

# VAGINAL HYSTERECTOMY: A LOST ART?



**Howard Herrell, MD, FACOG**

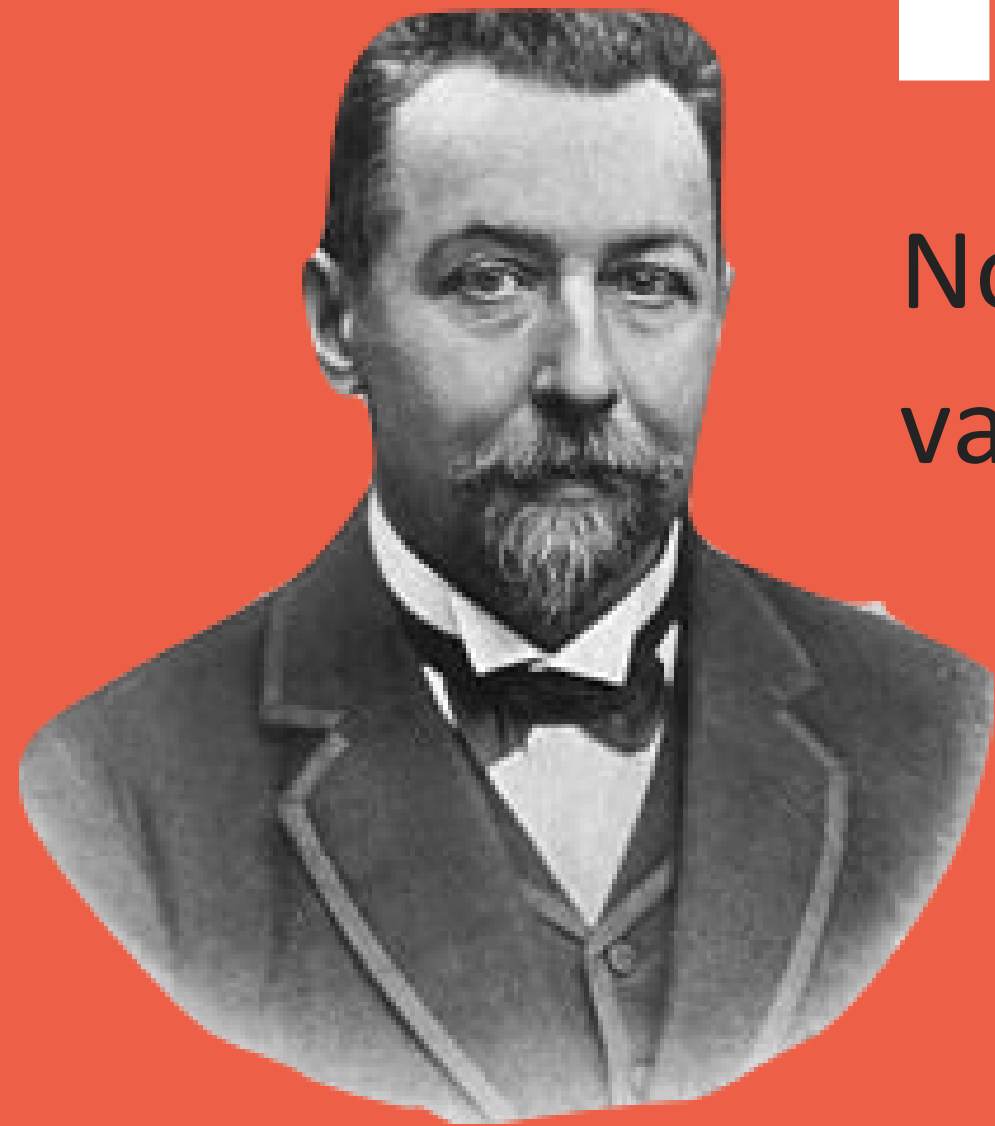
Chair, TN Section ACO

D7 Legislative Chair, ACOG

[Thinking About Ob/Gyn Podcast](#)

# DETAILS / DISCLOSURES

01. Questions: Please ask anything as we go and we'll also have later for questions.
02. Disclosures: I wrote a book about vaginal hysterectomy. It's not a source of income.
03. Me: Find me at [hherrell@gmail.com](mailto:hherrell@gmail.com).
04. Apologies: Don't be offended if I do something differently than you do.
05. Experience: I do more than 98% of hysterectomies vaginally and haven't done a non-VH in several years.



