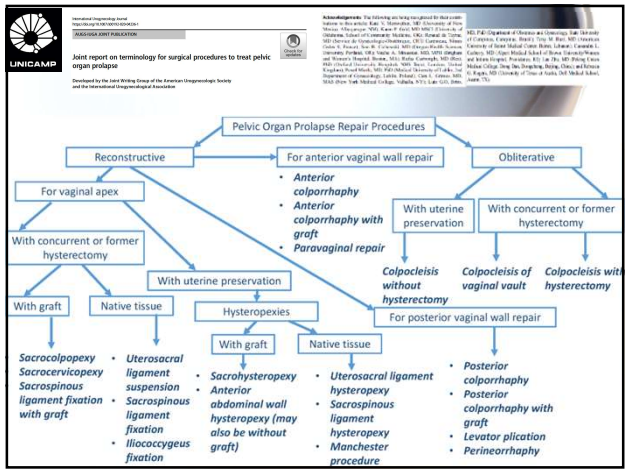
Luiz Gustavo Oliveira Brito
Associate Professor, Department of Obstetrics and Gynecology, University of Campinas
Post-Doctoral Research Fellow, Brigham and Womens Hospital, Harvard Medical School (BWH-HMS)
Past Chair, Urogynecology and Vaginal Surgery SIG and Chair, Publications Committee, AAGL
President, Brazilian Urogynecology Association (UROGINAR)
International Advisory Board, Latin America, International Urogynecological Association (IUGA)
International Advisory Board (IAB), Latin America & the Caribbean, International Urogynecology Association (IUGA)
Urogynecology Division, Beneficiencia Portuguesa Hospital, Sao Paulo, Brazil

Learning objectives

- To describe uterosacral ligament suspension technique and the steps for the laparoscopic and vaginal approaches
- To compare laparoscopic and vaginal approaches with regard to efficacy, safety and operative complications
- To describe the preferences of surgeons with regard to the USLS surgery

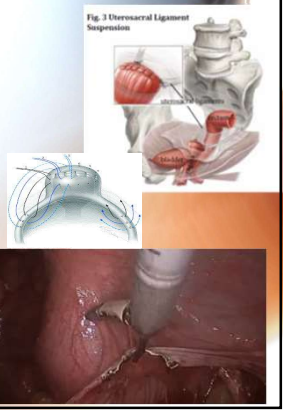
Disclosure

- Consultant: Promedon, Astellas, AstraZeneca
- Speakers Bureau: Promedon, Apsen, AstraZeneca
- Board: AAGL, IUGA, SoMe Editor - IUJ



USLS – History and main topics

- Miller (1912) – described the USLS – conexión between the vaginal vault/pericervical ring and sacrum
- McCall (1957) – connecting the USLS to the vaginal vault by obliteration of the posterior cul-de-sac
- DeLancey level 1
- To incorporate a segment of the USL to the pubocervical fascia and rectovaginal fascia
- Suspension is the complement of the culdoplasty at least of the medium third above the ischial spine
- Concern – ureter – cystoscopy (1.8-10,9 %)



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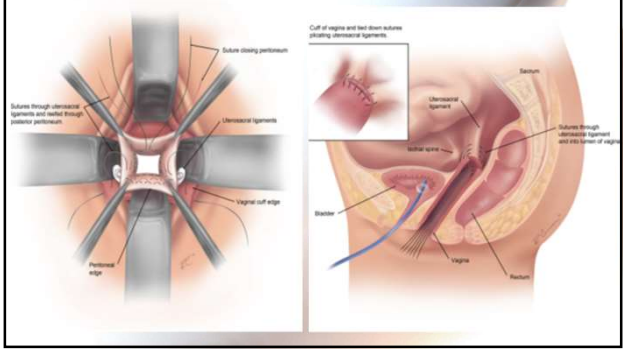
Ipsilateral technique(Shull) and median (Mayo)

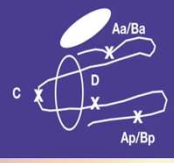


Case Presentation

- E.A.S, 39 years-old woman
- Patient reports a vaginal bulge during valsalva for 1 year with progressive worsening. She also refers to stress urinary incontinence (positive filled-bladder stress test).
- PMH: No comorbidities, use of medications, allergies, addictions.
  Previous surgeries: VLP cholecystectomy
  Obstetrics history: $G_3P_{V3}A_1$
- POP-Q

-2 Aa	-2 Ba	+1 C
3 GH	3 PB	8 TVL
-3 Ap	-3 Bp	-1 D

A Beneficência Portuguesa de São Paulo



https://surgeryu.com/detail/5390

Vaginal USLS

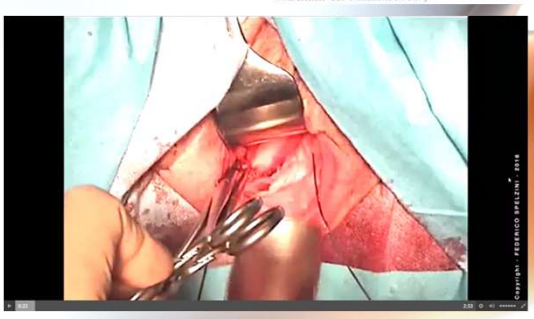
Int Urogynecol J. 2018 Jan;29(1):161-163. doi: 10.1007/s00192-017-3497-y. Epub 2017 Oct 16.

Tips and tricks for uterosacral ligament suspension: how to avoid ureteral injury

Stefano Manodoro [1 2], Matteo Frigerio [2 4], Rodolfo Milani [2 4], Federico Spelzini [3]

Affiliations + expand

PMID: 29038833 DOI: 10.1007/s00192-017-3497-y



Revisión sistemática – USLS y tecnica

111

Uterosacral ligament suspension - is there heterogeneity among surgical techniques? - A systematic review

Oliveira Brito, I.C.[1]; Gesteira, F.[2]; Makishi, M.[2]; Abrao, MS[3]; Lourenco, TR[4]; Andres, M.[5]; Yi, J.[5]

1 - University of Campinas, Campinas and Beneficencia Portuguesa Hospital, Sao Paulo
2 - Beneficencia Portuguesa Hospital, Sao Paulo
3 - Beneficencia Portuguesa Hospital, Sao Paulo and University of Sao Paulo
4 - Beneficencia Portuguesa Hospital, Sao Paulo and University of Sao Paulo
5 - Mayo Clinic, Arizona

Introduction: Uterosacral ligament suspension (USLS) is a surgical technique for repairing apical prolapse, which can be performed vaginally, robotically, or laparoscopically. Recently, a joint report on terminology for surgical procedures was published by IUGA/AUGS and describes the necessary steps to perform it; however, there is a lack of data for technique variability performed in published clinical trials.

