606-VAG:
Vaginal Hysterectomy: Multi-Approach including v-Notes
Professional Education Information

Target Audience
This educational activity is developed to meet the needs of surgical gynecologists in practice and in training, as well as other healthcare professionals in the field of gynecology.

Accreditation
AAGL is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The AAGL designates this live activity for a maximum of 2.50 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Disclosure of Relevant Financial Relationships
As a provider accredited by the Accreditation Council for Continuing Medical Education, AAGL must ensure balance, independence, and objectivity in all CME activities to promote improvements in health care and not proprietary interests of a commercial interest. The provider controls all decisions related to identification of CME needs, determination of educational objectives, selection and presentation of content, selection of all persons and organizations that will be in a position to control the content, selection of educational methods, and evaluation of the activity. Course chairs, planning committee members, presenters, authors, moderators, panel members, and others in a position to control the content of this activity are required to disclose relevant financial relationships with commercial interests related to the subject matter of this educational activity. Learners are able to assess the potential for commercial bias in information when complete disclosure, resolution of conflicts of interest, and acknowledgment of commercial support are provided prior to the activity. Informed learners are the final safeguards in assuring that a CME activity is independent from commercial support. We believe this mechanism contributes to the transparency and accountability of CME.
# Table of Contents

Session Program (Description, Learning Objectives and Course Outline) ............................................................................. 1
Disclosure ........................................................................................................................................................................ 2

Difficult Vaginal Hysterectomy Entries: Anterior and Posterior
L.Siff .................................................................................................................................................................................. 3

vNOTES: Getting Started and Optimizing Success
H.Salvay ........................................................................................................................................................................... 6

Apical Suspension at the Time of Vaginal Hysterectomy: Identifying and Anchoring the USLS
L.Siff .................................................................................................................................................................................. 8

Uterosacral Ligament Suspension via vNOTES
H.Salvay ........................................................................................................................................................................... 11

Hysterectomy in High BMI Patients
G.May .................................................................................................................................................................................. 14

Help, I Can’t Reach the Anterior Peritoneal Fold Vaginally
J.Baekelandt ....................................................................................................................................................................... 18

Vaginal Morcellation of Large Uterus
G.May .................................................................................................................................................................................. 21

How to Successfully Complete a Difficult Hysterectomy via vNOTES
J.Baekelandt ....................................................................................................................................................................... 31

Cultural and Linguistic Competency .................................................................................................................................. 34
606-VAG: Vaginal Hysterectomy: Multi-Approach including v-Notes

**Co-Chairs:** Jan F. Baekelandt and Lauren Siff

**Faculty:** Grover May, Howard Salvay

Many guidelines state that the vaginal route should be our access of choice for hysterectomy whenever feasible, yet the numbers of vaginal hysterectomy keep declining.

This course will focus on the most challenging points of vaginal hysterectomy: anterior colpotomy, posterior colpotomy and vault suspension.

vNOTES (vaginal Natural Orifice Transluminal Endoscopic Surgery) broadens the indications for vaginal surgery. It enables surgeons to perform gynaecological operations leaving no visible scars. As the entire endoscopic procedure is performed transvaginally, no abdominal incisions are made while vNOTES offers the advantages of superior endoscopic visualization and the use of endoscopic instruments for better control of haemostasis. Nearly all benign gynaecological operations can be performed via vNOTES, but in this course we focus on vNOTES hysterectomy.

This course will teach you how to get started and how to optimize your success in vNOTES. It will teach you how vNOTES can help you in high BMI patients and in cases where vaginal access is difficult. You will also learn how to perform a high vault suspension via vNOTES, how to successfully complete a difficult hysterectomy via vNOTES, and how to morcellate a large uterus vaginally.

**Learning Objectives:** At the conclusion of this activity, the participant will be at to: 1) Describe how to deal with a challenging anterior and posterior colpotomy; 2) demonstrate how to perform a high vault suspension via conventional vaginal surgery and via vNOTES; and 3) describe how to morcellate a large uterus vaginally.