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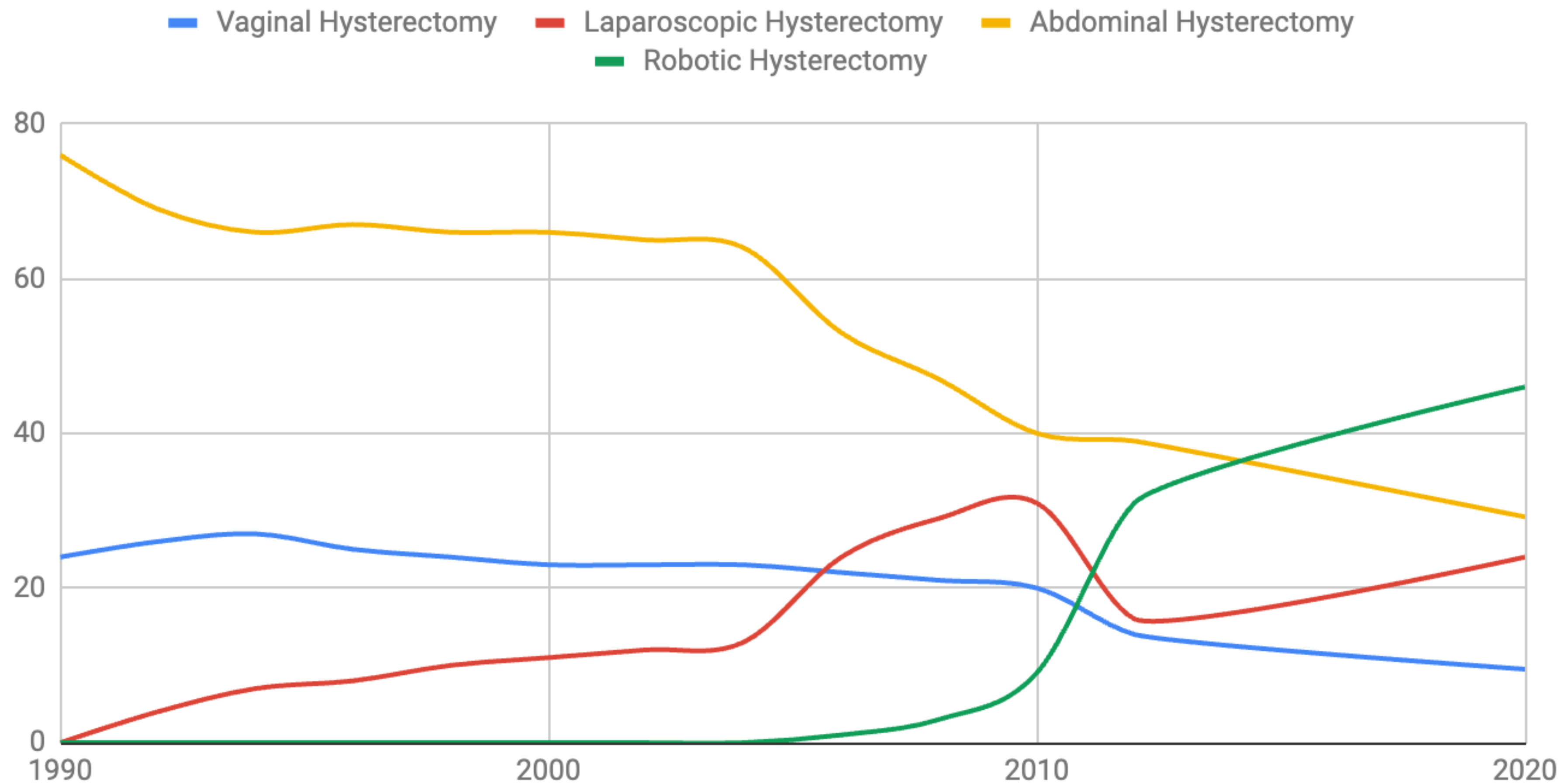
No man can call himself a gynecologist until he can perform a vaginal hysterectomy...

Eugene Doyen

”

# TRENDS IN ROUTE OF HYSTERECTOMY 1990-2020

## Vaginal Hysterectomy, Laparoscopic Hysterectomy, Abdominal Hysterectomy and Robotic Hysterectomy



# WHY THE CHANGE?



1900

MOST HYSTERECTOMIES WERE DONE VAGINALLY

The golden age of the laparotomy with William Halstead and Howard Kelly, combined with cases commonly done for oncological reasons, all but killed VH.

It didn't die due to Heaney and Bonney.

2000

MOST HYSTERECTOMIES WERE DONE ABDOMINALLY

Despite overwhelming evidence of the superiority of VH to AH, the damage was done. Instead of reinvigorating VH, the field got excited about endoscopy.

2025

MOST HYSTERECTOMIES WILL BE DONE **ROBOTICALLY**

The golden age of industry-driven fads and trends, combined with a large part of training delivered by Gyn-Onc, conspire once again to murder VH.

WHY

VH?

● IF IT'S TOUGH, WHY NOT JUST DO IT  
ENDOSCOPICALLY?

# OUTCOMES

## LESS BLOOD LOSS

AH: 5.7%

LH/RH: 3.0%

VH: 1.6%

## FEWER BLADDER INJURIES

AH: 0.9%

LH/RH: 1.0%

VH: 0.6%

## FEWER URETER INJURIES

AH: 0.3%

LH/RH: 0.3%

VH: 0.04%

## FEWER BOWEL INJURIES

AH: 0.2%

LH/RH: 0.4%

VH: 0.1%

## FEWER FEBRILE EVENTS

AH: 2.5%

LH/RH: 1.0%

VH: 0.9%

## LEAST MAJOR COMPLICATIONS

AH: 4.0%

LH/RH: 4.3%

VH: 2.6%

(including PE and death)



