AGL 2022

51st GLOBAL CONGRESS ON MIGS

December 1–4, 2022 | Gaylord Rockies Resort and Convention Center | Aurora, Colorado

SYLLABUS

ENDO-604: Building Excellence in Patient Centered Endometriosis Management

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Table of Contents

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ENDO-604: Building Excellence in Patient Centered Endometriosis Management

Chair: *Cindy M. Mosbrucker, MD, Jeff T. Arrington, MD*

Faculty: *Maria Victoria Vargas, MD, MSc, Andrea Vidali, MD*

Course Description

This session will present a structured approach to the diagnosis and surgical treatment for stage III-IV and deeply infiltrative endometriosis. The course will be led by experienced endometriosis surgeons who will present pearls and techniques that can be used by surgeons of all levels. The course will take a holistic approach, presenting discussions and videos when appropriate on preoperative patient evaluation, counseling, surgical technique, post-operative management, multidisciplinary teams, and the approach to pain that is refractory to surgery.

Learning Objectives

At the conclusion of this course, the participant will be able to: 1) Implement preoperative diagnostic strategies for advanced and deeply infiltrative endometriosis; 2) Integrate strategies for patient centered counseling and appropriate case selection; and 3) Employ the components necessary to build a holistic multidisciplinary team.

Course Outline

7:00 am	Welcome, Introduction and Course Overview	C.M. Mosbrucker/ J.T. Arrington
7:05 am	A Standardized Approach to the Office Evaluation of the Endometriosis/Pelvic Pain Patient, Focusing on Clues in the History, Exam, Office, Ultrasound and Patient Centered Counseling	J.T. Arrington
7:30 am	Endometriosis Related Infertility and the Surgical Approach to Endometriosis	A. Vidali
7:55 am	A Standardized Approach to the Pelvic Sidewall and Rectovaginal Septum	C.M. Mosbrucker
8:20 am	The Systematic Survey of the Abdomen and Pelvis, Correlating Disease Appearance with Pathology and Recording Your Findings with the AAGL Staging App	M.V. Vargas
8:45 am	Case Presentation and Panel Discussion on Recurrent Pelvic Pain After Excision	All Faculty
9:10 am	Questions & Answers	All Faculty
9:30 am	Adjourn	

A Standardized Approach To The Office Evaluation Of The Endometriosis/Pelvic Pain Patient, Focusing On Clues In The History, Exam, Office, Ultrasound And Patient Centered Counseling / Speaker's Corner -Avoid the Peek and Shriek-

Jeff Arrington, MD, FACOG
Center for Endometriosis Care
Vice-Chair AAGL Endometriosis SIG

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Disclosure

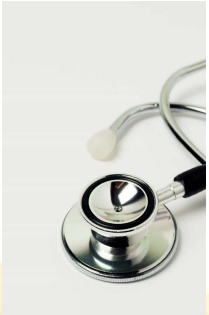
"**I have no financial relationships to disclose**"

Objectives

- Ascertain important aspects of endometriosis in patient history
- Apply pertinent history to the physical examination
- Determine appropriate adjunct studies
- Utilize history, exam, and studies to educate the patient and allow an informed decision

Patient History

Past and Present Symptoms – include searching questions
Past treatments and Therapies and response
Current expectations and goals of diagnosis and treatment
(must include searching questions regarding the whole patient: pain, fertility, relationships, life goals)



Physical Exam

Guided by history

- Must be a focused exam – cannot be cursory "annual" pelvic exam
- Focus on pain or abnormality at each stage of the pelvic exam
  - Introitus, left &right obturator internus and levator muscles
  - Posterior fornix – smooth, tethering, nodular
    - Use speculum to look behind cervix if concern for nodular thickness
  - Uterus and Adnexae
  - Rectovaginal exam if warranted by history or vaginal exam findings
  - Pararectal tissue
  - Abdominal incision
  - Neuromuscular
- Do the exam. Note what normal feels like to detect differences, then correlate with operative findings

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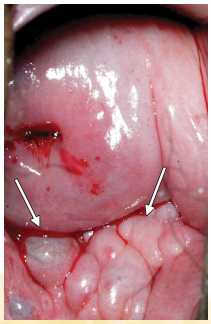


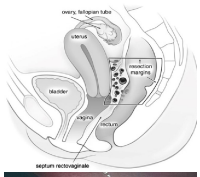
Full Thickness Vaginal Endo

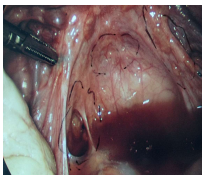
- Feel behind cervix – nodules, tethering on sweep.
- Anything concerning findings on bimanual should be visualized with a speculum exam
- Speculum placed to elevate the cervix and see the posterior fornix
- Consider biopsy to confirm diagnosis – with appropriate history, endometriosis is most likely diagnosis

6

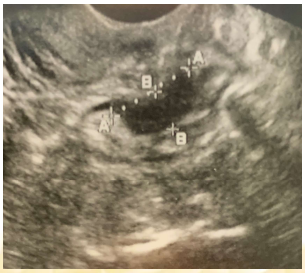
Rectovaginal Exam

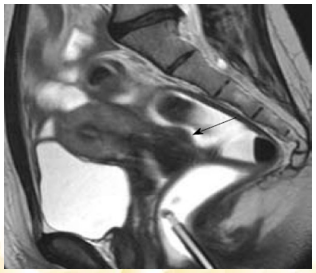
- 65% of Intestinal endometriosis is rectosigmoid – Ferrero S, et al
- Able to be reached with rectovaginal exam
- Within range of transvaginal ultrasound
- Pararectal disease
  - Normal v. abnormal





IMAGING





Ferrero S, et al

Imaging necessary?

- What concerns arise from history and/or physical exam
- What is the most appropriate study?
- What studies are available?
- Who will read the study?
- Will it give pertinent information for informed consent?
- Will it alter the plan?

Ultrasound

- UBESS – Ultrasound Based Endometriosis Scoring System
  - Endometriosis focused
    - Bladder
    - Ovaries
    - Uterosacral ligaments
    - RV septum/vagina
    - Rectosigmoid colon
  - Can it be done in office?
    - https://www.youtube.com/watch?v=8PLR0q5TYUA
    - Just start!
      - Note findings and correlate with exam and operative findings

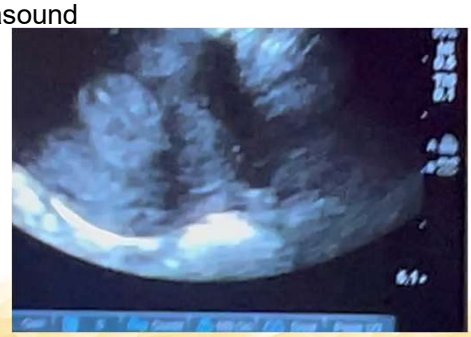
Menakay, et al

Distribution of severity of endometriosis as per ultrasound and surgical ASRM staging