**COURSE OUTLINE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am</td>
<td>Welcome, Introduction and Course Overview</td>
<td></td>
</tr>
<tr>
<td>7:10 am</td>
<td>Difficult Vaginal Hysterectomy Entries: Anterior and Posterior</td>
<td>L. Siff</td>
</tr>
<tr>
<td>7:25 am</td>
<td>vNOTES: Getting Started and Optimizing Success</td>
<td>H. Salvay</td>
</tr>
<tr>
<td>7:40 am</td>
<td>Apical Suspension at the Time of Vaginal Hysterectomy: Identifying and-Anchoring the USLS</td>
<td>L. Siff</td>
</tr>
<tr>
<td>7:55 am</td>
<td>Uterosacral Ligament Suspension via vNOTES</td>
<td>H. Salvay</td>
</tr>
<tr>
<td>8:10 am</td>
<td>Hysterectomy in High BMI Patients</td>
<td>G. May</td>
</tr>
<tr>
<td>8:25 am</td>
<td>Help, I Can’t Reach the Anterior Peritoneal Fold Vaginally</td>
<td>J. Baekelandt</td>
</tr>
<tr>
<td>8:40 am</td>
<td>Vaginal Morcellation of Large Uterus</td>
<td>G. May</td>
</tr>
<tr>
<td>8:55 am</td>
<td>How to Successfully Complete a Difficult Hysterectomy via vNOTES</td>
<td>J. Baekelandt</td>
</tr>
<tr>
<td>9:10 am</td>
<td>Questions &amp; Answers</td>
<td>All Faculty</td>
</tr>
<tr>
<td>9:30 am</td>
<td>Adjourn</td>
<td></td>
</tr>
</tbody>
</table>
PLANNER DISCLOSURE
The following members of AAGL have been involved in the educational planning of this workshop (listed in alphabetical order by last name).

Linda J. Bell, Admin Support, AAGL*
Linda D. Bradley, MD, Medical Director, AAGL*
Erin T. Carey, MD, MSCR
Honorarium: Teleflex Medical, MedIQ
Mark W. Dassel, MD
Contracted Research: Myovant Sciences
Linda Michels, Executive Director, AAGL*
Vadim Morozov, MD
Speaker: AbbVie
Consultant: Medtronic, Lumenis
Erinn M. Myers, MD
Speakers Bureau: Laborie Medical Technologies, Teleflex Medical
Other: Unrestricted educational grant to support NC FPMRS Fellow Cadaver Lab: Boston Scientific Corp. Inc.
Amy Park, MD
Speaker: Allergan
Nancy Williams, COO, CME Consultants*
Harold Y. Wu, MD*
Jan F. Baekelandt, MD, PhD
Consultant: Applied Medical
Contracted Research: Memic
Speakers Bureau: Memic
Lauren Siff, MD*

FACULTY DISCLOSURE
The following have agreed to provide verbal disclosure of their relationships prior to their presentations. They have also agreed to support their presentations and clinical recommendations with the “best available evidence” from medical literature (in alphabetical order by last name).

Jan F. Baekelandt, MD
Consultant: Applied Medical
Contracted Research: Memic
Speakers Bureau: Memic
Grover May, MD
Consultant: Applied Medical
Speakers Bureau: Applied Medical
Howard Salvay, MD
Speakers Bureau: Applied Medical
Lauren Siff, MD*

Content Reviewers have nothing to disclose.

Asterisk (*) denotes no financial relationships to disclose.

All relevant financial relationships noted have been mitigated.

Jim Tsaltas, MBBS, FRANZCOG
Education Partner and Fellowship Funding:
Covidien
Speakers Bureau: Covidien
Audrey T. Tsunoda, MD, MPH
Speakers Bureau: Medtronic, CooperSurgical,
Merck & Co., AstraZeneca, Roche
Linda Michels, Executive Director, AAGL*

SCIENTIFIC PROGRAM COMMITTEE
Mauricio S. Abrão, MD, PhD*
Linda D. Bradley, MD, Medical Director, AAGL*
Francisco Carmona Herrera, MD, PhD
Contracted Research: ADAMED
Speakers Bureau: ADAMED, Gedeon Richter Pharmaceuticals
Consultant: Medtronic
Marcello Ceccaroni, MD, PhD*
Sarah L. Cohen Rassier, MD, MPH*
Julian A. Gingold, MD, PhD*
Charles E. Miller, MD
Consultant: AbbVie, Boston Scientific, Espiner Medical Inc
Contracted Research: Allergan Pharmaceutical,
Blue Seas Medical Spa – Investor, Eximis Surgical, Inc.
Speakers Bureau: Allergan Pharmaceutical
OBJECTIVES

To review straightforward posterior and anterior entries
To then identify tips and tricks for difficult posterior and anterior entries
Utilize Video and Illustration to elucidate concepts
Answer any questions re: difficult cases

Straightforward Posterior entry

Key points:
1. Injection
2. Incision
3. Correct hand angle, Wide bite!
4. Important to get in on the first try, so optimize this!
**Difficult Posterior Entry**

1. Use of sharp dissection with good traction-countertraction
2. Extrapelvic dissection and suture ligation
3. Use of EEA sizer in the rectum
4. Palpation of the vul-de-sac via the anterior colpotomy
5. Division of the posterior cervix

---

**Division of the Posterior Cervix**

---

**Clamping the USLS**

Don’t underestimate this step, it is key to transition from posterior to anterior entry.