Objective: To perform a systematic review registered at PROSPERO to analyze whether there is heterogeneity in techniques among studies that have analyzed efficacy and complications using USLS regardless of surgical route.

Methods: Clinical, prospective, or retrospective studies with USLS as the intervention group with or without a comparator were included from inception to December 2020 from PubMed and Scopus databases. Exclusion criteria included case series with less than 10 patients, experimental studies or narrative reviews. Outcomes were divided into study characteristics (study design, funding, IRB approved, conflict of interests, etc.) preoperative variables (use of vaginal estrogen/antibiotics, surgeon volume) and intraoperative variables (surgical route, operative time, type of suture, suture caliber, absorbable or non-absorbable, type of USLS [median plication or ipsilateral], use of cystoscopy). Methodological quality of the studies was judged by the Newcastle-Ottawa scale for observational studies.

Results: From 1,565 retrieved studies, 13 (7 retrospective, 1 cross-sectional and 5 prospective studies; no RCTs) were included in the qualitative analysis, comprising of 1,101 women. Eight studies reported no conflict of interests or funding. Studies were published between 2000-2020. No metanalysis was produced from these data as they were heterogeneous. No studies mentioned using vaginal estrogen. Two studies have mentioned the use of prophylactic antibiotics. Seven studies used the vaginal route, 7 laparoscopic and 2 robotic-assisted. From the vaginal

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https://doi.org/10.1007/s00192-022-05079-8

ABSTRACT

IUGA 46th Virtual Annual Meeting

- Seven studies used the vaginal route, 7 laparoscopic and 2 robotic-assisted. From the vaginal group, only two described the surgical steps.
- Operative time (n=7) varied from 60-270 minutes; the shortest duration was from the vaginal group.
- All studies described surgeons as experts or senior surgeons; however, within three studies, surgeries were performed by a fellow under supervision of a senior surgeon.
- Suturing was described as ipsilateral in 6 studies, midline plication in 6 studies and 1 study did not describe the technique.
- Absorbable suture was the most common material used, and polydioxanone was the most common suture type.
- Suture caliber varied from 0-2.0 and suture numbers varied from 2 to 8 (median=6; three for each USL).
- Eleven studies reported intraoperative cystoscopy and 12 studies reported opening of the peritoneum to perform USLS .

How do you do it?

Heterogeneity in techniques for uterosacral ligament suspension for apical prolapse

Johnny Yi MD, Mayo Clinic Arizona
Tomoko Dune MD, Pelvic Floor Unit, Royal Women's Hospital
Luis Bitto MD, University of Campinas

Methods

A web- based IRB exempt survey was sent to surgical society members who focus on the treatment of apical prolapse. These included members of the American Urogynecologic Society (AUGS), American Association of Gynecologic Laparoscopists (AAGL) Urogynecology special interest group, and the Urogynaecological Society of Australasia (UGSA). Survey was sent via RedCap®.

Results

Survey results yielded **242** responses. The majority of respondents were from the US (68.3%), Brazil (10%) and Australia (5.8%). There was a bimodal distribution with majority of surgeons either <5 years or >20 years in practice. 54% of respondents perform >100 surgeries per year with 71% of cases being for apical prolapse support. USLS was the most common apical prolapse procedure performed by respondents.
Vaginal approach and ipsilateral high uterosacral ligament suspension technique were most common, with 2 sutures on each side. Only 31.5% of surgeon use some type of permanent suture. 45.1% of surgeons place the sutures at the level of the ischial spine, whereas 44.3% place above the ischial spine.

Discussion

There is significant heterogeneity in the technique of performing uterosacral ligament suspension for apical prolapse surgery. Standardization of technique is important, especially in the scenario of publishing clinical results.

Uterosacral ligament suspension techniques

Most common apical prolapse surgery- USLS>SCP>SSLS
Most common approach- Vaginal
Most common technique- High uterosacral (ipsilateral)
Most common suture (vaginal)- absorbable±delayed absorbable- 51%
Highest suture placement
Above ischial spine = At ischial spine
How many sutures on each side? 52% place 2, 28.3% place 3.
Nerve sparing technique? 8.7%

Now, with 621 responses!
To be presented here at AAGL 2022!!!

AUGS/IUGA
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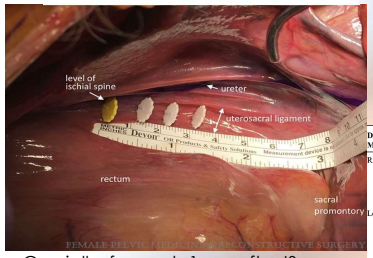
Austin, Texas, USA

Anatomical relationship between ureter and USL

ORIGINAL ARTICLE

Surgical Anatomy of the Uterosacral Ligament Colpopexy

Lauren N. Siff, MD, Karl Jallad, MD, Lisa C. Heitman, MD, and Mark D. Walters, MD



Distance Measured,* n = 11	Mean Distance ± SD, cm	Median, cm	Range, cm
Right USL to ureter:			
At IS	1.3 (0.3)	1.5	0.8–1.7
At 1 cm above IS	1.5 (0.3)	1.6	1.0–1.9
At 2 cm above IS	1.7 (0.3)	1.8	1.2–2.1
At 3 cm above IS	1.9 (0.3)	2.0	1.4–2.3
Left USL to ureter:			
At IS	1.3 (0.3)	1.3	0.8–1.6
At 1 cm above IS	1.5 (0.3)	1.6	1.0–1.8
At 2 cm above IS	1.7 (0.3)	1.8	1.2–2.0
At 3 cm above IS	2.0 (0.3)	2.0	1.4–2.4

*Distances were measured from the ureter to the USL at 1 cm, 2 cm, and 3 cm proximally from the level of the IS toward the sacrum.

Distance Measured,* n = 11	Mean Distance ± SD, cm	Median, cm	Range, cm
Right USL to rectum:			
At IS	1.9 (0.4)	1.8	1.2–2.6
At 1 cm above IS	2.1 (0.4)	2.1	1.5–2.8
At 2 cm above IS	2.4 (0.4)	2.4	1.8–3.1
At 3 cm above IS	2.6 (0.5)	2.6	2.0–3.4
Left USL to rectum:			
At IS	1.5 (0.3)	1.5	0.8–2.0
At 1 cm above IS	1.5 (0.3)	1.5	0.8–2.0
At 2 cm above IS	1.5 (0.3)	1.5	0.8–2.0
At 3 cm above IS	1.5 (0.3)	1.5	0.8–2.0

*Distances were measured from the rectum to the USL at 1 cm, 2 cm, and 3 cm proximally from the level of the IS toward the sacrum.

