AGL 2022

51st GLOBAL CONGRESS ON MIGS

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

SYLLABUS

MAST-615: Master's Course in Exposure Retraction and Deep Dissection

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The following members of AAGL have been involved in the educational planning and/or review of this course (listed in alphabetical order by last name).

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Roseanne M. Kho, MD*
Veronica Lerner, MD
Kevin J.E. Stepp, MD – Consultant: Titan Medical, Empress Medical
Johnny Yi, MD*

VAG-614: Vaginal Access Surgery Including vNOTES TVH

Co-Chairs: *Rosanne M. Kho, MD, Jan F. Baekelandt, MD, PhD*

Faculty: *Veronica Lerner, MD, Kevin J.E. Stepp, MD, Johnny Yi, MD*

Course Description

Expand your MIS skillset with vaginal access! Learn from a dynamic faculty of experts in vaginal, single-incision laparoscopy and vNOTES routes. This practical and video-based course will highlight anatomy to avoid complications. Basic and advanced principles learned from single-incision laparoscopy and techniques to optimize success in vNOTES will be emphasized. With mastery of vNOTES techniques, discover the many applications of vNOTES beyond hysterectomy!

Learning Objectives

At the conclusion of this course, the participants will be able to: 1) Demonstrate techniques to enter the anterior and posterior cul de sacs during vaginal surgery; 2) Apply principles and techniques to optimize efficiency and safety in single-port laparoscopy and vNOTES; 3) Recognize anatomic landmarks and employ techniques to avoid complications during vaginal surgery, and 4) Articulate various gynecologic indications for vNOTES.

Course Outline

2:30 pm	Welcome, Introduction and Course Overview	R.M. Kho
2:35 pm	Simplifying Vagina Access to the Anterior and Posterior Cul de Sacs	R.M. Kho
2:50 pm	Principles and Lessons Learned from Single-Incision Laparoscopy: How Far Can We Go with Just One Port?	K.J.E. Stepp
3:25 pm	Getting Started: Tips and Tricks for Your First 10 vNOTES Cases	V. Lerner
4:15 pm	Avoid Complications with Anatomy, Anatomy, Anatomy in Vaginal Surgery	J. Yi
4:40 pm	vNOTES Applications Beyond Hysterectomy	J.F. Baekelandt
11:50 am	Questions & Answers	All Faculty
5:00 pm	Adjourn	

Simplifying Vaginal Access to the Anterior and Posterior Cul de sacs

Rosanne M Kho, MD
Professor, Ob Gyn & Reprod Biol, CCLCM and CWRU
Head, Section of Med Gyn & MIGS
Program Director, FMIGS
Cleveland Clinic OH

Cleveland Clinic

Disclosure

No financial disclosures

Rica Chan. April 2020

Objectives

- To provide techniques to anterior and posterior entry in difficult vaginal surgery:
  - Initial incision
  - Develop utero-vesical space
  - Posterior entry
  - Anterior entry

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Factors for difficult vaginal surgery

- Patient characteristics that are challenging:
  - High BMI
  - Narrow Introitus
  - Previous caesarean section

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High BMI: Maximize Exposure

BMI : 74 kg/m2

Secure pannus and thighs with wide adhesive tapes

Cleveland Clinic

High BMI: Maximize Exposure

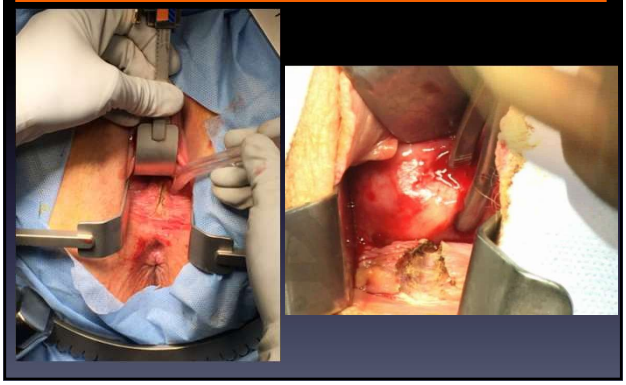
VAGINAL SURGERY:
DON'T GET BENT OUT OF SHAPE