	Ultrasound Stage		Surgical ASRM stage	
	n	%	n	%
Stage 1	115	56.4	24	11.8
Stage 2	11	5.4	22	10.8
Stage 3	25	12.3	16	7.8
Stage 4	28	13.7	32	15.7

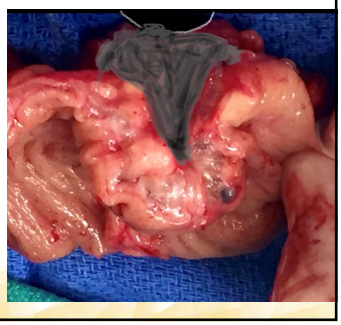
Tompsett J, et al

Ultrasound

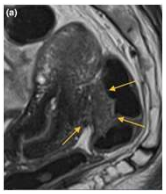


Ultrasound

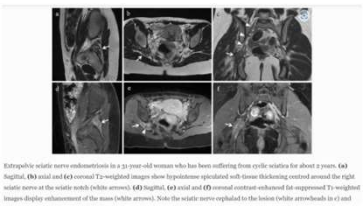
Ultrasound



MRI



Thalluri, et al



Extrapelvic sciatic nerve endometriosis in a 31-year-old woman who has been suffering from cyclic sciatica for about 2 years. **(a)** Sagittal, **(b)** axial and **(c)** coronal T2-weighted images show hypointense spiculated soft-tissue thickening centred around the right sciatic nerve at the sciatic notch (white arrows). **(d)** Sagittal, **(e)** axial and **(f)** coronal contrast-enhanced fat-suppressed T_1-weighted images display enhancement of the mass (white arrows). Note the sciatic nerve cephalad to the lesion (white arrowheads in c) and

Foti, P.V, et al

MRI imaging for prediction of extension of endometriosis

n = 195

Location	Sensitivity	Specificity	+ Predictive	- Predictive	Accuracy
USL	76%	83.3%			80.5%
Vagina	76%	95.4%			93.3%
RV Septum	80%	97.8%			96.9%
Rectosigmoid	88%	97.8%			94.9%
Overall	90.3%	91%	92.1%	89%	90.8%

Bazot M, et al

16

✓History Exam Imaging
What's Left???

Discuss pertinent history
Discuss patient specific concerns and goals
Discuss physical exam and imaging findings
Discuss management options

What is Informed Consent

- A process of communication that enables the patient to make an informed and voluntary decision about accepting or declining medical care (ACOG – 2015)

Principles of Informed Consent

- Ethical Requirement
- Expresses Respect for the Patient as a Person
- Protects the Patient
- Provides Opportunity for Active Involvement
- Mutual Sharing of Information that Facilitates the Patient's Autonomy
- Comprehension and Free Consent = Self Determination

Consent is Freedom from:

- Coercion
- Manipulation
- Infringement of Bodily Integrity
- Being Acted on by Others Without Respecting the Individual's Own Preference and Choice

- Medical Recommendations may be given when they are not coercive or deceptive.

Provider Ethical Responsibilities

- Accuracy governed by the ethical requirement of truth-telling
- Common practice. ie "Standard of Care"
- Needs and expectations of an ordinary individual
- Unique needs of and Individual Patient

Provider Requirements and Limitations

- Obligation to **be current in their own knowledge** about treatments and the disease processes
- Make clear that continued medical care is not contingent on making the choice the physician prefers (limited exceptions)

- Providers also have free choice and may decline care they deem medically inappropriate or ethically objectionable
- Conscientious refusal: provider must still provide the patient with **accurate and unbiased information** about medical options and make **appropriate referrals**.

References

- Ferrero S, et al, Epidemiology of Bowel Endometriosis in: Ferrero S, Ceccaroni M (eds) Clinical Management of Bowel Endometriosis. Spinger, pp 13-22
- Menakay S, et al. Performance of Ultrasound Based Endometriosis Staging System (UBESS) for Predicting Level of Complexity of Laparoscopic Surgery for Endometriosis. Ultrasound Obstet Gynecol, 2016 Dec;48(6):786-795
- Tompsett J, et al, Ultrasound-Based Endometriosis Staging System Validation Study to Predict Complexity of Laparoscopic Surgery. J Minim Invasive Gynecol. 2019 Mar-Apr;26(3):477-483
- Thalluri A, et al. MRI Findings in Deep Infiltrating Endometriosis: A Pictorial Essay. J Med Imaging Radiat Oncol. 2017 Dec;61(6):767-773
- Bazot M, et al. Deep Pelvic Endometriosis: MR Imaging for Diagnosis and Prediction of Extension of Disease. Radiology. 2004 Aug;232(2):379-389
- Informed Consent and Shared Decision Making in Obstetrics and Gynecology. American College of Obstetrics and Gynecology. Committee Opinion Number 819. 2021 Feb

ENDOMETRIOSIS RELATED INFERTILITY AND SURGICAL APPROACH TO ENDOMETRIOMA

Andrea Vidali MD

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The great endometriosis dilemma

- Standard treatments aimed at eradication of endometriotic lesions have been adopted largely on the basis of uncontrolled studies.
  - *Vercellini et al. Human Reproduction, Vol.24, No.2 pp. 254–269, 2009*
- Clinical care is sometimes in contrast with the current evidence from the reproductive literature.
- Managing endometriosis and infertility requires a balancing act.
- It is important to inform and educate patients.

Disclosure

- Stockholder: Pregmune llc. . WWW.pregmune.com

DOES ENDOMETRIOSIS CAUSE INFERTILITY?

Endometriosis role in infertility

- If we consider advanced endometriosis with anatomical impairment the answer is very simple.
- Most of the scientific debate is on alternative causative effects beyond anatomical
- Role of pain : For a successful natural conception, the feasibility of sexual intercourse is an important prerequisite, and one that is often neglected

Nurses Health Study

- Nurses Health Study (58 427 married premenopausal female) 2-fold increased risk of incident infertility (HR = 2.12, 95% CI = 1.76–2.56). This was true only for age <35
  - Among women with primary infertility, 50% became parous after the endometriosis diagnosis, and among all women with endometriosis, 83% were parous by age 40 years
  - J. Prescott et Al. , A prospective cohort study of endometriosis and subsequent risk of infertility, *Human Reproduction*, Volume 31, Issue 7, July 2016, Pages 1475–1482, https://doi.org/10.1093/humrep/dew085
- Focus on ovarian reserve?

laparoscopically confirmed endometriosis was associated with a 50% greater risk for ENM (hazard ratio [HR], 1.51; 95% CI, 1.30-1.74)

Multivariable-Adjusted Associations of Laparoscopically Confirmed Endometriosis With Early Natural Menopause[a]

Laparoscopically confirmed endometriosis	Early natural menopause cases/person-years	Hazard ratio (95% CI)		
		Model 1	Model 2	Model 3
Without	2345/1 508 462	1 [Reference]	1 [Reference]	1 [Reference]
With	197/79 290	1.51 (1.30-1.74)	1.46 (1.26-1.69)	1.28 (1.10-1.48)

[a] Each model is described in the Methods section.