- Cranially, for each 1 cm after IS, ureter gets far 0.2 cm from the ureter

Original Article

National Analysis of Perioperative Morbidity of Vaginal Versus Laparoscopic Hysterectomy at the Time of Uterosacral Ligament Suspension

Graham C. Chapman, MD, Emily A. Slopnick, MD, Kasey Roberts, MD, David Sheyn, MD, Susan Wherley, MD, Sangeeta T. Mahajan, MD, and Robert R. Pollard, MD

From the Department of Obstetrics and Gynecology, Case Western Reserve University School of Medicine (all authors); Department of Obstetrics and Gynecology, University Hospitals Cleveland Medical Center (Drs. Chapman, Slopnick, Roberts, Wherley, and Mahajan), and Department of Obstetrics and Gynecology, MetroHealth Medical Center (Drs. Chapman, Slopnick, Roberts, Sheyn, and Pollard), Cleveland, Ohio

- To compare the morbidity of laparoscopic hysterectomy versus vaginal hysterectomy at the time of USLS
- Retrospective study(2010-2015)
- Analysis of propensity score cohort
- All groups show differences with regard to the patient profile
- Complication rates after 30 days of surgery for every population by propensity score cohort
- 3349 vaginal and 484 laparoscopic

Original Article

National Analysis of Perioperative Morbidity of Vaginal Versus Laparoscopic Hysterectomy at the Time of Uterosacral Ligament Suspension

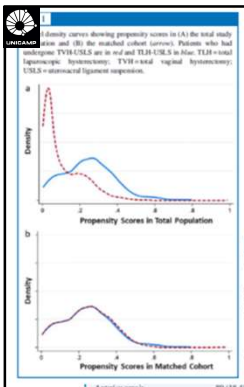
Graham C. Chapman, MD, Emily A. Slopnick, MD, Kasey Roberts, MD, David Sheyn, MD, Susan Wherley, MD, Sangeeta T. Mahajan, MD, and Robert R. Pollard, MD

Table 1

Comparison of patients who had undergone TVH-USLS versus TLH-USLS in the unmatched population

Characteristics	TVH-USLS (n = 3349)	TLH-USLS (n = 484)	p-value
Age, yrs	58.3 ± 12.5	50.9 ± 12.2	<.01
BMI, kg/m²	28.3 ± 5.8	29.4 ± 7.1	<.01
White	2802 (83.7)	400 (82.6)	.55
Hispanic	303 (9.1)	40 (8.3)	.61
African American	179 (5.3)	43 (8.9)	<.01
Smoker	337 (10.1)	82 (16.9)	<.01
Dependent	12 (0.3)	0 (0)	.38
COPD	56 (1.7)	6 (1.2)	.57
Dyspnea	88 (2.6)	18 (3.7)	.18
Diabetes mellitus	303 (9.1)	28 (5.8)	.02
Hypertension	232 (36.8)	143 (29.6)	<.01
ASA class 3 or 4	95 (20.1)	105 (21.7)	.63
Anterior or posterior repair	2421 (72.3)	153 (31.6)	<.01
Midurethral sling	1268 (37.9)	147 (30.4)	<.01
Adnexal surgery	1205 (36.0)	415 (85.7)	<.01
Operative time, min	137 (102–176)	141 (99–201)	<.01
Length of stay, d	1 (1–1)	1 (1–2)	<.01
Primary surgical diagnosis			
Pelvic organ prolapse	2785 (83.2)	229 (47.3)	<.01
Stage 4 prolapse	307 (9.2)	22 (4.5)	<.01
Abnormal uterine bleeding	200 (6.0)	68 (14.0)	<.01
Myoma	137 (4.1)	84 (17.4)	<.01
Pelvic pain or endometriosis	65 (1.9)	45 (9.3)	<.01

ASA = American Society of Anesthesiology; BMI = body mass index; COPD = chronic obstructive pulmonary disease; TLH = total laparoscopic hysterectomy; TVH = total vaginal hysterectomy; USLS = uterosacral ligament suspension.
Data in columns represent mean ± standard deviation or median (interquartile range) for continuous variables and count (%) for categoric variables.



VH-USLS versus TLH-USLS after propensity score matching

	LS (n = 484)	TLH-USLS (n = 484)	OR (95% CI)	p-value
	2.7 (95)	50.9 ± 12.2 141 (99–201)	– –	.87 .90
		1 (1–1)	–	.42
		0 (0)	–	–
		6 (1.2)	0.5 (0.1–1.8)	.51
		143 (29.5)	1.2 (0.9–1.5)	.33
		60 (12.4)	0.9 (0.6–1.3)	.48
		102 (21.1)	0.9 (0.7–1.3)	.63
		85 (17.6)	1.1 (0.8–1.5)	.80
		126 (26.0)	1.0 (0.7–1.3)	.94
		147 (30.4)	1.2 (0.9–1.6)	.24
Anterior repair	89 (18.4)			
Posterior repair	124 (25.6)			
Midurethral sling	165 (34.1)			

ASA = American Society of Anesthesiology; CI, confidence interval; COPD = chronic obstructive pulmonary disease; OR = odds ratio; TLH = total laparoscopic hysterectomy; TVH = total vaginal hysterectomy; USLS = uterosacral ligament suspension.
Data in columns represent mean ± standard deviation or median (interquartile range) for continuous variables and count (%) for categoric variables.

- Before propensity score cohort: patients from the vaginal group had a composite complication rate (11.4 % versus 6.4 %;p<.01) and severe complications (5.6 % versus 3.1%;p<.01)

Table 2

Complication rates for patients who had undergone TVH-USLS versus TLH-USLS in the unmatched population

Complication type	TVH-USLS (n = 3349)	TLH-USLS (n = 484)	p-value
Composite complication rate	383 (11.4)	31 (6.4)	<.01
Urinary tract infection	213 (6.4)	15 (3.1)	<.01
Superficial infection	16 (0.5)	1 (0.2)	.71
Serious complication rate	186 (5.6)	15 (3.1)	.02
Readmission	81 (2.4)	9 (1.9)	.52
Reoperation	57 (1.7)	5 (1.0)	.34
Blood transfusion	34 (1.0)	4 (0.8)	1.00
Serious infectious complication	28 (0.8)	1 (0.2)	.17
Nonhome discharge	18 (0.5)	0 (0)	.15
Pneumonia	10 (0.3)	0 (0)	.63
Cystotomy	9 (0.3)	2 (0.4)	.64
Thromboembolism	8 (0.2)	0 (0)	.61
Cardiac complication	5 (0.15)	0 (0)	1.00
Reintubation	3 (0.09)	0 (0)	1.00
Death	2 (0.06)	0 (0)	1.00

TLH = total laparoscopic hysterectomy; TVH = total vaginal hysterectomy; USLS= uterosacral ligament suspension.
Data in columns represent count (%).