---

**Straightforward Anterior entry**

1. Appropriate Injection
2. Appropriate Incision
3. Sharp Dissection with Traction-Countertraction
4. Always see BOTH peritoneum and bladder
5. Cut right in, Don’t Undermine!
**Difficult Anterior Entry**

1. Be patient!
2. Use your Landmarks
3. Bring it to you... Extraperitoneal pedicle ligation
4. Dissect on your finger palpated from the posterior cul-de-sac
5. Catheter guide or uterine sound in the bladder
6. Backfill the bladder
7. **CYSTO**

---

**Landmarks**

*Distance From Cervicovaginal Junction to Anterior Peritoneal Reflection Measured During Vaginal Hysterectomy*

---

**Challenges**

**Multiple C-sections? Anterior myoma?**
*come from the side not midline entry
Can do almost entirely extraperitoneal if needed!*

**Cystotomy?**
*Use it to help you! Tag and repair after entry complete *But avoid extending w/ retractor*
Uterosacral Ligament Suspension via vNOTES
Howard Salvay MD, FACS, FACOG

Disclosure
Speakers Bureau — Applied Medical

Objectives
- Demonstrate the technique of Uterosacral Ligament Suspension utilizing vNOTES

Supporting the Apex
McCalls
Uterosacral Ligament Suspension
Sacrospinous Fixation
Sacrocolpopexy

Supporting the Apex

Two Absorbable #1 Sutures Each Side
Full Thickness Vaginal Suture - Posterior and Lateral
Partial Closure of Cuff After Anterior Repair but Before Tying Suspension Sutures
Place Some Untied Cuff Sutures to Allow Vagina to Move Cephalad and Knots to be Submucosal
**OBJECTIVES**

To emphasize need for apical suspension in prevention and treatment of prolapse at time of hysterectomy
To review identification of Uterosacral Ligament as a key landmark
To show options (McCalls and high USLS)
Utilize Video and Illustration to elucidate concepts
Answer any questions re: difficult cases

---

**DISCLOSURES**

I have no relevant financial disclosures

---

**Post Hyst Surgical Setup**

---

**McCall’s Culdoplasty**

---

**Summary of Recommendations**

1. McCall culdoplasty may be performed during vaginal hysterectomy to treat non-prolapse-related disease to reduce the risk of postoperative apical prolapse for up to 3 years (Level B).

2. Uterosacral ligament suspension may be performed during abdominal (Level B) and laparoscopic (Level C) hysterectomy to reduce the risk of post-hysterectomy vaginal vault prolapse.

3. Sacrospinous ligament fixation and abdominal sacrocolpopexy are not recommended for prevention of prolapse during hysterectomy to treat non-prolapse-related disease (Level C).
**Uterosacral Ligament Suspension**

- Intraperitoneal access at time of hysterectomy
- Native Tissue
- Treatment or Prevention of prolapse
- 4% Ureteral Kinking

---

**The USLS: landmarks avoiding ureteral obstruction**

---

**Identification and Suturing of the USLS**

---

---
Anchoring to the vaginal cuff

Thomas et al. “USLS: The way we do it”

Siff et al. “Surgical Anatomy and Steps of the USLS”

Final Result

Siff et al. “Surgical Anatomy and Steps of the USLS”

May your coffee, pelvic floor, intuition, and self-appreciation be strong
vNOTES:
Getting Started and Optimizing Success

Howard Salvay MD, FACS, FACOG
Santa Cruz, California

Disclosure
● Speakers Bureau - Applied Medical

Objectives
● Describe the steps for integration of vNOTES in your OR
● Discuss learning platforms and how to get training
● Describe the components required to become a vNOTES surgeon

Requirements
Vaginal Surgery Skills
Laparoscopic Skills
Understanding of Single Site Surgery
Access Port
Training
Supportive Hospital