Thombre Kulkarni M, Shafrir A, Farland LV, Terry KL, Whitcomb BW, Eliassen AH, et al. Association between laparoscopically confirmed endometriosis and risk of early natural menopause. *JAMA Netw Open* (2022) 5:e2144391. doi: 10.1001/jamanetworkopen.2021.44391

Endometriosis and Implantation

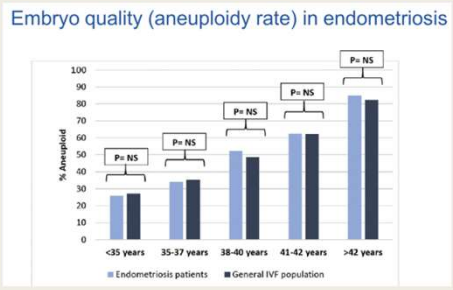
- The quality of endometrial receptivity to embryo implantation in endometriosis is a source of debate.
- Impaired response to the effects of progesterone
  - Aghajanova L. et al. Biol Reprod. 2011;84:801-15
- Altered endometrial response to progesterone results in overexpression of endometrial BCL6
- Reduced integrin and other adhesion molecules expression
  - *FERTIL STERIL JULY 2017 VOLUME 108, ISSUE 1, PAGES 19–27*
- ERA® test – is not altered in case of endometriosis
  Garcia Velasco et al. Reprod Biomed Online. 2015;31:647-54
  Excisional Surgery or Pretreatment with ocp or GnRh agonist in frozen transfer may reset.
  - *Evans-Hoeker E. Reprod Sci. 2016;23:1234-41*

Endometriosis and oocyte donation: Mixed Evidence on Implantation

- In a prospective matched case-control study , IVF outcomes of women with or without endometriosis that received 'siblings' oocytes from the same "healthy" donor were evaluated. Pregnancy, implantation, and miscarriage rates were not affected by moderate/svere endometriosis when compared with the control group .
  - *Díaz I, Navarro J, Blasco L, Simón C, Pellicer A, Remohí J. Impact of stage IIIIV endometriosis on recipients of sibling oocytes: matched case-control study. Fertil Steril. 2000;74:31–4.*
- A separate study arrived at opposite results.
  - *Prapas et al History of endometriosis may adversely affect the outcome in menopausal recipients of sibling oocytes.Reprod Biomed Online. 2012;* ***25****: 543-548*

Endometriosis and Oocyte quality: pathogenesis

- Inflammatory reactions in the pelvic cavity primarily interfere with sperm-oocyte interaction, and thus affect natural conception chances.
- **Dysregulation of steroidogeneis**
  - *Decreasing expression of P450 Aromatase*
  - *Lower estrogen concentration both natural cycle and peak e2 at IVF*
    - Toya M, Saito H, Ohta N, Saito T, Kaneko T, Hirai M. Moderate and severe endometriosis is associated with alterations in the cell cycle of granulosa cells in patients undergoing in vitro fertilization and embryo transfer. Fertil Steril. 2000;73:344–50.
- **Disruption of intrafollicular environment**
  - *Increased follicular Oxidative Stress*
  - *Elevated inflammatory cytokines*
  - *Lower steroid levels*
    - Nagakawa. Et al Arch Gybecol Obstets 2016 293



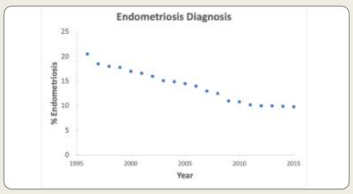
Dominique de Ziegler.,Assisted reproduction in endometriosis,

Best Practice & Research Clinical Endocrinology & Metabolism,Volume 33, Issue 1.2019,Pages 47-59,

HOW SHOULD WE SCREEN FOR ENDOMETRIOSIS?

IVF :ENDOMETRIOSIS IS UNDERDIAGNOSED

- According to SARTstatistics, the prevalence of endometriosis as a diagnosis in women undergoing IVF has steadily declined. This is likely due to a decrease in laparoscopy and greater reliance on IVF as a primary treatment for unexplained infertility. (Source: provided by ART Surveillance and Research Team, CDC, Atlanta, GA)



Non-invasive diagnosis

- We have to face the fact that diagnostic laparoscopy is not the standard of care ART imposes itself as the best first-line therapeutic option.
- Significant progress in both ultrasound and mri diagnosis of endometriosis.
  - Abrão MS, Gonçalves MO, Ajossa S, Melis GB, Guerriero S. The sonographic diagnosis of deep endometriosis. J Ultrasound Med. 2009 Mar;28(3):408-9; author reply 409-10. doi: 10.7863/jum.2009.28.3.408. PMID: 19244083.

How Do we suspect endo in asymptomatic patients if it's not visible? I

- Family history of endometriosis
  - *Risk is 7 times greater in relatives of affected individuals*
- Physiological
  - *Poor egg quality*
  - *Low ovarian reserve relative to age*
  - *Reduced uterine/ovarian blood flow (increased resistance) observed by transvaginal sonography with Doppler flow studies*

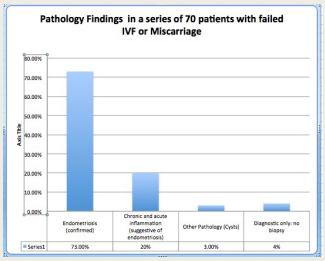
How Do we suspect endo if it's not visible? 2

- Presence of certain autoimmune conditions
  - Hashimoto's thyroiditis
  - Antiphospholipid syndrome
- Endocrine
  - Elevated FSH and low AMH
- Genetic
  - *Presence of HLA haplotypes associated with autoimmune disease*
- Immunological

Non-Invasive Testing For Endometriosis: Receptiva

- aberrant BCL6 expression had a high sensitivity and specificity for the diagnosis of all stages of endometriosis, indicative of BCL6 as a biomarker for endometriosis. In support of this finding, another large cohort study showed a high positive predictive value of BCL6 expression for the diagnosis of endometriosis
- Bcl6 testing: PPV of the ReceptivaDxTM test of 82.3% .
  - *FERTILITY AND STERILITY Vol. 113, No. 4, Supplement, April 2020*
- No evidence that medical or surgical treatment of Endometriosis reduces BCL6 expression.

Is bcl6 testing really necessary? Our Data



HOW SHOULD WE TREAT ENDOMETRIOSIS IN THE CONTEXT OF FERTILITY /IVF?

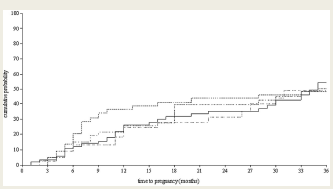
Natural conception: hormonal therapies are NOT effective for infertility associated with endometriosis

- Suppression of ovarian function (by means of hormonal contraceptives, progestagens, GnRH analogues or danazol) to improve fertility in minimal to mild endometriosis is not effective and should not be offered for this indication alone. The published evidence does not comment on more severe disease .
- This indicates that fertility-wise the time spent on medication is simply time lost for fertility, as no fertility rebound occurs upon stopping the medical treatments of endometriosis [
  - *Hughes E, Brown J, Collins JJ, Farquhar C, Fedorkow DM, Vandekerckhove P. Ovulation suppression for endometriosis. Cochrane Database Syst Rev 2007:CD000155.*

Natural conception : Is surgery **is effective** for infertility associated with endometriosis.