- After propensity score cohort – Patients from the vaginal group continued with a high composite complication rate (UTI and major infection (10.3 vs 6.4%), but without differences for severe complications (4.3% vs 3.1%, p=.04)

Table 4

Complication rates for patients who had undergone TVH-USLS versus TLH-USLS in the propensity score–matched population

Complication type	TVH-USLS (n = 484)	TLH-USLS (n = 484)	p-value
Composite complication rate	50 (10.3)	31 (6.4)	.04
Urinary tract infection	26 (5.4)	15 (3.1)	.11
Superficial infection	2 (0.4)	1 (0.2)	1.00
Serious complication rate	21 (4.3)	15 (3.1)	.40
Readmission	7 (1.4)	9 (1.9)	.80
Reoperation	8 (1.7)	5 (1.0)	.58
Blood transfusion	4 (0.8)	4 (0.8)	1.00
Serious infectious complication	4 (0.8)		
Nonhome discharge	3 (0.6)		
Pneumonia	1 (0.2)		
Cystotomy	0 (0.0)		
Thromboembolism	0 (0)		
Cardiac complication	0 (0)		
Reintubation	1 (0.2)		
Death	0 (0)		

TLH = total laparoscopic hysterectomy; TVH = total vaginal hysterectomy; USLS= uterosacral ligament suspension.
Data in columns represent count (%).

Table 6

Multivariate logistic regression to identify predictors of the composite complication rate and the serious complication rate in the propensity score–matched cohort

Predictors	aOR	95% CI	p-value
All complications			
TVH-USLS	1.6	1.0–2.6	.04
Anterior repair	1.8	1.0–3.0	.05
Midurethral sling	1.8	1.1–2.8	.02
Asian race	3.9	1.4–11.5	.01
Serious complications only			
TVH-USLS	1.4	0.7–2.8	.33
ASA class 4	10.7	2.0–57.5	<.01

aOR = adjusted odds ratio; ASA = American Society of Anesthesiology; TLH = total laparoscopic hysterectomy; TVH = total vaginal hysterectomy; USLS = uterosacral ligament suspension.

ORIGINAL ARTICLE

Uterosacral vault suspension (USLS) at the time of hysterectomy: laparoscopic versus vaginal approach

Sara Houlihan[1] · Shunaha Kim-Fine[1] · Colin Birch[1] · Selphee Tang[1] · Erin A. Brennand[1]

- Retrospective study – 152 vaginal and 54 laparoscopy

Characteristics	Planned laparoscopy (n = 54)	Planned vaginal (n = 152)	p value
Age, mean (SD)	54.4 (12.0)	62.0 (10.6)	<0.001
BMI, median (IQR)	27.3 (8.3)	26.9 (5.3)	0.845
ASA class			0.841
1	13 (24.1%)	41 (27.0%)	
2	36 (66.7%)	95 (62.5%)	
3	5 (9.3%)	16 (10.5%)	
Smoker, n (%)	7 (13.0%)	12 (7.9%)	0.280
Baseline POPQ Stage, n (%)			0.326
Stage 1	27 (52.9%)	69 (46.4%)	
Stage 2	21 (41.2%)	59 (39.9%)	
Stage 3 and 4	3 (5.9%)	20 (13.5%)	
Preop POP-Q C score, median (IQR)	−2 (3)	−1 (3)	0.020

ORIGINAL ARTICLE

Uterosacral vault suspension (USLS) at the time of hysterectomy: laparoscopic versus vaginal approach

Sara Houlihan[1] · Shunaha Kim-Fine[1] · Colin Birch[1] · Selphee Tang[1] · Erin A. Brennand[1]

- Better results for the Lap group with regard to symptomatic recurrence prolapse and POPDI-6 score but worse baseline C point

Table 2 Patient outcomes

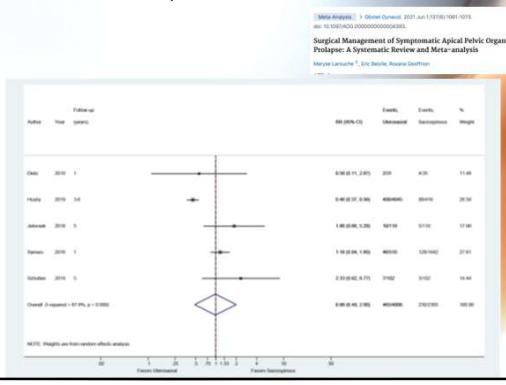
Variable	Planned laparoscopy (n = 54)	Planned vaginal (n = 152)	Difference‡ (95% confidence interval)	p value
Symptomatic recurrence prolapse, n (%)	10 (23.8)	50 (41.0)	−17.2% (−32.7% to −1.6%)	0.046
POPDI-6 score, median (IQR)	(8.3)	4.2 (16.7)	−26.0 (−48.0 to −8.7)	0.022
ANY retreatment for recurrent prolapse, n (%)	3 (7.1%)	17 (13.9%)	−6.8% (−16.7% to 3.1%)	0.246
Pessary for recurrent prolapse, n (%)	3 (7.1%)	7 (5.7%)	1.4% (−7.4% to 10.2%)	0.717*
Repeat surgery for recurrent prolapse, n (%)	0 (0.0)	9 (7.4)	−7.4% (−12.0% to 2.7%)	0.113*
Dyspareunia, n (%)	12/30 (40)	24/60 (40)	0.0% (−21.5% to 21.5%)	>0.999
Difficulty with sexual activity†	12 (40.0)	23 (38.3)	1.7% (−19.8% to 23.1%)	0.879
Stopped sexual activity†	5 (16.7)	14 (23.3)	−6.7% (−23.8% to 10.4%)	0.465
Treatment for painful intercourse	2 (6.7)	7 (11.7)	−5.0% (−17.1% to 7.1%)	0.712*

*Fisher's exact test
‡ Risk difference for proportions, difference in mean for length of surgery, and Hodges-Lehmann median difference for EBL and POPDI-6
† Of those who were in a relationship that could involve sexual activity, a response of rarely, sometimes, often or always

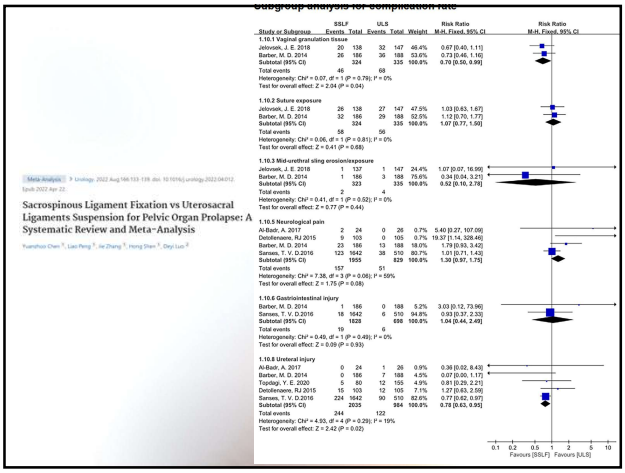
Uterosacral vault suspension (USLS) at the time of hysterectomy: laparoscopic versus vaginal approach