# OUTCOMES

## CHEAPER

LH: \$11,558

RH: \$13,429

LAVH: \$10,068

VH: \$7,903

## LESS PAINFUL

According to every study except one industry-funded, Italian study

## QUICKER

VH: 42 minutes

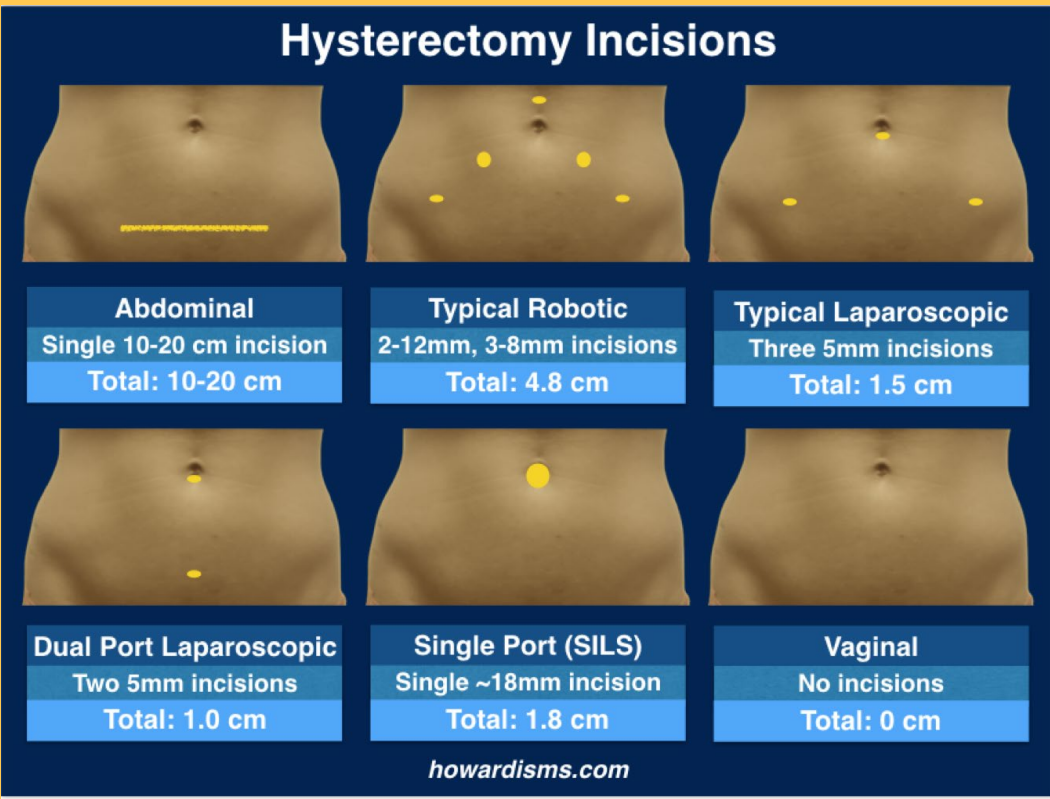
LH: +37 minutes

RH: +varies widely

## QUICKER RETURN TO WORK

And quicker recovery in general, with lower associated societal costs

## LEAST INVASIVE



## LESS CUFF DEHISCENCE

At least 6 times less likely than endoscopic hysterectomy as well as almost 4 times lower rate of conversion to laparotomy, and less likely to be readmitted or have additional surgery



# RECOMMENDATIONS

# 1.

ACOG:

“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.”

# 2.

AAGL:

“It is the position of the AAGL that most hysterectomies for benign disease should be performed either vaginally or laparoscopically and that continued efforts should be taken to facilitate these approaches. Surgeons without the requisite training and skills required for the safe performance of VH or LH should enlist the aid of colleagues who do or should refer patients requiring hysterectomy to such individuals for their surgical care.”

# 3.

Howard Herrell:

“Vaginal hysterectomy should be the rule, not the exception.”

## Achieving high value in the surgical approach to hysterectomy



James L. Whiteside, MD; Carson T. Kaeser, MD; Beri Ridgeway, MD

Value-based care, best clinical outcome relative to cost, is a priority in correcting the high costs for average clinical outcomes of health care delivery in the United States. Hysterectomy represents the most common and identifiable nonobstetric major surgical procedure among women. Surgical approaches to hysterectomy in the United States have changed in recent decades. For benign indications, clinical evidence identifies the superiority of vaginal hysterectomy over all other routes. These conclusions rest on clinical outcomes; however, cost differentials also exist across hysterectomy approaches, with the vaginal approach consistently incurring the lowest overall costs. Taken together, vaginal hysterectomy has the highest value, whereas the robotic (given high costs) and abdominal approaches (given less favorable clinical outcomes) have less value. Traditional laparoscopic hysterectomy holds an intermediate value. Increasing the use of high-value hysterectomy approaches can be achieved by adopting multimodal strategies, with changes in the payment models being the most important.

### James L. Whiteside

Health care quality and cost-effectiveness can be summarized as clinical value.<sup>1</sup> Value is calculated by dividing clinical outcome by the cost to deliver it. For example, a very expensive therapy that has marginal care outcomes would have poor value. It is well known that the United States spends the most money on health care per capita for equal or worse health outcomes compared to other high-income nations. To address this situation, thought leaders are promoting value-based health care delivery. Such an approach, at a minimum, re-

delivers best clinical outcomes relative to cost. This approach is featured in Accountable Care Organizations and in the Quality Payment Program that was created with the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

Hysterectomy represents the most common nonobstetric major surgical procedure among women, with approximately 400,000 hysterectomies performed annually in the United States.<sup>2</sup> The procedure is almost exclusively performed by gynecologic surgeons and has undergone a

purpose of this commentary is to identify barriers and to share evidenced-based strategies to increase the use of high-value hysterectomy in the setting of benign disease.