Components for vNOTES
Entry into Abdomen through the vagina
Patient Selection
Port
Laparoscope
Train the OR
Equipment
Technique
LAPAROSCOPICALLY ASSISTED VAGINAL HYSTERECTOMY

Planning for vNOTES
Education:
  Videos, Courses, Communicate, App Based Learning
First case:
  Educate your OR manager, OR Staff, PACU
You have privileges for this:
  Laparoscopic Surgery/Vaginal Surgery/Hysterectomy
  LAVH vs VHILA
  Informed Consent

PATIENT SELECTION
Initial Cases
  Mobile uterus
  Narrow Lower Uterine Segment
  Culdesac
  Normal uterus
  Cesarean Section
  Previous Surgery

Progression in vNOTES
Start with Oophorectomy / Salpingectomy
following vaginal hysterectomy
Begin with Vaginal Hysterectomy
vNOTES on the Upper pedicles
Full vNOTES Hysterectomy Following Anterior & Posterior Entry

Key Surgical Moves
  Vaginal entry
  Port Placement
  Upward and Medial Traction
  Secure Pedicle Ligation
Key Surgical Moves

Visualization of Bowel and Distal End of Instruments
Trendelenberg
Bowel Relaxation
Assistant and Scrub Training

Learning References

iNotes Society
vNOTES Global
vNOTES USA
OR APP
vNOTES Courses
YouTube

Plan & Execute

Safe Surgery
Vaginal Morcellation of Large Uterus

Grover May, MD, FACOG
Director of OB/GYN, State of Franklin OB/GYN Specialists
Clinical Associate Faculty, ETSU College of Medicine

Disclosure
- Consultant: Applied Medical
- Speakers Bureau: Applied Medical

Objectives
- Examine the risks of morcellation
- Compare surgical options for tissue extraction
- Identify techniques to efficiently remove large tissue specimens vaginally
- Identify practical tips for transvaginal contained tissue extraction

Terminology
- Morcellation
- Electromechanical
- Manual

Terminology
- Morcellation Techniques
  - Intraperitoneal
  - Extraperitoneal (aka Extracorporeal)
  - Contained

Risks
- Tissue dissemination
  - Malignancy
    - Sarcoma
    - Endometrial carcinoma
  - Tumors of Uncertain Malignant Potential
  - Endometriosis / Adenomyosis
  - Parasitic myomas
  - Pathology specimen evaluation
  - Surgical complications
## Risks & Benefits

<table>
<thead>
<tr>
<th>Contained</th>
<th>Uncontained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longer operating room time</td>
<td>Shorter operating room time</td>
</tr>
<tr>
<td>Removal of larger specimen through small incisions</td>
<td>Removal of larger specimen through small incision</td>
</tr>
<tr>
<td>Lower risk of tissue dissemination</td>
<td>Higher risk of tissue dissemination</td>
</tr>
<tr>
<td>Similar postoperative cosmesis</td>
<td>Similar postoperative cosmesis</td>
</tr>
<tr>
<td>Higher overall costs</td>
<td>Lower overall costs</td>
</tr>
<tr>
<td>Requires more training</td>
<td>Requires less training</td>
</tr>
<tr>
<td>Lower risk of incidental malignancy</td>
<td>Higher risk of incidental malignancy</td>
</tr>
<tr>
<td>Option in response to 2013 incident and FDA</td>
<td>2013 incident, FDA Statement</td>
</tr>
</tbody>
</table>

## Additional Contained Extraction Benefits
- Removal of large specimens through smaller incisions
- Improved cosmesis compared to open
- Decreased overall costs compared to power morcellation
- Minimal learning curve

## Contained Tissue Morcellation Technique
- Removal of tissue specimen through the vaginal opening (transvaginally)
- Procedures may include vaginal hysterectomy and laparoscopic myomectomy
- Specimen size and shape, patient anatomy, vaginal canal conditions, and surgeon preference/skill level determine a vaginal approach
- Procedures may include vaginal hysterectomy and laparoscopic myomectomy
- Common techniques include coring, bi-valving, and wedge resection

## Vaginal Tissue Extraction

### Contemporary Techniques
- EXCITE
- “Shark Tooth”

### Extraction Instruments
- Containment bag
- Multiple #10 or #11 blade scalpels
- 2 long scalpel handles
- 2 Lahey clamps
- 2 Tenaculum
- Basin for specimen containment
- Rongeur scissors
- For calcified fibroids
Extraction Technique Options