KL WOODBURN MEDSTAR HEALTH
AND
R KHO CLEVELAND CLINIC

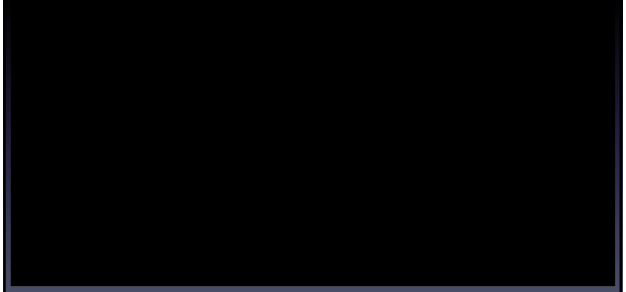
Cleveland Clinic
MedStar Health Research Institute

AJOG July 2020

Narrow vaginal introitus: Superficial relaxing incision



Maximize vaginal exposure: Superficial relaxing incisic



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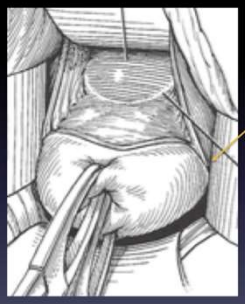
Exposure: optimize incision around the cervix



Atlas of Gynecologic Surgery. Raymond Lee. 1992. WB Saunders

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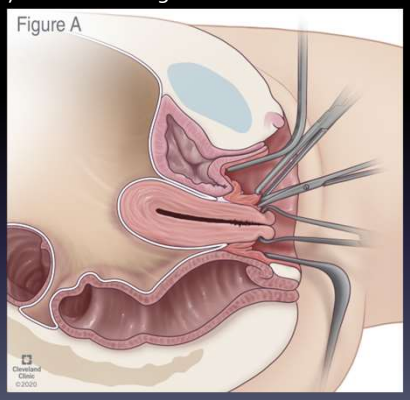
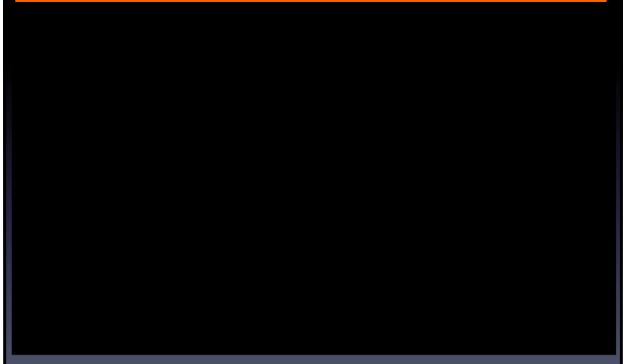
Completely detach the vaginal attachments to the cervix



Initial Incision to developing the vesico-uterine space and entry into the posterior CDS



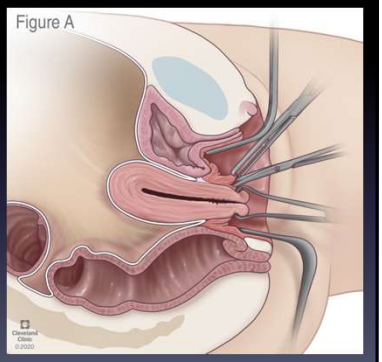
Difficult Posterior Entry: such as in obliterated posterior culd

-Completely detach vaginal attachments from the cervix

-Develop the vesico-uterine space

-Attempt posterior entry
: "fat stays with rectum"

-if unable, proceed in an extra-fascial manner
:secure descending uterine branches laterally until the lower uterine segment

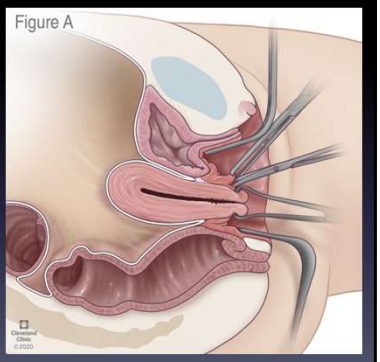


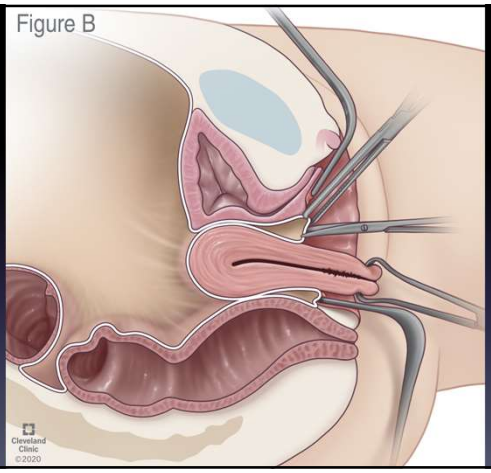
Difficult Anterior Entry: such as in patients with previous cae