### Current State of Hysterectomy<sup>2</sup>

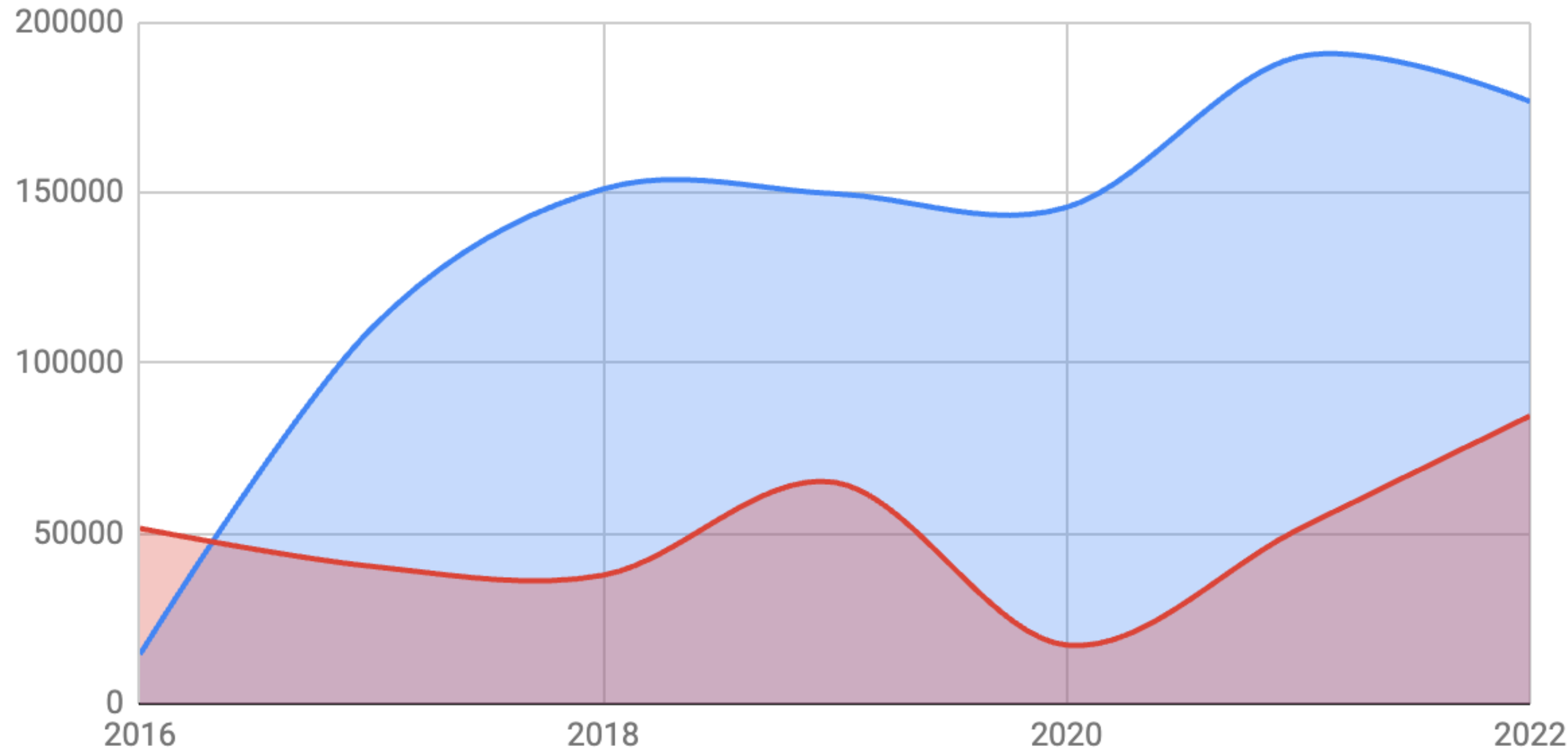
Despite favorable clinical and cost outcomes and the endorsement by professional organizations nationally<sup>5</sup> and internationally,<sup>6</sup> the vaginal approach has not been prioritized in the United States. In fact, from 1998 to 2010, the rate of inpatient vaginal hysterectomy dropped nearly 8% to 16.7%.<sup>2</sup> To be sure, there are settings in which a vaginal hysterectomy cannot be performed, including malignancy and poor vaginal access (ie, small vaginal caliber or lack of uterine descent), but these exceptions are not the rule. Of all hysterectomies, 90% are performed for benign indications,<sup>7</sup> and vaginal access problems (including obesity<sup>8</sup> or prior cesarean delivery<sup>9</sup>) are much less common or impactful than believed, as demonstrated by some nations achieving vaginal hysterectomy rates in excess of 40%.<sup>10</sup>

As in a quality improvement setting,



# CooperSurgical and Intuitive

■ CooperSurgical ■ Intuitive



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## comes After Total or Total Vaginal ri

itorial

### aginal Hysterectomy

istorical Footnote or Viable Route?