- Extracorporeal C-Incision Tissue Extraction (ExCITE)
  - Top down view
  - Surgeon preference on cutting location

ExCITE Technique

- C-incision on leading edge of specimen
  - Angled approach with scalpel
- Specimen rolls in bag
- Decreased risk of spillage
- Timely removal of specimen
- Maintains insufflation throughout
  - Protects underlying structures

Extraction Technique Options

- Shark Tooth technique
  - Top down view

Shark Tooth Technique

- Alternate cutting on each side
- Cut lateral to medial and avoid deep cuts
- Perform all cuts outside of the abdomen
- Remember the no-cut-zone
- Maintain consistent tension, not to tear tissue

vNOTES Contained Morcellation Example

FDA Statement on Power Morcellation

Using a new authority that bypasses public comment, the agency stopped short of imposing an outright ban on the device, but severely restricted its use in the following manner:

- The agency placed a “black box” label on the device, warning that the use of power morcellators during fibroid surgery may spread cancer and decrease the long-term survival of patients. The boxed warning is FDA’s sternest warning for significant risk of serious or life-threatening adverse effects.
- The agency’s guidance decreed that power morcellators are contraindicated for removal of uterine tissue in menopausal and post-menopausal women, and in women who are eligible for surgeries that remove uterine tissue intact such as through the vagina or mini-laparotomy.
- Similarly, power morcellators are now contraindicated in gynecologic surgery in which the tissue to be morcellated is known or suspected to be cancerous.
Effects of the 2014 FDA Statement on Practice Patterns

- 64% of GYNs report decreasing their use of power morcellators
- 48% of GYNs report an overall increase in utilization of laparotomy
- 4-9% decrease in laparoscopic hysterectomy
- 60% decrease in LSH (Laparoscopic Supracervical Hysterectomy)
- 19% decrease in laparoscopic myomectomy


References

HELP,
I can’t reach the anterior peritoneal fold vaginally

Prof. Dr. Jan Baekelandt MD PhD
Imelda Hospital Bonheiden Belgium
K.U.Leuven University Belgium

Disclosure:
Consultancy Applied Medical

vNOTES: vaginal 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 (e.g. stomach, vagina, rectum, bladder,...).
Endoscopic Surgery

Challenging Anterior Colpotomy
Large myomatous uterus
Anterior myoma
Previous C-section
Nulliparity
Narrow introitus

Solutions to Difficult Anterior Colpotomy
Dr L Siff
vNOTES

vNOTES Solution to Difficult Anterior Colpotomy
TVNH Total Vaginal NOTES Hysterectomy
VANH with endoscopic anterior colpotomy
Dissection

- Circumcision of cervix
- Posterior Colpotomy
- Transect vesicocervical septum

Gelpoint placement

- Posterior: Pouch of Douglas
- Lateral: Around Cervix
- Anterior: Between vaginal mucosa and peritoneum

Identification

- Blue translucency
- Dead space behind peritoneal flapping
- Peritoneal flapping
- Bladder dome

Peritoneal Curtain

- Replace Alexis or continue with curtain

Video Demo

Conclusion

- Limitations:
  - vNOTES anterior colpotomy
  - Broaden indications for vaginal surgery
References


Objectives

- Recognize the prevalence of obesity
- Examine the surgical risks of hysterectomy in the high BMI patient
- Compare surgical options for hysterectomy in high BMI patients
- Identify techniques to mitigate risks in this population
- Identify tips for successful vNOTES hysterectomy in the high BMI patient

Definitions

- Overweight
  - BMI of 25.0 – 29.9
- Obesity
  - Class I – BMI 30.0 – 34.9
  - Class II – BMI 35.0 – 39.9
  - Class III – BMI 40.0+
  - Some have proposed the following additional categories
    - Class IV – BMI 50.0+
    - Class V – BMI 60+

Statistics

- More than two-thirds of adults are overweight
- The prevalence of obesity is about 42%
- About 12% of women have extreme obesity

Disclosure

- Consultant: Applied Medical
- Speakers Bureau: Applied Medical
Medical Risks

• Diabetes
• Heart disease
• Hypertension
• Hepatosteatosis
• Osteoarthritis
• Cancer
• Stroke
• Sleep apnea
• Hyperlipidemia

Surgical Risks

• Wound complications
• Surgical site infections
• Venous thromboembolism
• Intraoperative morbidity
• Increased mortality
• Increased blood loss
• Increased length of stay
• Increased cost of care

Surgical Risks

Perioperative morbidity (surgical site infections, wound complications, and VTE) increases as BMI increases in women undergoing abdominal hysterectomy


BMI > 35 increased risk of SSI (OR 5.7)
Surgical Risks

VTE risk in obese women (BMI > 35) carries a RR of 3.45 compared to lean women (BMI 22.5-24.9).