- In women with **minimal to mild endometriosis**, the evidence, summarised in a Cochrane review, shows that operative laparoscopy is more effective than diagnostic laparoscopy in improving ongoing pregnancy rates
  - *To day still only 2 randomized studies dating back more than 1 decade*

Figure 1. Cumulative 36-month probability of becoming pregnant by disease stage in 222 infertile women who underwent ...



(, stage I; , stage II; , stage III; , stage IV).

Hum Reprod, Volume 21, Issue 10, 1 October 2006, Pages 2679–2685, https://doi.org/10.1093/humrep/del230

Should endometrioma surgery be performed prior to treatment with ART to improve reproductive outcomes?

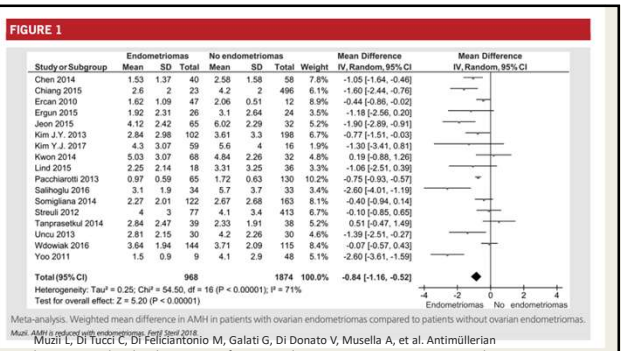
- rapid growth,
- suspicious features noted on ultrasound,
- painful symptoms that can be attributed to the mass,
- Bilaterality of endometriomas
- potential for rupture in pregnancy,
- inability to access follicles in normal ovarian tissue.
- Previous ovarian surgery

Risks of conservative management in women with ovarian endometriomas undergoing IVF

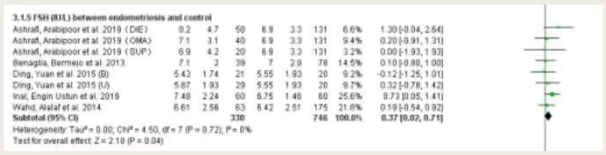
- infection of the endometriomas.
  - prophylactic antibiotics may reduce this risk but cannot abolish it.
  - Estimated risk corresponding to 1.9% (95% CI: 0.3–5.8%).
- higher risk of pregnancy complications:
  - Although the risk of infection after ART is probably low , when it does occur during pregnancy, the outcome may be poor with 25% pregnancies resulting in abortion , preterm delivery or infant death
    - Edelstein S\N. Assisted Reproductive Technology as a Transcutaneous Route for Bacterial Contamination of Ovarian Endometrioma with Coagulase-Negative Staphylococcus: Case Report and Review of the Literature. Infect Dis Obstet Gynecol. 2019 Nov 29;2019:4149587.
- follicular fluid contamination with the endometrioma content.
  - 40% relative reduction in live birth rate due to a complication occurring in 6.1% of cases

Observing the Endometrioma

- serum AMH and AFC were found to be reduced in patients with unoperated endometriomas compared to patients with other benign ovarian cysts without endometriosis
  - Muzii L, Di Tucci C, Di Feliciantonio M, Galati G, Di Donato V, Musella A, et al. Antimüllerian hormone is reduced in the presence of ovarian endometriomas: A systematic review and meta-analysis. *Fertil Steril* (2018) 110:932–40.e1. doi: 10.1016/j.fertnstert.2018.06.025



Muzii L, Di Tucci C, Di Feliciantonio M, Galati G, Di Donato V, Musella A, et al. Antimüllerian hormone is reduced in the presence of ovarian endometriomas: A systematic review and meta-analysis. *Fertil Steril* (2018) 110:932–40.e1. doi: 10.1016/j.fertnstert.2018.06.025



Tian Z, Zhang Y, Zhang C, Wang Y, Zhu HL. Antral follicle count is reduced in the presence of endometriosis: A systematic review and meta-analysis. *Reprod BioMed Online* (2021) 42:237–47. doi: 10.1016/j.rbmo.2020.09.014

Medical treatment before embryo transfer

- Very limited evidence so far.
- Treatment groups were not randomly selected.
- 10 pts Lupron arm, 21 patients surgery arm , 54 controls
- These results yield a relative risk of achieving a live birth rate of 6.9 (95%CI = 2.5 to 18.9; i.e., 16 out of 31 in both treatment groups vs. 4 out of 54 in the no treatment (control group). An absolute benefit of 44.2% (95% CI 24.6 to 61.2) and a number need to treat of 3.
  - Likes CE, Cooper LJ, Efird J, Forstein DA, Miller PB, Savaris R, Lessey BA. Medical or surgical treatment before embryo transfer improves outcomes in women with abnormal endometrial BCL6 expression. J Assist Reprod Genet. 2019 Mar;36(3):483-490. doi: 10.1007/s10815-018-1388-x. Epub 2019 Jan 4. PMID: 30610661; PMCID: PMC6439015.

IVF and progression of Endometriosis

- The available tends to support a possible detrimental effect of IVF on deep infiltrative peritoneal endometriosis.
  - Vercellini P. Risks of conservative management in women with ovarian endometriomas undergoing IVF. Hum Reprod Update. 2015 Jul-Aug;21(4):486-99. doi: 10.1093/humupd/dmv012. Epub 2015 Mar 6. PMID: 25750209.
- Available data tend to exclude a relevant effect of IVF on endometriosis recurrences in general and ovarian endometriomas in particular.
- in contrast to IVF, ovarian hyperstimulation and intrauterine insemination may actually increase the risk of endometrioma recurrence
  - van der Houwen LE, Efficacy and safety of intrauterine insemination in patients with moderate-to-severe endometriosis. Reprod Biomed Online2014b;28:590-598.

Ovarian stimulation and endometriosis progression or recurrence

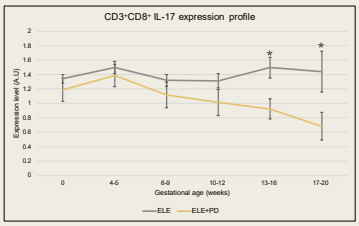
TABLE 3 SUMMARY OF THE EVIDENCE

Main conclusions	Level of the evidence[a]	Main publications
IVF does not worsen endometriosis-related pain symptoms.	Moderate	Jun and Luthi, 2007; Benaglia et al., 2011; Santulli et al., 2016; van der Houwen et al., 2014c
IVF does not increase the risk of recurrence.	Moderate	Benaglia et al., 2010; Coccia et al., 2010; van der Houwen et al., 2014a
The impact of IVF on ovarian endometriomas is mild, if any.	Low	Benaglia et al., 2009, 2011; Seyhan et al., 2017
IUI increases the risk of recurrences.	Low	D'Hooghe et al., 2006; Coccia et al., 2010; van der Houwen et al., 2014b
Deep invasive endometriosis may progress with ovarian stimulation.	Very low	Revaz et al., 1995; Arnal et al., 2010; Halvorson et al., 2012

The conclusions are presented in decreasing order of reliability.
Level of evidence was judged in a semi-quantitative manner based on the literature and common sense.
IUI = intrauterine insemination.
[a] Level of evidence was based on the GRADE guidelines (Balshem et al., 2011).