-**Completely** detach vaginal attachments from the cervix

-Develop the vesico-uterine space

-Enter posteriorly first





Difficult anterior entry

Enter posteriorly first to gain better uterine descends

Vessel-sealing device for hemostasis

Use of sharp dissection. Proceed from *lateral to medial*

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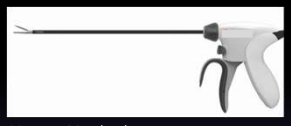
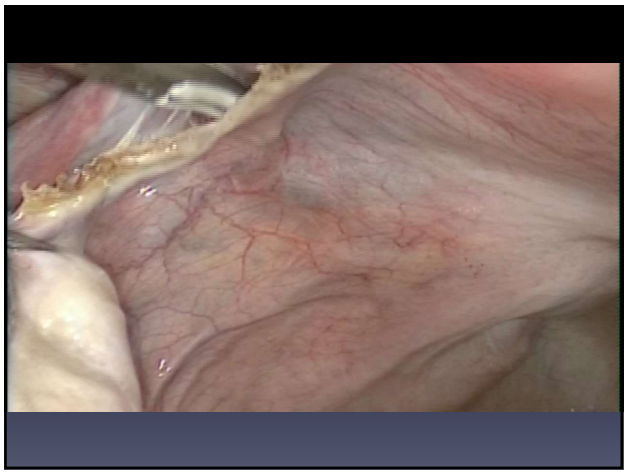
Ethicon Enseal

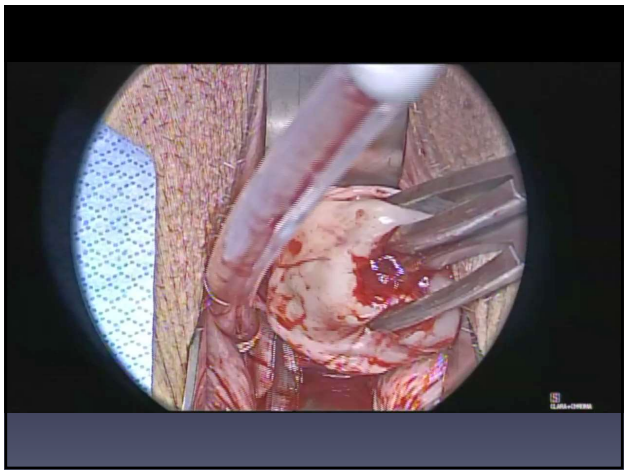


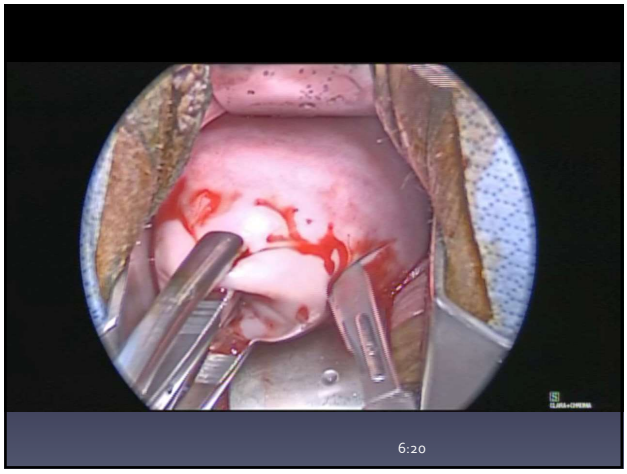
Ligasure Xtd

Ligasure Maryland

Ligasure Impact







Take home messages

- Maximize exposure
- Completely detach vaginal attachments
- Enter posteriorly prior to anterior CDS
- Identify vesico-uterine peritoneal fold
- In difficult cases
  - Gain better uterine descends
  - Approach Lateral to Medial

Cleveland Clinic

Principles And Lessons Learned From Single-Incision Laparoscopy: How Far Can We Go With Just One Port?