Arnold P. Advincula, MD

Choosing the route of hysterectomy for benign disease has, as of late, become a charged topic, especially with the changing gynecologic surgical landscape. The advent of robotics, the morcellation controversy, paradigm shifts in residency training, and a push toward value-based medicine are just some of the issues not only confronting today's gynecologic surgeons but also influencing the route of hysterectomy. The American College of Obstetricians and Gynecologists continues to recommend vaginal hysterectomy as the approach of choice whenever feasible, and although clinical evidence and societal endorsements support vaginal hysterectomy as a superior high-value modality, the rate of vaginal hysterectomy in the United States has continued to decline.<sup>1,2</sup>

In this month's issue of *Obstetrics & Gynecology*, Schmitt et al (see page 761) describe the prospective use of a decision-tree algorithm to determine the route of hysterectomy, and in doing so demonstrate the safety and feasibility of vaginal hysterectomy for the majority of their patients at Mayo Clinic, Rochester. The decision-tree algorithm was used in planning the surgical approach for 365 patients; in the end, the majority of patients qualified for and successfully underwent vaginal hysterectomy.<sup>3</sup>

Although promising for the future of vaginal hysterectomy at first glance, several aspects of this study require further dissection. First, the generalizability of this algorithm raises concerns, especially given the mostly white demographic makeup of the study participants combined with smaller uterine weights (less than 200 g). Additionally, the expertise of the study surgeons cannot be overlooked. Traditionally, gynecologic surgery at Mayo Clinic, Rochester has been and still is performed by fellowship-trained surgeons with high surgical volume in either female pelvic medicine and reconstructive surgery or gynecologic oncology. For the rate of vaginal hysterectomy to increase nationally, its performance cannot be relegated to just tertiary-care private teaching hospitals with highly skilled subspecialists practicing in a homogenous community; it must be successfully implemented among the specialists in obstetrics and gynecology practicing in a variety of settings and locations. Implementation of this algorithm in a large and diverse metropolitan area such as New York City or Chicago, even if performed by highly skilled surgeons, would likely yield different results.

Hence, the performance of vaginal hysterectomy raises real-world practice challenges. As Schmitt et al indicate in their article, the vast majority of trainee graduates are likely ill prepared to perform vaginal hysterectomy given the minimum of only 15 over 4 years required to graduate as per Accreditation Council for Graduate Medical Education standards.<sup>4</sup> When combined with the inherent low-volume surgical case load of the majority of specialists in obstetrics and gynecology, a clinical conundrum exists: should vaginal hysterectomy as a route of surgery be promoted in the setting of least taught and least performed among a majority of practicing low-volume

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One p  
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21.8%  
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See related article on page 761.

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Original Research

## Determining Optimal Route of Hysterectomy for Benign Indications

Clinical Decision Tree Algorithm

John A. Occhino, MD, Amy L. Weaver, MS, Kalyan S. Pasupathy, PhD, and John B. Gebhart, MD

Of 36 (11.4%) abdominal. Of 743 procedures, 38 (5.1%) involved laparotomy and 154 (20.7%) involved robotic technique when a vaginal approach was expected. Robotic hysterectomies had longer operations (141 compared with 59 minutes,  $P<.001$ ) and higher rates of surgical site infection (4.7% compared with 0.2%,  $P<.001$ ) and urinary tract infection (8.1% compared with 4.1%,  $P=.05$ ) but no difference in major complications ( $P=.27$ ) or readmissions ( $P=.27$ ) compared with vaginal hysterectomy. Algorithm conformance would have saved an estimated \$800,000 in hospital costs over 5 years.

**CONCLUSION:** When a decision tree algorithm indicated vaginal hysterectomy as the route of choice, vaginal hysterectomy was associated with shorter operative times, lower infection rate, and lower cost. Vaginal hysterectomy should be the route of choice when feasible.

*Obstet Gynecol* 2017;129:130–8

DOI: 10.1097/AOG.0000000000001756

More than 430,000 hysterectomies were performed in the United States in 2010, most commonly for leiomyomas (40.7%) and endometriosis (17.7%).<sup>1,2</sup> The American College of Obstetricians and Gynecologists published the committee opinion “Choosing the Route of Hysterectomy for Benign Disease,”<sup>3</sup> concluding that vaginal hysterectomies have fewer complications and better outcomes than laparoscopic or abdominal, which was reiterated in a Cochrane review.<sup>3</sup>

Surgical approach has generally not been standardized because it has been health care provider-dependent based on physician preferences with emphasis on indications, patient physical characteristics, concomitant procedures, and surgeon experience. Kovac et al<sup>4</sup> published an expert opinion algorithm on benign hysterectomies, showing success of vaginal hysterectomy in many cases previously performed through laparotomy.<sup>4–6</sup> No current validated, evidence-based methods are available to assist

OBSTETRICS & GYNECOLOGY

WHY

WHY?



# RATIONALIZATIONS

## MARKETING

Industry makes millions from endoscopic equipment and thus heavily promotes endoscopic routes

## OPERATING IN THE DARK

False belief of surgeons that more exposure is better

## POOR TRAINING

Skillset of experienced vaginal surgeons is dying. Most vaginal work now done by Urogyn who typically operate on easiest prolapse cases