Incidence of post-op VTE in overweight women (BMI > 24.9) was 4x higher in outpatient cases and 40x higher in inpatient cases.


Pre-op Issues – Choosing the Surgical Route

ACOG recommends vaginal approach when possible

- “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.”
- Minimally invasive approaches favored over abdominal approach
- Laparoscopic surgery may be more complicated but is favored over abdominal
- Robotic assistance may be appropriate but “the role of robotic assistance for execution of laparoscopic hysterectomy has not been clearly determined and more data are necessary to determine the most appropriate evidence-based applications for this technology.”

Choosing the Route of Hysterectomy for Benign Disease, ACOG Committee Opinion, Number 701, June 2017

Abdominal Hysterectomy (TAH):

Overall incidence of wound complications – 29% (7x normal BMI)
Longer surgical time
Greater blood loss
Higher febrile morbidity
Longer hospital stay


Both laparoscopic and vaginal hysterectomies are associated with fewer postoperative complications and shorter length of hospital stay in the morbidly obese patient.

Pre-op Issues – Choosing the Surgical Route

Higher BMI increased rate of TAH and decreased TVH and LAVH but did not alter the rate of TLH.

Both laparoscopic and vaginal hysterectomies are associated with fewer postoperative complications and shorter length of hospital stay in the morbidly obese patient.

Pre-op Issues – Choosing the Surgical Route


Pre-op Issues – Choosing the Surgical Route

Higher BMI increased rate of TAH and decreased TVH and LAVH but did not alter the rate of TLH.
Pre-op Issues – Choosing the surgical route

Vaginal cuff dehiscence rates:

- TLH – 4.93%
- TVH – 0.29%
- TAH – 0.12%

**Relative Risk = 21 & 53 !!**

Half of all dehiscences were smokers. No dehiscences were noted in supracervical hysterectomies.

---

Pre-op Care

- Detailed H&P
  - Identify co-morbidities
    - Metabolic syndrome (obesity, HTN, DM) – need baseline ECG
    - Keep blood sugar, BP well-controlled
  - Consultation with anesthesiologist and/or PCP
  - Assess need for pre-op sleep study – STOP-BANG questions
- Encourage weight reduction & healthy habits
- Pre-op clear liquid diet

---

Surgical Approach?

- Abdominal / Open
- Single Port
- Reduced Port
- Multi Port
- HALS
- Robotic
- Vaginal
- **vNOTES**

---

Selecting the route for hysterectomy

MIGS Tools?

If all you have is a hammer …
then everything looks like a nail!

---

MIGS Tools – Use the best one!

Have multiple tools in your surgical toolbox and be comfortable with all of them.

Add vaginal surgery BACK to your regimen.
Vaginal Access

Is it possible to perform a colpotomy?

Are uterine vessels accessible laparoscopically?

Selecting the route for hysterectomy

Concern for extrauterine pathology?

Able to be managed laparoscopically?

Is it possible to perform laparoscopy?

Hybrid (vNOTES)

Hybrid (LAVH, HALS)

Laparoscopy (TLH)

Laparotomy (TAH)

General Challenges in MIGS Procedures

• Establishing access
• Ureteral identification
• Extensive adhesions
• Endometriosis
• Enlarged uterus
• Cancer

• Tissue extraction
• Suturing and dexterity
• Patient factors
• Ergonomics

General Procedural Recommendations

Establish access to the target organ
Identify and normalize anatomy
Evaluate and acknowledge areas of risk
• Ureters, vasculature, bladder, bowel, etc.
Standardize surgical techniques to achieve defined goals
• Obtain visualization (exposure)
• Generate conical triangulation of working instruments and optics (mobilize)
• Establish traction & counter-traction (grasp and/or apply tension)
• Tissue interaction (spread, push, desiccate, cut, suture, extract)
• Maintain hemostasis

Surgical Technique -- Basics

Anatomy:
• Structures
• Tissue planes:

Actions:
• Grasp
• Push
• Spread
• Desiccate
• Cut
• Approximate

Visualization

Triangulation

Triangulation
Intra-op Issues -- Abdominal Wall anatomy

- Androgenic ("Apple") fat distribution – significant core adiposity
- Gynecoid ("Pear") fat distribution is lateral – away from the core

BMI Subtypes

Surgical Technique – Landmarks

Surgical Technique – Vascular anatomy

Epigastric hematoma
Intra-op Issues – Positioning

- Position while awake
- Anesthesia issues with airway management
- RE-position after intubation if needed
- Assess pressure points
- Use of Trendelenburg position
- Stirrup use
- Stabilization of panniculus
Intra-op Issues – VTE prophylaxis

- TED hose
- SCD’s
- LMWH or heparin
- Plan early post-op ambulation

Post-op Considerations

- Anesthesia emergence
- Transfer to post-anesthesia care
- Hypoxia
  - Sleep apnea
  - Oxygen support
- VTE prevention
  - Early ambulation issues
- Pain management
- Wound care
- Manage underlying metabolic comorbidities
Risk Reduction -- Antibiotic prophylaxis

ACOG
1. Cefazolin
   - If history of immediate hypersensitivity to penicillin:
   2. Clindamycin + gentamicin or quinolone or aztreonam
   3. Metronidazole + gentamicin or quinolone

SOF
1. Cefotetan, cefazolin, cefaclor, cefuroxime, or ampicillin/sulbactam
   - If allergy:
   2. Clindamycin + aminoglycoside or quinolone or aztreonam
   3. Metronidazole + aminoglycoside or quinolone

*Acceptable alternatives include cefotetan, cefazolin, cefaclor, cefuroxime, or ampicillin/sulbactam
†Ciprofloxacin or levofloxacin or moxifloxacin

Increase the antibiotic dose for patients weighing more than 220 lbs or with a BMI greater than 35 kg/m²

Tips for the high BMI vNOTES hysterectomy

• Positioning is key
  • Patient participation
  • Protect pressure points
  • Perineum placement

• Minimize Trendelenburg
  • Pack the bowel (Kerlix / Sponges / Raytech)
  • Reduce pneumoperitoneum pressure
  • Elevate perineum
  • Tag the peritoneum during initial entry
  • Cross the sutures over the vPATH access system and tie to secure
  • Alternatively suture the port to the perineum

vNOTES Bowel Packing

Tips for the high BMI vNOTES hysterectomy

• vPATH Access port considerations
  • Consider 11 cm (large) ring
  - May need to unroll the ring before insertion if the vault is long
  - Consider utilization of an additional ring “rolled together” to lengthen the reach
  - Use the introducer where possible
  - May need ring forceps to position the inner ring if the vault is too long
  - Retract “mons panniculus” and labia, possibly temporarily suture

• Prep the bowel to ease manipulation by reducing intraluminal chime
• Use Bariatric instruments
• Use technology – Advanced Bipolar, Suture devices
• Release pneumoperitoneum before closing

vNOTES in a High BMI Patient

Tips for the high BMI vNOTES hysterectomy

• Be meticulous about hemostasis
• Use appropriate antibiotics
• Remove catheter
• VTE prevention with anticoagulation, compression hose and SCDs
• Consider use of mechanical elevation of the abdominal wall
• Monitor for positioning issues
• Partner with anesthesia team
  • Anesthetic technique
  • Positioning
  • Pre and post-op care

38 y/o
402 lbs (182.3 kg)
62" (157.5 cm)
BMI 73.53
G2P2
C/S x 2
Umbilical hernia repair
Diagnostic Laparoscopy
Laparoscopic Cholecystectomy
References

1. ACOG Committee Opinion, Number 619, January 2015 (Reaffirmed 2019)
2. ACOG Committee Opinion, Number 701, June 2017
vNOTES
How to complete a difficult hysterectomy

Prof. Dr. Jan Baekelandt MD PhD
Imelda Hospital Bonheiden Belgium
K.U.Leuven University Belgium

Disclosure:
Consultancy Applied Medical

Challenges in vNOTES Hysterectomy

Narrow Introitus
Narrow or Long Vagina
High BMI
Large Uterus
C-Section
Prolapse
Anterior Myoma
Previous Surgery
Adhesions
Endometriosis

Narrow Introitus
Modified Lord’s procedure

Narrow or Long Vagina
TVNH approach Total Vaginal NOTES Hysterectomy

High BMI
Muscle Relaxation
Trendelenburg
Systematic emptying of pelvis
Large Gelpoint vPath – Alexis extra
Extra trocar – rectum traction
Packing
Large Uterus