Kevin Stepp, MD
FACOG, Female Pelvic Medicine and Reconstructive Surgery
Director, Urogynecology and Pelvic Surgery
Atrium Health

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

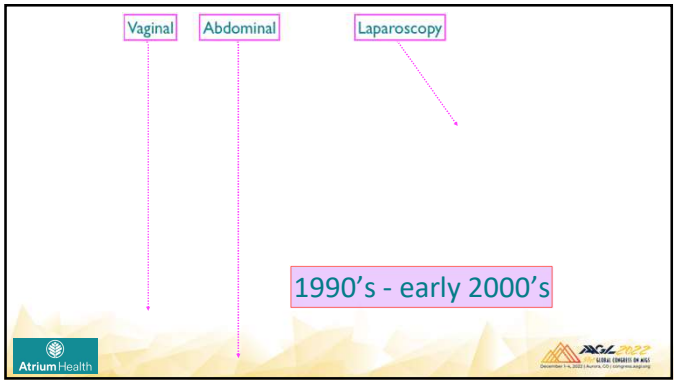
Disclosures submitted electronically and attested to:

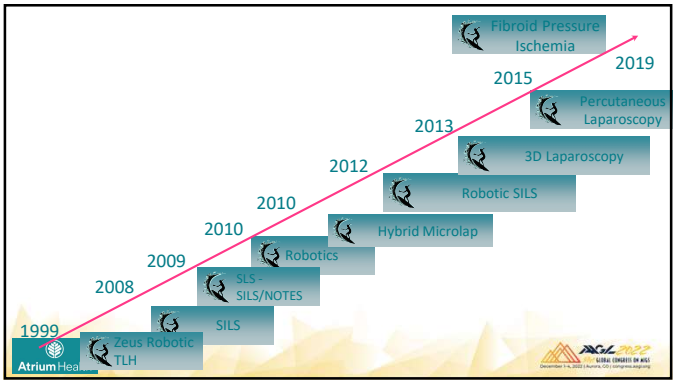
Consultant: Titan Medical, Empress Medical

Objectives

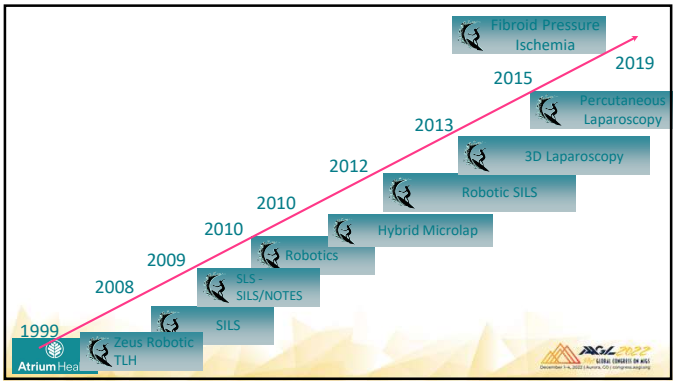
- Will review lessons learned when implementing new technology and techniques.
- Participants will be able to:
  - Discuss early history of NOTES and less invasive approaches in gynecology.
  - Consider and develop viable strategies to implement new technology into their practice.

Historical Perspective

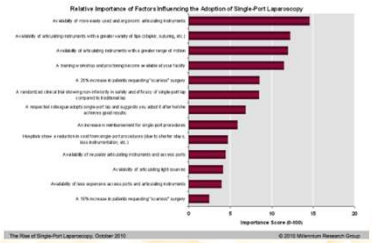




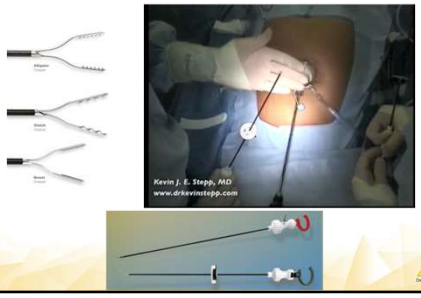
1999 First Robotic Hysterectomy - Zeus



Adoption of SILS - Industry drives innovation



Micro-laparoscopy



2 weeks post-op

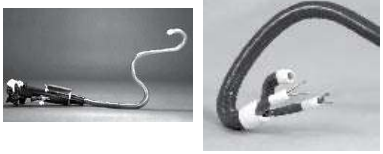
(Slide from 2009)

The Future?

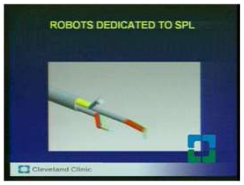
- 2005 Da Vinci FDA approved
- 2007 - Single incision laparoscopy

Natural Orifice Transluminal Endoscopic Surgery
N.O.T.E.S.