## NEWNESS FALACY

New is not necessarily better

## OBSOLETE TECHNIQUES

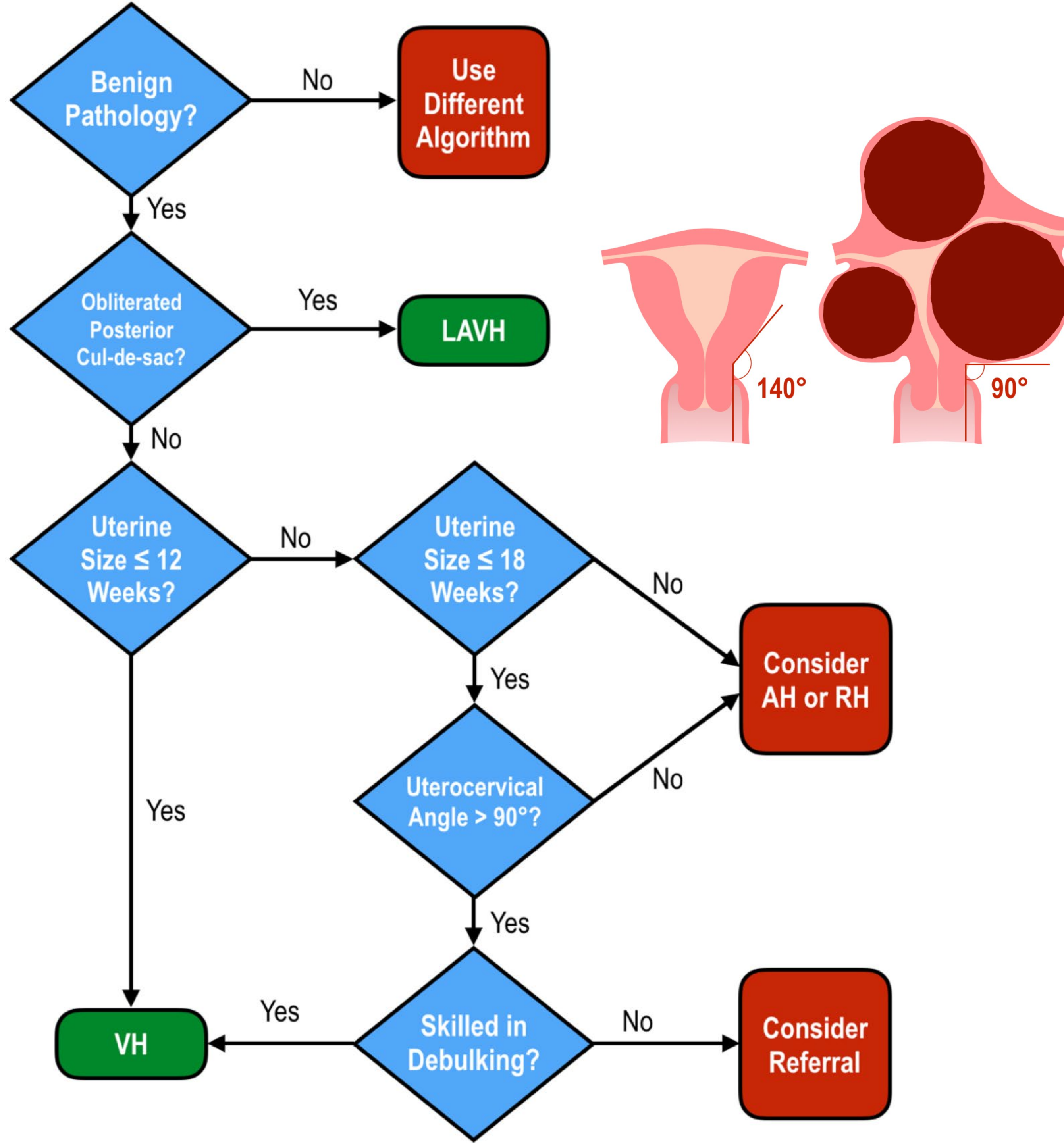
Stubborn adherence to old ways (like clamp-cut-tie or anterior colpotomy first) is killing VH

## WHAT ELSE?

WHO

VH?





# ROUTE SELECTION ALGORITHM

At least 65% of cases are on the left-side

At least 88% of cases can be done with basic techniques (minimal debulking)

Advanced techniques enable at least 97% success

WHO

NOT?



Advanced pelvic malignancy



Severe endometriosis with obliterated cul-de-sac



Adnexal pathology suspicious for malignancy



A uterus greater than 18-weeks-gestation size



Large uterus with uterocervical angle  $\leq 90$  degrees

# CONTRAINDICATIONS TO VH

These are rare

**BUT...**

**TROUBLE**

“

It is interesting to note that those who persist in perfecting themselves in the technique of vaginal hysterectomy gradually disregard more and more of the contraindications so intensely laid down by those with little to no familiarity with the operation.

N. Sproat Heaney

”

# OBSTACLE S

## LACK OF DESCENSUS, OBESITY

Nulliparity, no prior vaginal delivery,  
narrow introitus, morbid obesity

## DIFFICULT ANTERIOR COLPOTOMY

Prior cesareans, lower anterior fibroid

## SIZE

Fibroids, adenomyosis

## DIFFICULT POSTERIOR COLPOTOMY

Obliterated posterior cul-de-sac,  
endometriosis

## NEED FOR ADNEXECTOMY

Salpingectomy, oophorectomy

## ADHESIONS

Prior cesareans with adhesions to  
abdominal wall, other prior  
abdominal or pelvic surgeries

## WHAT CAUSES A LACK OF DESCENT?



**MY**

APOLOGGI

ES

# ENERGY SEALING DEVICES

USE OF AN ENERGY  
SEALING DEVICE  
DURING VH IS AN  
EXAMPLE OF AN  
ENABLING  
TECHNOLOGY



## QUICKER

Multiple studies show that operating times are reduced nearly in half, depending on the experience of the surgeon and difficulty of the case