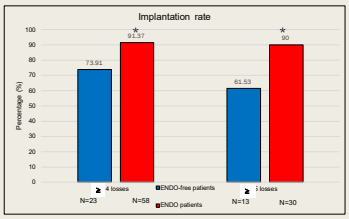
Somigliana 2018

CD3⁺CD8⁺ IL-17 (Tc17) is significantly decreased in pregnancy achieved post wide excision



CD3⁺CD8⁺ IL-17 levels are significantly reduced in pregnancies achieved post PD

Implantation rate comparison between ENDO-free and ENDO patients based on the number of losses prior to our care



Implantation rate is significantly higher in patients with at least 4 losses prior to surgery, for whom endometriosis was found during laparoscopic surgery.

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14. Tian Z, Zhang Y, Zhang C, Wang Y, Zhu HL. Antral follicle count is reduced in the presence of endometriosis: A systematic review and meta-analysis. *ReprodBioMed Online* (2021) 42:237–47. doi: 10.1016/j.rbmo.2020.09.014
15. Likes CE, Cooper LJ, Efird J, Forstein DA, Miller PB, Savaris R, Lessey BA. Medical or surgical treatment before embryo transfer improves outcomes in women with abnormal endometrial BCL6 expression. J Assist Reprod Genet. 2019 Mar;36(3):483-490. doi: 10.1007/s10815-018-1388-x. Epub 2019 Jan 4. PMID: 30610661; PMCID: PMC6439015.
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17. van der Houwen LE, . Efficacy and safety of intrauterine insemination in patients with moderate-to-severe endometriosis Biomed Online2014b;28:590-598.

Acknowledgments

- co-authors full name, highest medical/academic degree and affiliation and/or professional title

Conclusion

- Endometriosis requires Personalized Care
- Commonsense management beyond the guidelines

A Standardized Approach to the Pelvic Sidewall and Rectovaginal Septum

Cindy M Mosbrucker MD

Disclosures

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

Objectives

Understand the surgical anatomy of the pelvis including vessels, nerves, and avascular spaces
Recognize variations in anatomy and be able to adjust accordingly
Demonstrate safe dissection techniques to allow for complete resection of disease

"The Father of Surgery is Anatomy"

"But the Mother of Surgery is Exposure"

Dr. John Mikuta via Dr. Robert Rogers

"You cannot expect your surgical results to be any better than your skills of surgical dissection and tissue handling."

Dr. Robert Rogers

Practical Recommendations

Prior to surgery:

- "The Retroperitoneum is your Friend" – Know your anatomy!
- Watch surgical videos including your own to refine your technique
- Find a Mentor
- Develop strong relationships with a general surgeon and urologist so they are true partners

Have a plan

- Know what to expect via a thorough preop evaluation
- Follow a pattern with your dissections- have a process
- Know your limits – no shame in photo documentation and referral

ESHRE Recommendations

Table II Principles for identifying and treating deep endometriotic lesions.

- Identify all important anatomical structures (ureters, colon, small bowel, major vessels, adnexae, uterus, bladder, nerves).
- Identify the lesions.
- Signs of deep endometriosis include:
  - Fibrosis, with or without characteristic dark spots
  - (Dense) adhesions
  - Distortion of anatomical structures, infiltrations
  - Reduced tissue elasticity
  - Haemorrhagic cystic structures
- Perform easy steps first as this will facilitate difficult ones.
- Divide adhesions and restore pelvic anatomy in addition to complete excision of endometriosis.
- Free and isolate the lesions.
- Start the dissection in areas free of disease.
- Optimise exposure by using manipulators, ovariopexy and additional ports, if necessary.
- Aim for complete excision whenever reasonable and possible.*

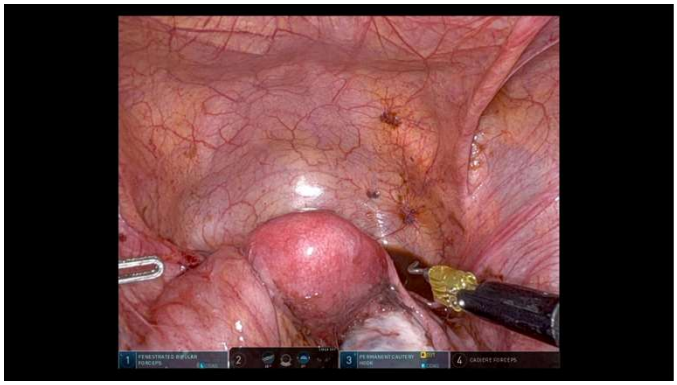
Recommendations for the surgical treatment of endometriosis. Part 2: deep endometriosis.

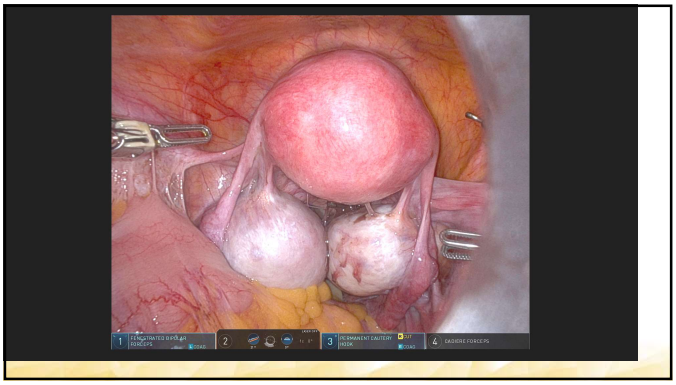
g that a part of the disease may be left behind, the surgeon should remember that if an extensive dissection has been performed to access this part of the disease, be extremely difficult and sometimes almost impossible. If excision is considered to be too risky, it is likely to be even more difficult and dangerous if a reoperation is ecurrent pain or other severe symptoms (such as stenosis of the bowel or ureter). Ideally, surgeons would be prepared to manage all aspects of the disease.