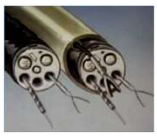
(Slide from 2009)



(Slide from 2009)



(Slide from 2009)



NOTES

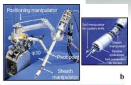
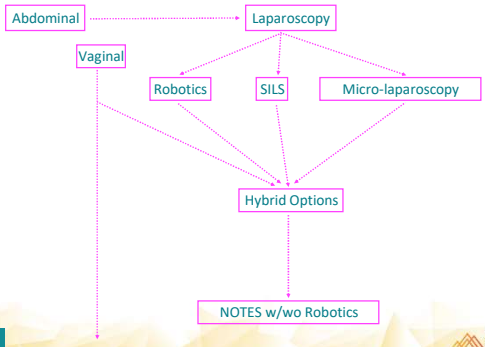


Figure 2 Future potential robotic solutions for natural orifice transluminal endoscopic surgery and laparoendoscopic single-site surgery

(a) Master and slave transluminal endoscopic robot (MASTER) [28]. (b) NeoGuide System (NeoGuide Systems Inc., San Jose, California, USA) [26•]. (c) VisCeh (EndoVia Medical, Norwood, Massachusetts, USA) [26•]. (d) AB1 robot (University of Nebraska, Lincoln, Nebraska, USA) [27•].

Rane A, Autorino R, Current Opinion in Urology 2011, 21:71–77



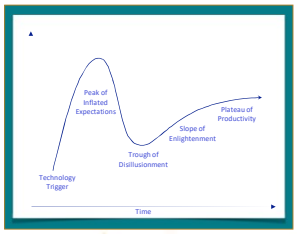
Are you a Pioneer?

- The 1960s also brought about an 80-kg camera coupling technology that allowed laparoscopists to observe intraabdominal images on a television screen. In June 1962, George Berci, MD, senior director of Minimally Invasive Endoscopic Research at Cedars-Sinai Hospital, Los Angeles, published an article in which he discussed how the television could be used to improve endoscopy techniques, including the capability of viewing the images immediately, enlarging and recording them, correcting for brightness and contrast, and allowing multiple observers access to images

G Berci, J Davids. Endoscopy and television. BMJ 1962;1:1610-1613

"You can never ride on the wave that came in and went out yesterday."
- John Wanamaker (1838-1922)

What is a Gartner Hype Cycle?



What is a Gartner Hype Cycle?

- Realize what your passion is.
- Where on the *Hype Cycle* do you thrive?
- What will be your legacy?

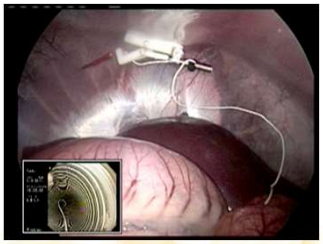
Responsibly taking on the challenge of innovation

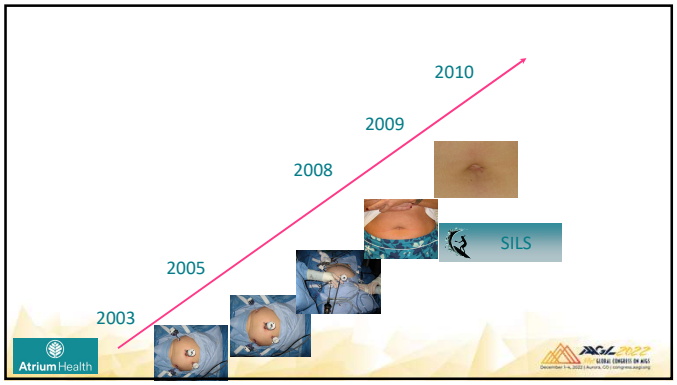
- Don't over-complicate.
- What are your motivations?
- Are you willing to spend the extra time? Are you at a place in your career to learn a new skill? Study a new technique?
- Step-wise approach
- Obtain appropriate training
- Do you have the case volume, of appropriate cases, to be able to schedule cases regularly to get through learning curve.
  - When taking on the new technique, will it affect your other case volume?
- Need to be able to look critically and honestly at your results, report and publish results.

What about the vaginal and laparoscopic approach?

Too Complicated?