- vNOTES preferred approach
- uterine artery
- camera position
- abdomen vs pelvis
- gravity

To bag or not to bag

C-Section

- vNOTES approach to Anterior Colpotomy

Prolapse

- Elongated cervix
- Large Gelpoint vPath – Alexis
- High USLS

Anterior Myoma

- vNOTES approach to Anterior Colpotomy

Previous Surgery

- vNOTES preferred approach
- Avoid adhesiolysis
- Avoid trocar risk

Adhesions

- vNOTES adhesiolysis
- Video
Endometriosis

Contraindication?

vNOTES

Broadens the indications for vaginal surgery

Preferred approach – complex hysterectomies

References

None
Assembly Bill 1195 was signed into law on July 1, 2006 requiring local CME providers, such as the AAGL, to assist in enhancing the cultural and linguistic competency of California’s physicians (researchers and doctors without patient contact are exempt). This mandate follows the federal Civil Rights Act of 1964, Executive Order 13166 (2000) and the Dymally-Alatorre Bilingual Services Act (1973), all of which recognize, as confirmed by the US Census Bureau, that substantial numbers of patients possess limited English proficiency (LEP). It is the intent of the Legislature to encourage physicians and surgeons, continuing medical education providers located in California, and the Accreditation Council for Continuing Medical Education to meet the cultural and linguistic concerns of a diverse patient population through appropriate professional development.

Linguistic Competence: Providing readily available, culturally appropriate oral and written language services to limited English proficiency (LEP) members through such means as bilingual/bicultural staff, trained medical interpreters, and qualified translators.

Cultural Competence: A set of congruent behaviors, attitudes, and policies that come together in a system or agency or among professionals that enables effective interactions in a cross-cultural framework.1

Cultural and Linguistic Competence: The ability of health care providers and health care organizations to understand and respond effectively to the cultural and linguistic needs brought by the patient to the health care encounter.

Cultural competence requires organizations and their personnel to:
• Value diversity.
• Assess themselves.
• Manage the dynamics of difference.
• Acquire and institutionalize cultural knowledge.
• Adapt to diversity and the cultural contexts of individuals and communities served.

California Business & Professions Code §2190.1(c)(3) states that associations that accredit continuing medical education courses shall develop standards before July 1, 2006, for compliance with the cultural competency requirements. The associations may update these standards, as needed, in conjunction with an advisory group that has expertise in cultural and linguistic competency issues. Cultural competency means a set of integrated attitudes, knowledge, and skills that enables a health care professional or organization to care effectively for patients from diverse cultures, groups, and communities. At a minimum, cultural competency is recommended to include the following: (A) Applying linguistic skills to communicate effectively with the target population. (B) Utilizing cultural information to establish therapeutic relationships. (C) Eliciting and incorporating pertinent cultural data in diagnosis and treatment. (D) Understanding and applying cultural and ethnic data to the process of clinical care, including, as appropriate, information pertinent to the appropriate treatment of, and provision of care to, the lesbian, gay, bisexual, transgender, and intersex communities.

Title VI of the Civil Rights Act of 1964 prohibits recipients of federal financial assistance from discriminating against or otherwise excluding individuals on the basis of race, color, or national origin in any of their activities. In 1974, the US Supreme Court recognized LEP individuals as potential victims of national origin discrimination. In all situations, federal agencies are required to assess the number or proportion of LEP individuals in the eligible service population, the frequency with which they come into contact with the program, the importance of the services, and the resources available to the recipient, including the mix of oral and written language services. Additional details may be found in the Department of Justice Policy Guidance Document: Enforcement of Title VI of the Civil Rights Act of 1964 [link](http://www.usdoj.gov/crt/cor/pubs.htm).

Executive Order 13166, “Improving Access to Services for Persons with Limited English Proficiency”, signed by the President on August 11, 2000 [link](http://www.usdoj.gov/crt/cor/13166.htm) was the genesis of the Guidance Document mentioned above. The Executive Order requires all federal agencies, including those which provide federal financial assistance, to examine the services they provide, identify any need for services to LEP individuals, and develop and implement a system to provide those services so LEP persons can have meaningful access.

Dymally-Alatorre Bilingual Services Act (Assembly Bill 305) requires that state agencies that serve a substantial number of non-English-speaking people employ a sufficient amount of bilingual persons in order to provide certain information and render certain services in a language other than English.