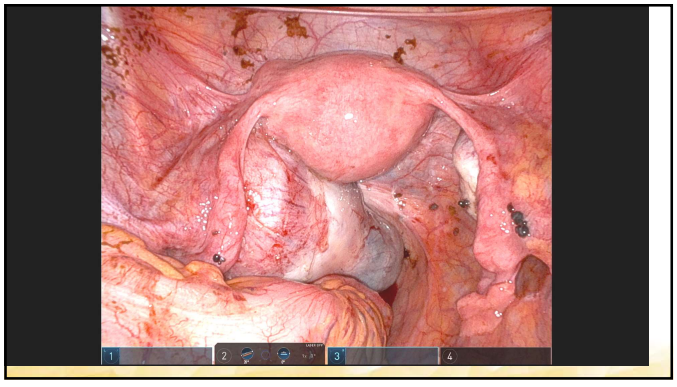
Complete Excision is Required

- Aim for complete excision whenever reasonable and possible.*

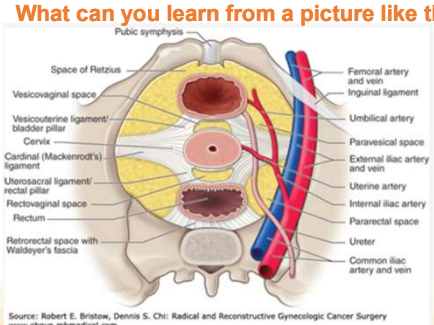
*When deciding that a part of the disease may be left behind, the surgeon should remember that if an extensive dissection has been performed to access this part of the disease, reoperation will be extremely difficult and sometimes almost impossible. If excision is considered to be too risky, it is likely to be even more difficult and dangerous if a reoperation is needed due to recurrent pain or other severe symptoms (such as stenosis of the bowel or ureter). Ideally, surgeons would be prepared to manage all aspects of the disease.



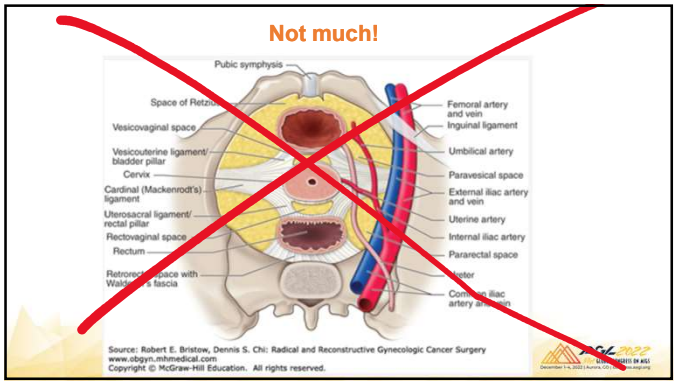




What can you learn from a picture like this?



Source: Robert E. Bristow, Dennis S. Chi: Radical and Reconstructive Gynecologic Cancer Surgery
www.obgyn.mhmedical.com


Not much!
Pubic symphysis
Space of Retzius
Vesicovaginal space
Vesicouterine ligament/ bladder pillar
Cervix
Cardinal (Mackenrodt's) ligament
Uterosacral ligament/ rectal pillar
Rectovaginal space
Rectum
Femoral artery and vein
Inguinal ligament
Umbilical artery
Paravesical space
External iliac artery and vein
Uterine artery
Internal iliac artery
Pararectal space
Ureter
Source: Robert E. Bristow, Dennis S. Chi: Radical and Reconstructive Gynecologic Cancer Surgery
www.obgyn.mhmedical.com
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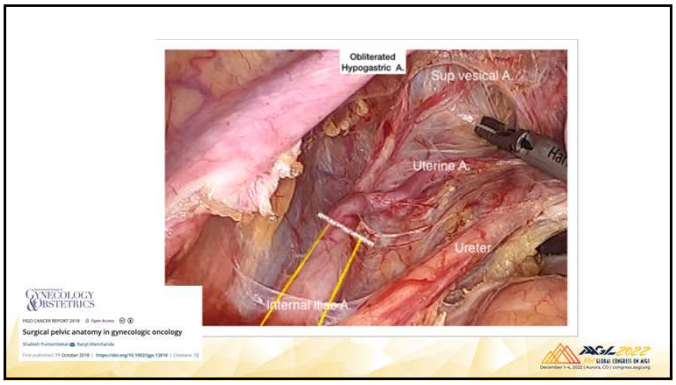
Obliterated Hypogastric A.
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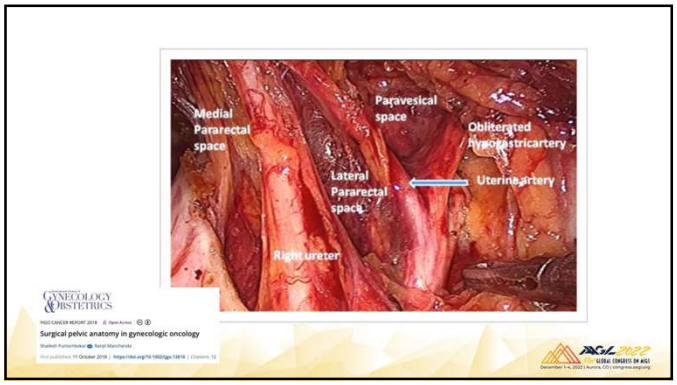
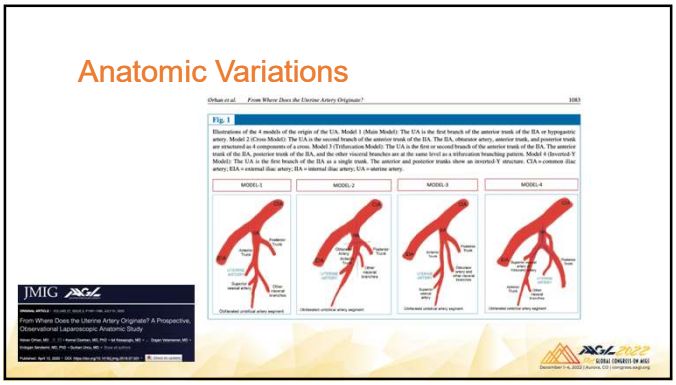
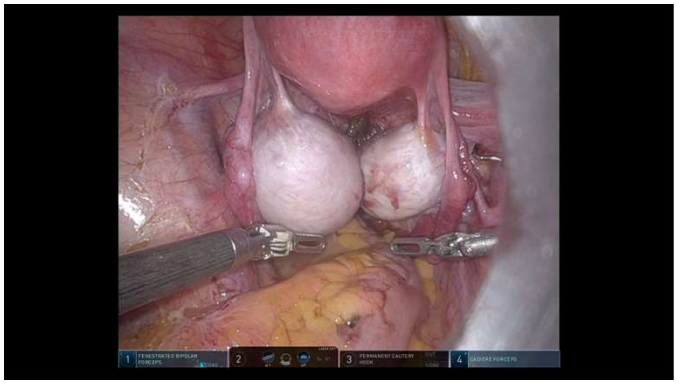
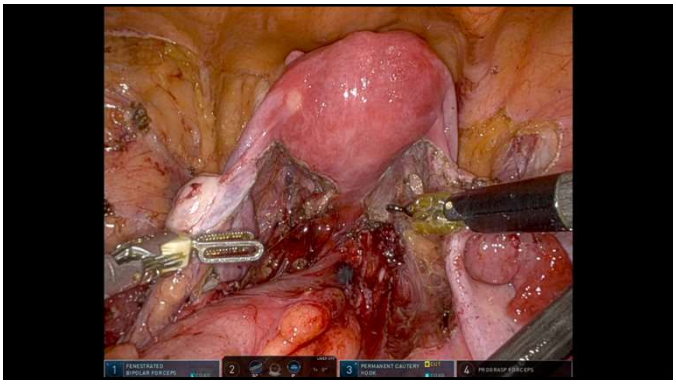
GYNECOLOGY OBSTETRICS
Surgical pelvic anatomy in gynecologic oncology