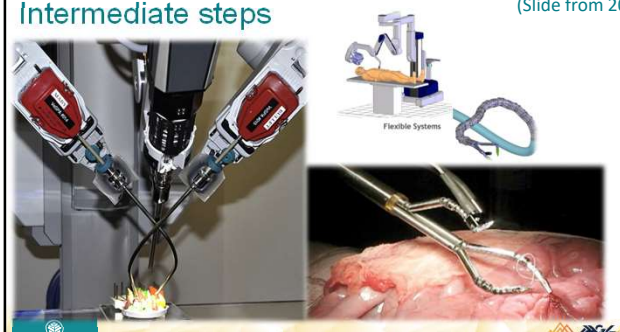
Single-Port Robotic Surgery





Intermediate steps

(Slide from 2009)



DaVinci SP
FDA Clearance 2015

SILS in Gyn: Initial Experience

- Retrospective Case Series
- First 22 cases
  - Hysterectomy (n=19)
  - Excision of endometriosis
  - Vaginal vault suspension
  - Appendectomy
  - Oophorectomy/cystectomy
- Mean follow up 5.2 weeks (2-10)

Stepp, KJ. Presented SGS Annual Meeting, New Orleans. 2009.

Outcomes
First 22 cases reviewed

n=19	Median	Range
Age	44.6 years	(29-62)
BMI	26.4	(19.5-46.7)
Operative time (with concomitant procedures)	171 minutes	(100-293)
Estimated blood loss	50 ml	(5-550)
Uterine weight	324 g	(61-1600)
Length of Stay	11 hrs 36 min	(1:00 -28:25)
Narcotic pain medication use	2.5 days	(0-14)
Any analgesic medication use	5.0 days	(0-21)
Return to work	3.5 days	(2-14)

Stepp, KJ. Pollard R. Original case study presented at SGS 2009 meeting.
Stepp, KJ, Pollard R. J Pelvic Med Surg. 2009; 15(2): 52-53.

Outcomes
First 22 cases reviewed

n=59	Median	Range
Age	43.6 years	(29-69)
BMI	28.4	(19.5-46.7)
Operative time (with concomitant procedures)	169 minutes	(22-338)
Estimated blood loss	100 ml	(5-1100)
Uterine weight	313 g	(61-1600)
Length of Stay	10 hrs 50 min	(1:00 -29)
Narcotic pain medication use	2.5 days	(0-28)
Any analgesic medication use	7.0 days	(0-28)
Return to work	3.4 weeks	(2 days - 6 weeks)

* 35/59 patients had more than one procedure performed.

Outcomes-Learning Curve
First 22 cases reviewed

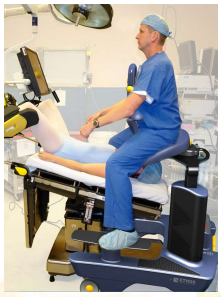
	1st Ten cases Mean ± SD	Cases 47-57 Mean ± SD	p Value
Mean operative time (min)	199.0 ± 55.4	183.1 ± 31.1	0.44
Estimated Blood Loss	129.0 ± 166.8	250.0 ± 273.6	0.25
Length of Stay	19.1 ± 8.4	14.3 ± 11.7	0.31
Uterine Weight	165.7 ± 142.6	350.3 ± 205.9	**0.03**
# of Complications	4	0	**0.03**

* 35/57 patients had more than one procedure performed.

Author's unpublished data

I wiped out a few times

ETHOS



Teach others

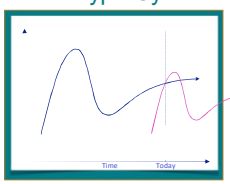
What's the least invasive way?

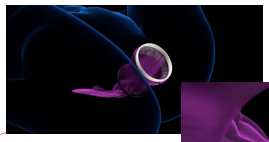
"When most people undergo an appendectomy, it usually means at least a couple of weeks of rest and recovery before they can go back to work. But when your job is as an NFL quarterback for a team making a playoff push, the timetable tends to speed up considerably."
- Stephanie Hockridge, Fox News 2010

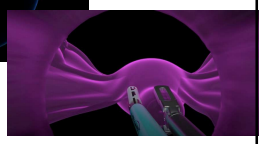
What's the least invasive way?

- A single 2cm incision?
- Three 5mm incisions?
- What about mini-lap?
- Two or three 2 mm and one 15 mm incision?
- Vaginal incision with or without morcellation?

A New Hype Cycle?