- No ureteral obstruction in the lap group versus the vaginal group (0 vs 14 ;p=0;023)
- High PO urinary retention rate in the vaginal group (31% vs 15%, p=.024)
- Anexectomy performed in 98% in the lap group versus 56% in the vaginal group
- No statistically difference between groups with regard to the reoperation rate (0 [lap] vs 7%[vag], p=0.113)

No difference between High McCall and SSF for POP reoperation



Surgical Management of Symptomatic Apical Pelvic Organ Prolapse: A Systematic Review and Meta-analysis



Sacrospinous Ligament Fixation vs Uterosacral Ligaments Suspension for Pelvic Organ Prolapse: A Systematic Review and Meta-Analysis

JMIG

Original Article

Comparison of Trendelenburg Angles in Vaginal, Laparoscopic, and Robotic Uterovaginal Apical Prolapse Repairs

Andrea Jaresova, MD, Hussein Warda, MD, Annliz Macharia, MPH, Michele R. Hacker, ScD, and Janet Li, MD

- Higher Trendelemburg angle and time standing in the same position in the laparoscopic position, but higher variation in the Trend angle in the vaginal group
- Intra-op ventilatory patterns did not vary among the groups

Take home message

- No prospective studies comparing laparoscopic versus vaginal USLS
- Less ureteral kinking or lesion by the laparoscopic route than the vaginal route according to retrospective studies
- Cystoscopy is importante for the vaginal approach
- No direct comparison between USLS techniques and high heterogeneity among surgeons for performing USLS
- Consider choosing the approach by balancing the patient´s need and your better learning curve for performing the procedure!

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@uroginap
THANK YOU!
lgobrito@unicamp.br
AAGL Fellows from Hospital BP – São Paulo, Brazil
Urogynecology Division, UNICAMP, Campinas, Brazil
@lgobritomd
twitter
lilgobrito

Hysteropexy: Vaginal Uterine Conservation Techniques

Lauren Siff, MD
Chief of Gynecologic Surgery
Asst Prof of OBGYN and Surgery: Division of Urology/Urogynecology
Central Virginia VA Medical Center
Virginia Commonwealth University School of Medicine

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Objectives

- Discuss Indications and Contraindications to Uterine Conservation
- Discuss the transvaginal options for hysteropexy to treat POP and their comparative effectiveness/ perioperative outcomes
- Review the surgical approach to transvaginal hysteropexy
- Summarize possible complications associated with hysteropexy

Indications for Uterine Conservation

•Cross-sectional studies have shown 36–60% of women with symptomatic prolapse would decline hysterectomy for prolapse repair if given an equally efficacious uterine preserving technique.
•Denmark: 2010-2016 Huge shift from TVH to Uterine sparing procedures: if high level specialty 90% became uterine conserving, if moderately specialized 40% Hysteropexy

- Reasons for preserving uterus
  - •desire for future fertility
  - •belief that the uterus may affect sexual function
  - •Uterus relates to sense of identity
  - •Desire to avoid surgical risks of hysterectomy itself (decreased op time, ebl etc)
  - •Uterus is an innocent bystander in prolapse and may not be necessary to apical support

Contraindications for Uterine Conservation

•Cancer risk (uterine, ovarian, or cervical)
  - •Review w patient lifetime risk of cervical (0.6%), uterine (2.7%), and ovarian (1.4%) and need for continued screening
  - •Lynch syndrome and BRCA 1 or 2. personal history of ER+ breast cancer consider hyst with BSO
  - •Obesity (relative contraindication)

• PMB: even with negative workup given 13% risk of unanticipated endometrial cancer or despite neg biopsy
• Cervical elongation (relative contraindication)
  - • Up to 11 Fold increase in failure w sshp for cervical elongation
  - • Partial trachelectomy has improved this success rates up to 96–99%

Pros and Cons to Uterine Conservation

Advantages	Disadvantages
Reduction surgical time	Fewer surgical outcome data
Reduction in blood loss	Maintenance of fertility
Maintain fertility	Risk for malignancy (uterine, cervical)
Allows for natural menopause	Continuation of menses
Sexual satisfaction	Need for surveillance of cervix and endometrium
Less invasive procedure	Inability or difficulty accessing cervix or endometrium for surveillance
Faster recovery	Less surgeon experience with prolapse repair and hysteropexy
Decreased risk mesh exposure	
Similar prolapse outcomes	
Patient preference	

Surgical Options for Transvaginal Hysteropexy

- Sacrospinous Hysteropexy
- Uterosacral Hysteropexy
- Lefort Colpocleisis
- Manchester Procedure
- Transvaginal Mesh Hysteropexy

Sacrospinous Hysteropexy

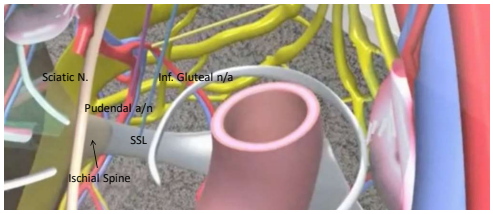
•SSHP is EXTRAPERITONEAL= advantages in pelvic adhesive disease

• Like SSLF, deflects the vagina posteriorly, which *may contribute to* ***anterior vaginal wall*** *prolapse recurrence (despite AR)*.

•Comparable apical success for SSHP v TVH/USLS, shorter hospitalization, quicker return to work

Bradley *Cur Uro Reports* 2018

Anatomic Landmark Review



Complications of SSLF

- Vascular- Massive inaccessible hemorrhage
- Neurologic- BUTTOCK PAIN!!

SSL Hysteropexy Posterior Video

- Transvaginal sacrospinous hysteropexy | SpringerLink (vcu.edu)
- Posterior approach

SSL Hysteropexy Anterior Approach Video

- Native tissue sacrospinous hysteropexy from an anterior approach | SpringerLink (vcu.edu) Matthews
- Petruzzelli
- https://youtu.be/QdgVw4YkJWI - 3 min video

Uterosacral Ligament Hysteropexy

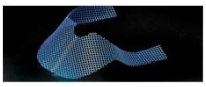
•Laparoscopic, Vaginal or Abdominal Approach
•Large retrospective cohort found no difference in outcomes for apical success (<stage 2) for VUSH (n = 100) and TVH/USLS (n = 100), (96 vs 97%, p = 0.90)
•No difference in anterior or posterior compartment objective outcomes at 24 months
•No RCTs and some conflicting data with other approaches when comparing to TVH/USLS