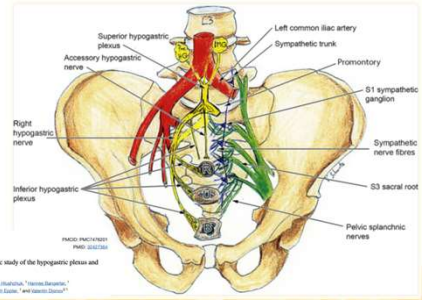

Medial Pararectal space
Paravesical space
Obliterated hypogastricartery
Lateral Pararectal space
Uterine artery
Right ureter
GYNECOLOGY OBSTETRICS
Surgical pelvic anatomy in gynecologic oncology


Anatomic Variations
Fig. 1
MODEL-1
MODEL-2
MODEL-3
MODEL-4
JMIG
From Where Does the Uterine Artery Originate? A Prospective, Observational Laparoscopic Anatomic Study

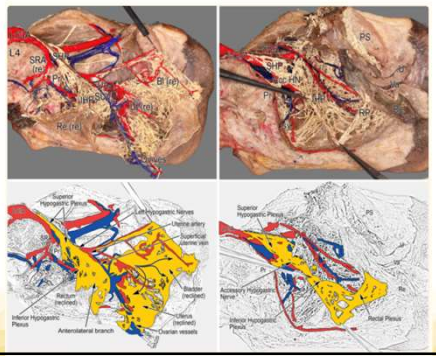


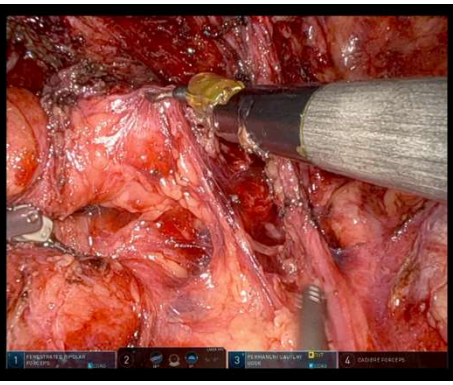


Hypogastric Nerves



Anatomy of the female pelvic nerves: a macroscopic study of the hypogastric plexus and their relations and variations





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The systematic survey of the abdomen and pelvis

Correlating disease appearance with pathology, and recording findings with the AAGL staging app

M. Victoria Vargas, MD, MSc
Assistant Professor OB/GYN
John's Hopkins School of Medicine
Director of MIGS National Capitol Region

Disclosures

I have no financial relationships to disclose.

Objectives

- Understand the rationale behind a thorough abdominal and pelvic survey
- Apply techniques to optimize the survey and identify subtle lesions
- Utilize the AAGL Endometriosis to document stage

Purpose

- Systematic approach to disease identification, you know where to look
- Photo and video documentation
- Guides surgical approach

The upper abdomen

Diaphragm

- Diaphragm is the most common site of extra pelvic disease
- 12% of women with endometriosis
  - 80% of lesions located on the right hemi diaphragm

Extrapelvic Endometriosis: A Systematic Review. Andres, Marina P. et al. Journal of Minimally Invasive Gynecology, Volume 27, Issue 2, 373 - 389

Abdominal exploration

- Diaphragm (bilateral)
- Appendix, cecum and terminal ileum
- Abdominal wall (pelvic brim including sigmoid attachment and round ligament insertions, incisions)
- Sigmoid

The upper abdomen

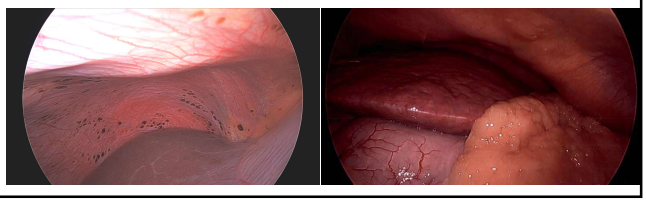
The diaphragm

1. Laparoscopic Excision of Pericardial and Diaphragmatic Endometriosis. Nguyen, Dong B. et al, Fertility and Sterility, https://www.youtube.com/watch?v=OEfd5CSdpuI
2. Considerations for the Surgical Management of Diaphragmatic Endometriosis. Luna Russo, Miguel et al. Journal of Minimally Invasive Gynecology, Volume 28, Issue 7, 1282

The upper abdomen

The diaphragm

- Flat or reverse Trendelenburg position
- Angled laparoscope
- Liver retraction, lysis of adhesions, or mobilization may be needed



Abdominal wall

Primary lesions

- 230 cases of primary parietal endometriosis
  - 133 (58%) groin
  - 82 (36%) umbilical
  - 12 (5%) abdominal wall
  - 2 (<1%) perineal

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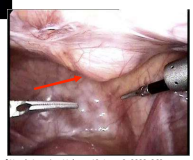
Extrapelvic Endometriosis: A Systematic Review. Andres, Marina P. et al. Journal of Minimally Invasive Gynecology, Volume 27, Issue 2, 373 - 389

Abdominal wall

Secondary lesions

- C-section incision
- Hysterectomy incision
- Laparoscopic port site incision



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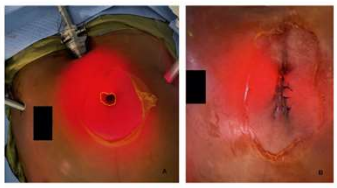
Abdominal wall

Cutaneous lesions

- Transillumination
- Delineates borders



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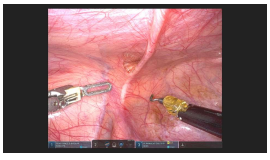
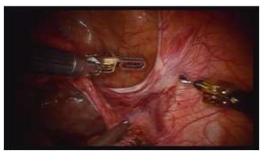
Leon MG, Carrubba AR, Dinh TA. Laparoscopic Transillumination for Extrapelvic Superficial Abdominal Wall Endometriosis. J Minim Invasive Gynecol. 2021 Nov;28(11):1810-1811. doi: 10.1016/j.jmig.2021.07.001. Epub 2021 Jul 5. PMID: 34237463.