GROUNDBREAKING PLATFORM
Hominis Surgical System 3 arms
(Gynecology + General Surgery)

PIPELINE.
Next Gen platforms 3 arms + flex camera
(Complex Indications)

Atrium Health

Atrium Health

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Atrium Health

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Anatomy for the Vaginal Surgeon

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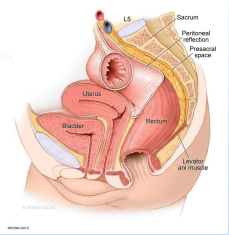
Disclosures

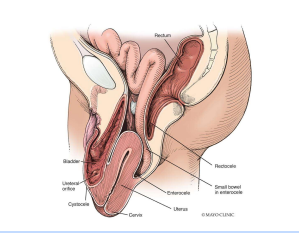
- I have no financial relationships to disclose

Objectives

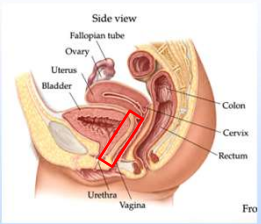
- At the end of this lecture, the vaginal surgeon should:
  - Recognize the importance of pelvic anatomy to minimize risk of complications during vaginal surgery
  - Demonstrate knowledge of the key surrounding anatomy specifically for vaginal hysterectomy.

Anatomy is critical



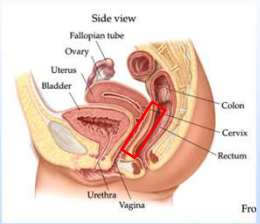


Pubocervical Fascia



- Midline support of the anterior vaginal wall
- Laterally attaches to ATFP to provide paravaginal support
- Vaginal epithelium fuses to cervix with underlying PCF
- Vesicouterine peritoneum lies deep to PCF and allows anterior colpotomy for TVH

Rectovaginal septum

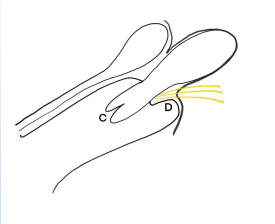


- Distal 1/3- tight fusion of vagina and anus with dense connective tissue and muscle
- Proximal 2/3- No true “fascia”- adventitia and muscularis of vagina, separated by rectum with increase in adipose tissue
- Cervicovaginal junction- rectum deviates posteriorly, vagina fuses with peritoneum

Cervical length

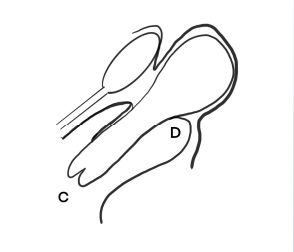
- Cervical length is longer in patients undergoing POP surgery.
  - POP4.4cm vs nPOP 3.1cm p<0.001
- Can be estimated on bimanual exam

  or
- CL=C-D (utilizing POP-Q classification)

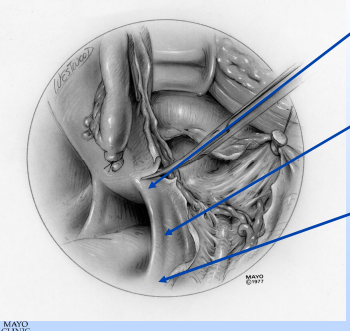


Clinical applicability

- For vaginal hysterectomy, cervical elongation increases complexity and length of operation. (Nosti et al)
  - 54 minutes vs 42 minutes, p<0.05
  - Despite lower uterine weight, CE was considered more difficult.
- Recognizing cervical elongation helps to understand where peritoneal reflection is located.



Uterosacral anatomy

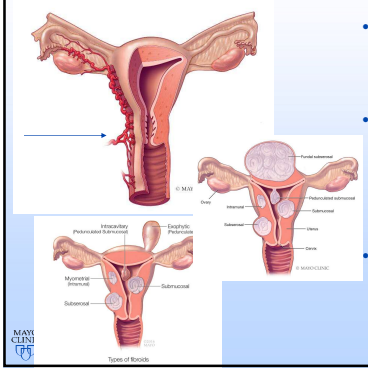


- Distal (cervical)
  - 5-20mm thick
  - 2-3cm length
- Intermediate
  - 1-2cm wide
  - 5cm length
- Proximal
  - Thin and diffuse
  - 5-6 cm length

Where does the USLS stitch go?

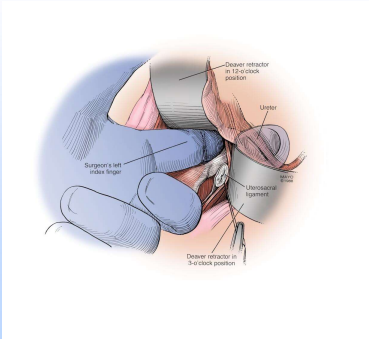
- Literature describes suspension sutures at the level of the ischial spine
- Wieslander et al
  - 14mm to ureters
  - 43% at level of S1
  - 33% at level of S2
  - 22.9% at level of S3

Uterine blood supply- Where are they?