## LESS BLOOD LOSS

On average, blood loss is reduced by 40%

## LESS PAIN

A consistent finding in multiple studies is less pain which also tends to allow for higher rates of same day discharge

# ENERGY SEALING DEVICES

SOMETHING THIS  
ADVANTAGEOUS  
BECOMES THE  
STANDARD OF CARE



## EASIER

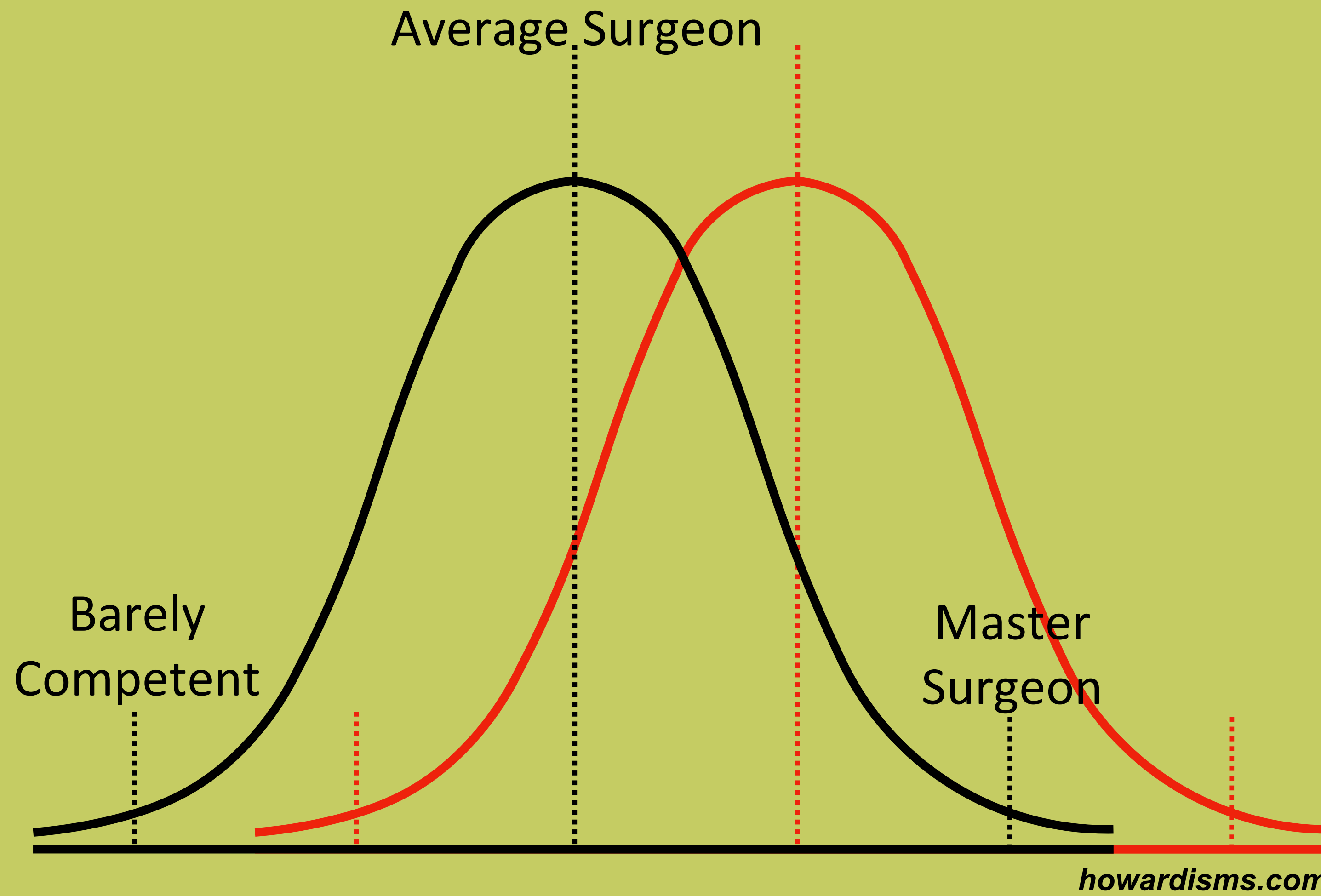
There's something to be said for making VH easier: it increases enthusiasm of the surgeon and the learner

## MAKES DIFFICULT CASES POSSIBLE

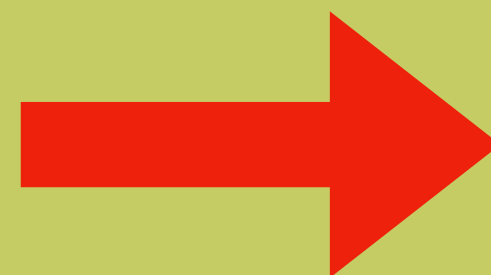
As an enabling technology, they expand the range of cases possible for a vaginal surgeon