Abdominal wall

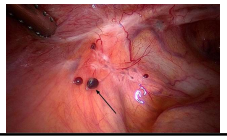
Medial umbilical ligament



Round insertion/Pelvic Brim



Sigmoid physiologic adhesion/left pelvic brim



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Slide 8

VV1 Needs video or picture of liver in Tburg

Victoria Vargas, 10/16/2022

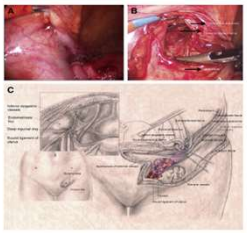
Abdominal Wall

Laparoscopic port site

AAGL 2019 Rectus Muscle Endo. Nicholas Fogelson. Northwest Endometriosis and Pelvic Surgery. https://www.youtube.com/watch?v=mJP2QBO1MMw

Abdominal wall

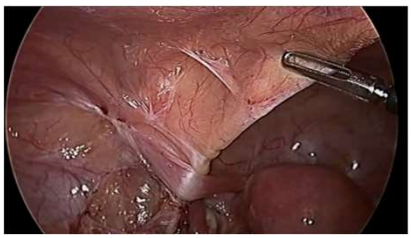
Round ligament and anal of Nook



Wang CJ, Chao AS, Wang TH, Wu CT, Chao A, Lai CH. Challenge in the management of endometriosis in the canal of Nuck. Fertil Steril. 2009 Mar;91(3):936.e9-11. doi: 10.1016/j.fertnstert.2008.07.1713. Epub 2008 Sep 30. PMID: 18829013.

Abdominal survey

Round ligament and canal of nook



Inguinal Endometriosis. Noah Rindos, Ted Lee. https://www.youtube.com/watch?v=8CtbDZPAcmI

Intestinal endometriosis

Small bowel and appendix

- Appendiceal endometriosis incidence is 3-22% in women with endometriosis
- Ileocecal disease is considered rare but is consistently reported in the literature

Moulder JK, Siedhoff MT, Melvin KL, Jarvis EG, Hobbs KA, Garnett J. Risk of appendiceal endometriosis among women with deep-infiltrating endometriosis. Int J Gynaecol Obstet. 2017 Nov;139(2):149-154. doi: 10.1002/ijgo.12298. Epub 2017 Aug 16. PMID: 28755505.

Intestinal endometriosis

Sigmoid nodule

Intestinal endometriosis

Small bowel and appendix

Small bowel and appendix endometriosis. Mario Nutis. https://www.youtube.com/watch?v=w1dKQZ1ub8

Pelvic survey

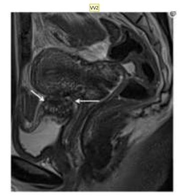
- Bladder 21%
- Ovarian fossa 32%
- Uterosacral ligaments 46%
- Rectovaginal septum 30%
- Ovaries 67%
- Uterus
- Fallopian tubes - Adnexa most common site of adhesions

Audebert A, Petousis S, Margioula-Siarkou C, Ravanos K, Prapas N, Prapas Y. Anatomic distribution of endometriosis: A reappraisal based on series of 1101 patients. Eur J Obstet Gynecol Reprod Biol. 2018 Nov;230:36-40. doi: 10.1016/j.ejogrb.2018.09.001. Epub 2018 Sep 5. PMID: 30240947.

Urinary tract endometriosis

Bladder and ureters

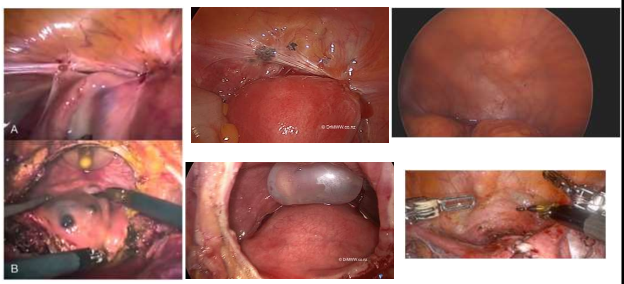
- Incidence 0.3-12% of women with endometriosis
- 20-53% of women with deep endometriosis
- Bladder 85%
- Ureter 10%
- Kidney 4%
- Urethra 2%



Leonardi M, Espada M, Kho RM, Magrina JF, Millischer AE, Savelli L, Condous G. Endometriosis and the Urinary Tract: From Diagnosis to Surgical Treatment. Diagnostics (Basel). 2020 Sep 30;10(10):771. doi: 10.3390/diagnostics10100771. PMID: 33007875; PMCID: PMC7650710.

Urinary tract endometriosis

Bladder lesions



Intestinal endometriosis

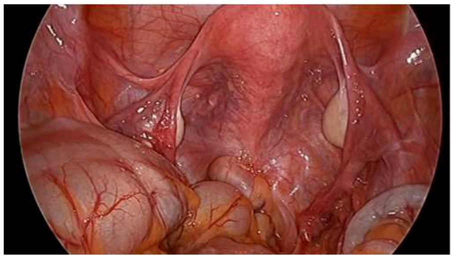
Rectum and sigmoid colon

- Incidence is 3-37% in women with endometriosis
- Rectum and sigmoid are most commonly affected (70-93% of cases of IE)

Rossini R, Lisi G, Pesci A, Ceccaroni M, Zamboni G, Gentile I, Rettore L, Ruffo G. Depth of Intestinal Wall Infiltration and Clinical Presentation of Deep Infiltrating Endometriosis: Evaluation of 553 Consecutive Cases. J Laparoendosc Adv Surg Tech A. 2018 Feb;28(2):152-156. doi: 10.1089/lap.2017.0440. Epub 2017 Oct 12. PMID: 29023195.

Intestinal endometriosis

Rectovaginal lesions



Excision of Endometriosis. Jon Einarsson. https://www.youtube.com/watch?v=TJSglrvUQr8

Intestinal endometriosis

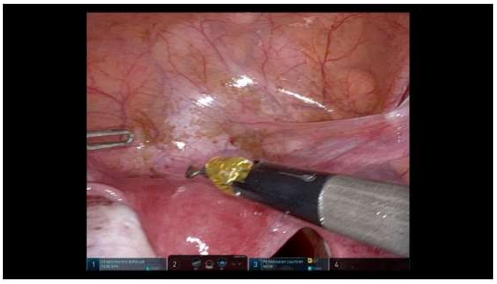
Rectal lesion

Slide 20

VV2 Most common sites of endometriosis of the bladder are the base and dome within the abdominal cavity

Victoria Vargas, 10/17/2022

Pelvic survey



Staging

- AAGL 2021 Endometriosis Classification System
  - Multicenter validation
  - Evaluated prospectively 1,224 patients
  - Kappa = 0.621 (high reproducibility) for surgically complexity
  - Equivalent correlation with ASRM Staging System for pain and infertility

Abrao MS, Andres MP, Miller CE, Gingold JA, Ruiz M, Neto JS, Carmona F. AAGL 2021 Endometriosis Classification: An Anatomy-based Surgical Complexity Score. J Minim Invasive Gynecol. 2021 Nov;28(11):1941-1950.e1. doi: 10.1016/j.jmig.2021.09.709. Epub 2021 Sep 25. PMID: 34583009.

Thank you!

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/