Romanzi *IUJ* 2012

USLS Hysteropexy video

• 10.1007/s00192-016-3222-2

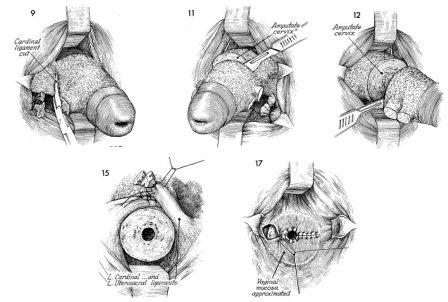
Vaginal Mesh Hysteropexy



•Mesh graft on Anterior Wall and SSL.
•Cochrane review shows level 1 evidence for improved success rates for anterior vaginal wall support with mesh vs without
•Initially 40 vaginal mesh products on the market, Now uphold, self cut or none
•AUGS ACOG and SUFU published guidelines for use and states these procedures can be safe and effective when selecting the right surgical candidate.
• PFDN (SUPeR Trial): (Uphold™) mesh hysteropexy to TVH/ USLS repair n=180, pop failure rates of 37% vs 54%. Mesh exposure (8% vs 0%), granulation tissue after 12 weeks (1% vs 12%), and suture exposure after 12 weeks (3% vs 21%)
• Vaginal mesh hp vs lshp no difference in 1 yr cure, high satisfaction
• mesh exposure 3% lshp and 7% vaginal mesh

The Manchester procedure

•1888 by Dr. Archibald Donald in Manchester England
•Trachelectomy + plication of the cardinal and uterosacral ligaments in the midline
•primarily used for cervical elongation in an era where no antibiotic prophylaxis existed, and rates of postoperative infection were high with total hysterectomy.
•But now has had a resurgence with increased desire for hysteropexy, The Danish study with shift to uterine sparing 75% Manchester 25% SSHP
•MP vs. TVH showed shorter operative times and lower estimated blood loss, no difference in hospital stay, no difference in apical support , no difference in sexual function



Manchester Operation (atlasofpelvicsurgery.org)

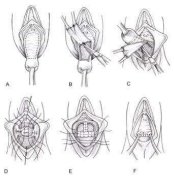
Manchester Procedure

• https://static-content-springer-com.proxy.library.vcu.edu/esm/art%3A10.1007%2Fs00192-017-3284-9/MediaObjects/192_2017_3284_MOESM1_ESM.mp4
• IMBED VIDEO HERE

Obliterative Repair: Lefort Colpocleisis

- Frail, Elderly, Medically Complex, Advanced Prolapse, Does not desire future vaginal intercourse
- High Satisfaction >90%
- Low complication Rate
- Improved body Image, low regret
- shorter operative time, lower blood loss, and similar anatomic success with LeFort vs TVH w total colpocleisis





Hill et al *Am J Obstet Gynecol* 2016
Crisp et al. *Am J Obstet Gynecol 2013*
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Adam et al http://emedicine.medscape.com/article/268258

Risks for Recurrences

- TVH/USLS vs SSHP: BMI, smoking **POPQ Ba** at 5 years post treatment (composite outcomes of anatomy beyond hymen, bothersome bulge, repeat surgery or pessary)
- TVH was a risk factor for *posterior compartment* recurrence when compared with sacrospinous hysteropexy (93 events in 40 women; odds ratio, 5.21; 95% confidence interval, 2.05-13.27; P<.01).

Schulten *AJOG* 2022

Comparative Effectiveness between options

- There are no RCTs comparing hysteropexy procedures to date.

RETROSPECTIVE DATA:

- SSHP vs MP vs TVH: The 5-year reoperation rates were 30%, 7% and 11%(Husby IUJ 2019)
  - BUT Metanalysis of SSHP vs tvh usls not different
- USH vs TVH USLS similar cure
- SSHP vs. TVH USLS similar cure
- Stage 4 POP higher recurrence with SSHP

•The largest retrospective study: 240 HP: vaginal mesh (n = 61), LSHP (n = 43), RASHP (n = 27), ASHP (n = 15), and native tissue VHP (n = 99). POP recurrence (>stage 1 and bulge symptoms) 12% not different between groups

- No differences in vaginal native tissue vs vaginal mesh (12 vs 10%, p = 0.71) or laparoscopic non-mesh versus mesh repairs (10 vs 23%, p = 0.07). Mesh exposure similar vag. Vs. l/s (2 vs 2.4%)

•Only prospective study comparing two HP: LSHP vs Vaginal Mesh HP: same cure, vaginal mesh exposure higher 7% vs 3%

Future Fertility

- Case series: 8 women prior SSHP conception 16 months after pop surgery, Delivered by C/s, only 1/8 preterm (due to twins), 87.5% (7/8) were satisfied w POP outcomes and sexual function at F/u (median 45months postpartum)
- Manchester has a higher risk of miscarriage and preterm birth.
- If desire future fertility, prefer no mesh, and USH or SSHP
- Limited data regarding the route of delivery in those with a prior hysteropexy, there are no recommendations that C/S is protective but most do

Cavkaytar Eur J Obs Gynecol Reprod Biol 2017

TAKE HOMES

- Vaginal native tissue uterine conservation POP surgery is safe and effective can be as effective as TVH/USLS
- Great for those desiring future fertility, or personal preference for identity or decreased operative risk
- Not for people with high risk for cancer (genetic, obesity, or PMB)
- Consider alternatives for cervical elongation, Stage 4 pop or Advanced
- Sexual function is improved in all and not different between procedures
- Fertility is possible and likely delivery via C/S
- Can consider Mesh in right candidate with right counseling

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Laparoscopic Uterine Conservation

Soorena Fatehchehr, MD, MSc, FACOG

Female Pelvic Medicine and Reconstructive Surgery (Urogynecology)
Advanced Minimally Invasive and Robotic Surgery
Vice Chair Urogynecology/ Vaginal Surgery Sig- AAGL
Assistant Clinical Professor- UCLA
Associate Clinical Faculty- Kern Medical
Assistant Clinical Professor- Western University

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Disclosure

- "**I have no financial relationships to disclose**"

Objectives

- Indications
- Comparing recent data with standard

Pre op considerations

- Similar indications and out comes
- Future pregnancy
- No Uterine or Cervical pathology

Advantages (1,2)

- Operating time ↓
- Blood loss ↓
- Low complication rates
- Similar success
- Excellent patient's satisfaction and quality of life
- Safe

Laparoscopic Hysteropexy

- Laparoscopic Sacrospious hysteropexy
- Laparoscopic Uterosacral hysteropexy
- Laparoscopic Sacrohysteropexy
- Other

Laparoscopic hysteropexy: 10 years experience (3)

- All hysteropexy 2006-2016
- 507 women
- Complications were rare (1.8%) with no evidence mesh exposure
- Mean operating time 62.5 min and median length of stay 2 nights

Laparoscopic hysteropexy: 10 years experience (3)