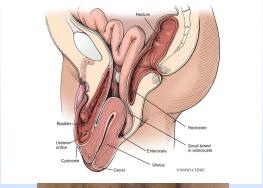


- Uterine artery- Branch of Hypogastric artery
- Runs over the ureter at the level of the cervix and lies within the cardinal ligament
- 2.3cm from ureter to uterine artery
  - 12% <0.5cm distance

Normal Ureter location

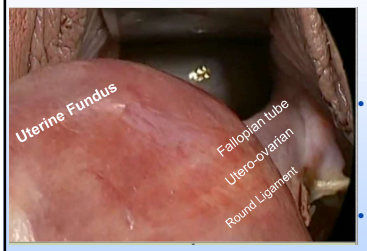


Abnormal ureter location



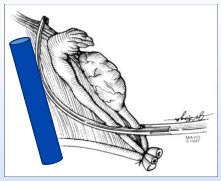
- 7-13% of patients undergoing POP surgery have hydronephrosis
- Severe prolapse can lead to abnormal course and lengthening of ureter
- Consider preoperative workup if ↑Cr

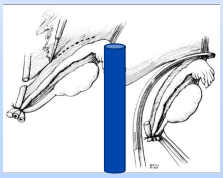
Triple Pedicle



- Round ligament
  - Lateral and caudal
  - Vascular supply- artery of Samson
- Utero-ovarian ligament
  - Lateral and cephalad
    - Vascular supply- ovarian vessels
- Fallopian tube
  - Lateral and cephalad
    - Vascular supply- uterine and ovarian vessels

Vaginal adnexal surgery





- Anatomy is consistent
- IP ligament runs in proximity to ureter
- Isolating IP ligament will allow separating its distance from the ureter

Conclusions

- Don't be afraid of anatomy from the vaginal surgeons perspective.
- Understanding vaginal approach to anatomy allows the vaginal surgeon to operate safely and in the least invasive modality possible.

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vNOTES Applications Beyond Hysterectomy

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AAGL 2022 51st GLOBAL CONGRESS ON MIGS
December 1-4, 2022 | Aurora, CO | congress.aagl.org

Disclosure

- Jan Baekelandt discloses consultancy for Applied Medical and Momentis Surgical

Objectives

- Overview of vNOTES Indications in Gynecological Surgery
- Level of evidence per indication

Program

What is vNOTES?

Potential Benefits

Fertility Indications

Benign Indications

UroGyn Indications

Onco Indications

Conclusion

vNOTES: Natural Orifice Transluminal Endoscopic Surgery

Vaginal

Natural Orifice because the technique avoids making visible scars by using natural orifices (such as mouth, vagina, anus, urethra,...) to gain access to the abdominal cavity.

Transluminal because the access is not directly through the abdominal wall, as it is in classical laparoscopic surgery, but goes through the lumen of another organ (eg stomach, vagina, rectum, bladder,...).

Endoscopic Surgery

Potential Benefits

Less wound infections
Fewer abdominal wall hernias
Less abdominal wall pain
No trocar related complications
Quicker recovery
Shorter hospitalization
Reduced health care costs
Ergonomics
(Fallopian tubes)
Previous abdominal surgery

vNOTES

INDICATIONS IN FERTILITY SURGERY

Video

Jan Baekelandt

INDICATIONS IN BENIGN SURGERY

Video

Jan Baekelandt

INDICATIONS IN UROGYN SURGERY

Video

Jan Baekelandt

INDICATIONS IN CANCER SURGERY

Video

Jan Baekelandt

CONCLUSION

Nearly all GYN procedures can be performed via vNOTES

Adnexectomy: Level 1B Evidence

All other procedures: Level 4 Evidence

Jan Baekelandt

Acknowledgments

• N/A

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Baekelandt J, De Mulder PA, Le Roy I, Mathieu C, Laenen A, Enzlin P, Morlion B, Weyers S, Mol BWJ, Bosteels JJA. Adnexectomy by vaginal Natural Orifice Transluminal Endoscopic Surgery versus laparoscopy: results of a first randomised controlled trial (NOTABLE trial).

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/