- In 17 patients (3.4%), hysteropexy was abandoned
- There was a mean change in point C of 7.9 cm
- 93.8% felt their prolapse was "very much" or "much" better. 2.8% had repeat apical surgery

Clinical outcomes in women undergoing laparoscopic hysteropexy: A systematic review (4)

- 770 patients in 17 studies received the intervention being studied (laparoscopic hysteropexy) with success rates of 85.32% (95%CI: ±2.5)
- Laparoscopic suture hysteropexy success of 70.5% (95%CI:±5.33) VS 92% (95%CI: ±2.53) suspension to the sacral promontory using mesh or tape
- One small study on suspension to the anterior abdominal wall (28 cases) and one to the pectineal ligament (18 cases) have shown 96.4% (95%CI:±6.9) and 94.5% (95%CI:±10.53) objective success rates respectively

Comparison between laparoscopic sacrocolpopexy with hysterectomy and hysteropexy in advanced urogenital prolapse (5)

- Single site
- Between 2012 and 2016, a total of 136 patients with POP were included (82 LSC with hysterectomy & 54 hysteropexy)
- Median follow-up 65.3 months (36-84 months)
- Improvements in the anatomical and functional outcomes of both groups without differences between the two approaches.
- The apical success rate was 100% in all women, without recurrence in either group; the anterior and posterior success rates of hysterectomy were higher than those of uterine preservation.

Vaginal and laparoscopic mesh hysteropexy for uterovaginal prolapse: a parallel cohort study (6)

- 74 laparoscopic sacral hysteropexy and 76 vaginal mesh hysteropexy procedures from July 2011 through May 2014
- Laparoscopic patients were younger (P < .001), had lower parity (P = .006), were more likely premenopausal (P = .008), and had more severe prolapse (P = .02)
- Laparoscopic procedure (174 vs 64 minutes, P < .0001) and total operating time (239 vs 112 minutes, P < .0001) were longer
- There were no differences in blood loss, complications, and hospital stay

Vaginal and laparoscopic mesh hysteropexy for uterovaginal prolapse: a parallel cohort study (6)

- One-year outcomes: 83% laparoscopic and 80% vaginal hysteropexy
- No differences in anatomic (77% vs 80%; OR, 0.48; P = .20), symptomatic (90% vs 95%;OR, 0.40; P = .22), or composite (72% vs 74%; OR, 0.58; P = .27) cure
- Mesh exposures 2.7% laparoscopic vs 6.6% vaginal hysteropexy (P = .44)
- A total of 95% of each group were very much better or much better. Pelvic floor symptom and sexual function scores improved for both groups with no difference between groups
- .

Hysteropexy in the treatment of uterine prolapse stage 2 or higher: laparoscopic sacrohysteropexy versus sacrospinous hysteropexy–a multicenter randomized controlled trial (LAVA trial) (7)

- Multicenter randomized controlled, non-blinded non-inferiority trial
- 126 women with uterine prolapse stage 2 or higher undergoing surgery without previous pelvic floor surgery
- Laparoscopic sacrohysteropexy was non-inferior for surgical failure (n = 1, 1.6%) compared with SSHP (n = 2, 3.3%, difference -1.7%, 95% CI: -7.1 to 3.7) 12 months postoperatively

Hysteropexy in the treatment of uterine prolapse stage 2 or higher: laparoscopic sacrohysteropexy versus sacrospinous hysteropexy–a multicenter randomized controlled trial (LAVA trial) (7)

- No anatomical recurrences and quality of life difference
- More bothersome symptoms of overactive bladder (OAB) and fecal incontinence were reported after LSH
- Dyspareunia was more frequently reported after SSHP

Pregnancy following laparoscopic hysteropexy-a case series (8)

- All patients had successful pregnancy outcomes with birth weights on or above the 10th centile
- There was no effect on mesh integrity seen in any of the cases
- There was no deterioration in apical prolapse when assessed post delivery, two patients had new onset anterior vaginal wall prolapse.

Spotlight On: Urogynecology SIG
New Scope

- Sacrohysteropexy with Anterior and Posterior Attachment. Andre Plair,MDCatherine A Matthews,MD, https://bit.ly/3pv0EaU

Videos

- Failed Mesh Sacral Colpopexy Resulting in Recurrent Uterine Prolapse Treated Successfully with Laparoscopic Sacral Colpohysteropexy, John R Miklos,MDRobert D Moore,DOOrawee Chinthakanan,MD https://bit.ly/3R7fPTK
- Laparoscopic Sacrospinous Ligament Hysteropexy, Samantha Haikal,DORayan A Elkattah,MD https://bit.ly/3CBdpIX
- Cerclage Sacrohysteropexy, Peter L Rosenblatt,MD, https://bit.ly/3CENLmr

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3. Laparoscopic hysteropexy: 10 years experience Int Urogynecol J. 2017 Aug;28(8):1241-1248. doi: 10.1007/s00192-016-3257-4. Epub 2017 Jan 18
4. Clinical outcomes in women undergoing laparoscopic hysteropexy: A systematic review Eur J Obstet Gynecol Reprod Biol. 2017 Jan;208:71-80
5. Comparison between laparoscopic sacrocolpopexy with hysterectomy and hysteropexy in advanced urogenital prolapse Int Urogynecol J 2020 Oct;31(10):2069-2074. doi: 10.1007/s00192-020-04260-1. Epub 2020 Mar 5
6. Vaginal and laparoscopic mesh hysteropexy for uterovaginal prolapse: a parallel cohort study Am J Obstet Gynecol. 2017 Jan;216(1):38.e1-38.e11.
7. Hysteropexy in the treatment of uterine prolapse stage 2 or higher: laparoscopic sacrohysteropexy versus sacrospinous hysteropexy-a multicentre randomised controlled trial (LAVA trial). 2020 Sep;127(10):1284-1293. doi: 10.1111/1471-0528.16242. Epub 2020 May 10
8. Pregnancy following laparoscopic hysteropexy-a case series. Gynecol Surg. 2017;14(1):16. doi: 10.1186/s10397-017-1017-1. Epub 2017 Aug 17.


Questions?
AAGL 2022
51st GLOBAL CONGRESS ON MIGS
December 1–4, 2022 | Aurora, CO | congress.aagl.org
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vNOTES: Combining the Best of MIS

Amy Park, MD
Section Head, Urogynecology
OB/GYN & Women's Health Institute
Cleveland Clinic

Cleveland Clinic

Disclosures

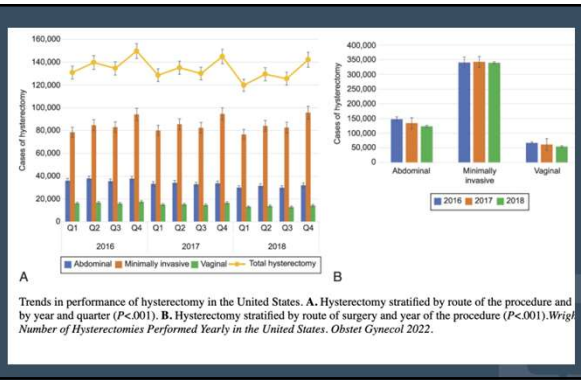
- UptoDate: royalties
- Allergan: speaker

Objectives

- To review indications for vNOTES
- To review vNOTES techniques

Why vNOTES?

- Declining hysterectomy rates
- Extol advantages of TVH
- Consider vNOTES as an enabling technology



Trends in performance of hysterectomy in the United States. **A.** Hysterectomy stratified by route of the procedure and by year and quarter ($P<.001$). **B.** Hysterectomy stratified by route of surgery and year of the procedure ($P<.001$). *Wright Number of Hysterectomies Performed Yearly in the United States. Obstet Gynecol 2022.*

Decline in hysterectomy rates

- Medical therapies for gynecologic diseases
- More uterine-preserving therapeutic options
- Changing patient attitudes toward hysterectomy

Advantages of TVH

- **Lowest** Perioperative morbidity
- **Lowest** resource use…when performed by **high-volume vaginal surgeons.**

Rogo-Gupta, LJ et a1 Obstetrics & Gynecology:December 2010

ACOG Committee Opinion 701 (2021): Route of Hysterectomy

Recommendations and Conclusions

The American College of Obstetricians and Gynecologists makes the following conclusions and recommendations:

- Vaginal hysterectomy is the approach of choice whenever feasible. Evidence demonstrates that it is associated with better outcomes when compared with other approaches to hysterectomy.
- Laparoscopic hysterectomy is a preferable alternative to open abdominal hysterectomy for those patients in whom a vaginal hysterectomy is not indicated or feasible.

8

ACGME Minimal Procedural Requirements

Procedure	Minimal Number
Vaginal Delivery	200
Cesarean Section	145
Total Hysterectomy	85
Abdominal	15
Vaginal	15
Laparoscopic	15
Minimally invasive (vaginal, laparoscopic, robotic)	70

Surgical exposure in residency may not approach proficiency

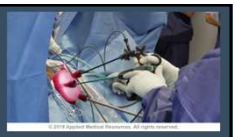
9

Training in residency

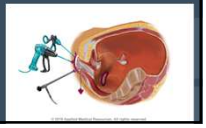
- ACGME suggests **27 TVH required for competency**
- **National average 19 TVH**
- 2011 survey residents less comfortable with TVH than TLH
- 2011 survey only 27.8% of residents comfortable with TVH
- 2015 survey of PD's: 20% FPMRS fellows could perform TVH

Jelovsek JE et al AJOG 2010; Antosh D et al FPMRS 2011;Guntupalli S et al Obstet Gynecol 2015

Why vNOTES



- Enabling Technology
- Combine benefits of vaginal surgery with laparoscopy
- **--improved visualization**
- **--Vessel sealing**
- **--improved ergonomics and musculoskeletal strain**



Goals

- Convert laparoscopic cases to vNOTES
- Convert uterosacral ligament suspensions to vNOTES
- Ergonomics
- Dissemination
- Research
- Innovation

Month Day, Year

12

vNOTES expands the
minimally invasive surgical repertoire

- Salpingectomies, adnexal surgeries
- vaginal laparoscopic entry into peritoneal cavity in the difficult surgical abdomen
- vaginal morcellation of large uteri after TLH
- drainage of pelvic abscess vaginally

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Every life deserves world class care.

CULTURAL AND LINGUISTIC COMPETENCY & IMPLICIT BIAS

The California Medical Association (CMA) announced new standards for Cultural Linguistic Competency and Implicit Bias in CME. The goal of the standards is to support the role of accredited CME in advancing diversity, health equity, and inclusion in healthcare. These standards are relevant to ACCME-accredited, CMA-accredited, and jointly accredited providers located in California. AAGL is ACCME-accredited and headquartered in California.

CMA developed the standards in response to California legislation (Business and Professions (B&P) Code Section 2190.1), which directs CMA to draft a set of standards for the inclusion of cultural and linguistic competency (CLC) and implicit bias (IB) in accredited CME.

The standards are intended to support CME providers in meeting the expectations of the legislation. CME provider organizations physically located in California and accredited by CMA CME or ACCME, as well as jointly accredited providers whose target audience includes physicians, are expected to meet these expectations beginning January 1, 2022. AAGL has been proactively adopting processes that meet and often exceed the required expectations of the legislation.

CMA CME offers a variety of resources and tools to help providers meet the standards and successfully incorporate CLC & IB into their CME activities, including FAQ, definitions, a planning worksheet, and best practices. These resources are available on the CLC and IB standards page on the CMA website.

Important Definitions:

Cultural and Linguistic Competency (CLC) – The ability and readiness of health care providers and organizations to humbly and respectfully demonstrate, effectively communicate, and tailor delivery of care to patients with diverse values, beliefs, identities and behaviors, in order to meet social, cultural and linguistic needs as they relate to patient health.

Implicit Bias (IB) – The attitudes, stereotypes and feelings, either positive or negative, that affect our understanding, actions and decisions without conscious knowledge or control. Implicit bias is a universal phenomenon. When negative, implicit bias often contributes to unequal treatment and disparities in diagnosis, treatment decisions, levels of care and health care outcomes of people based on race, ethnicity, gender identity, sexual orientation, age, disability and other characteristics.

Diversity – Having many different forms, types or ideas; showing variety. Demographic diversity can mean a group composed of people of different genders, races/ethnicities, cultures, religions, physical abilities, sexual orientations or preferences, ages, etc.

Direct links to AB1195 (CLC), AB241 (IB), and the B&P Code 2190.1:

Bill Text – AB-1195 Continuing education: cultural and linguistic competency.
Bill Text – AB-241 Implicit bias: continuing education: requirements.
Business and Professions (B&P) Code Section 2190.1

CLC & IB Online Resources:

Diversity-Wheel-as-used-at-Johns-Hopkins-University-12.png (850×839) (researchgate.net)
Cultural Competence In Health and Human Services | NPIN (cdc.gov)
Cultural Competency – The Office of Minority Health (hhs.gov)
Implicit Bias, Microaggressions, and Stereotypes Resources | NEA
Unconscious Bias Resources | diversity.ucsf.edu
Act, Communicating, Implicit Bias (racialequitytools.org)
https://kirwaninstitute.osu.edu/implicit-bias-training
https://www.uptodate.com/contents/racial-and-ethnic-disparities-in-obstetric-and-gynecologic-care-and-role-of-implicitbiases
https://www.contemporaryobgyn.net/view/overcoming-racism-and-unconscious-bias-in-ob-gyn
https://pubmed.ncbi.nlm.nih.gov/34016820/