## SAFE

Studies consistently show the safety of using energy sealing devices



Enabling Technologies  
Better Technique  
Consistency/Lean

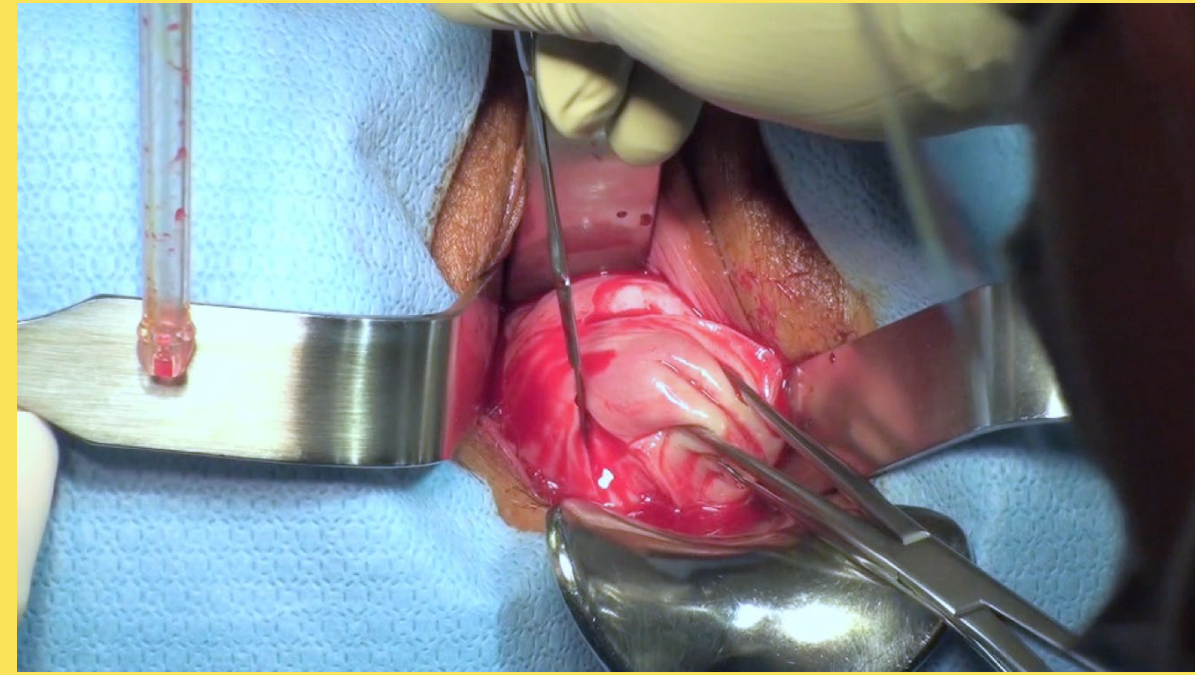


**SIMPLIFIED VAG**

**HYST**

**THE BASIC TECHNIQUE**





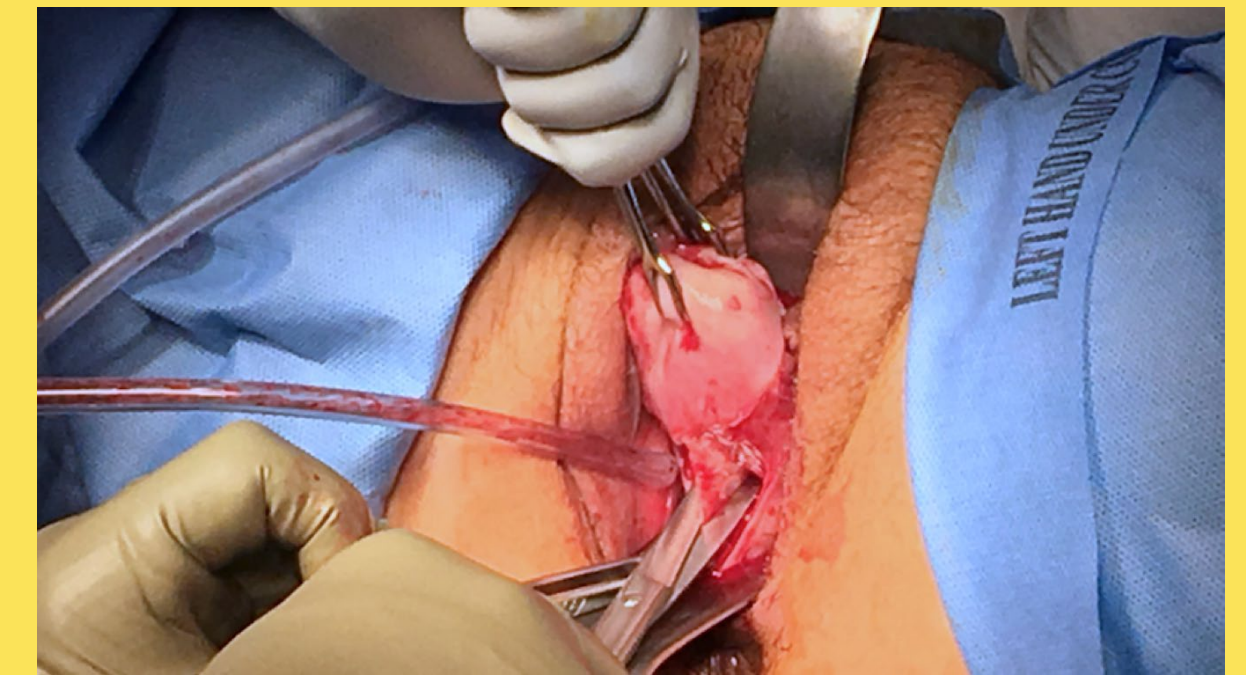
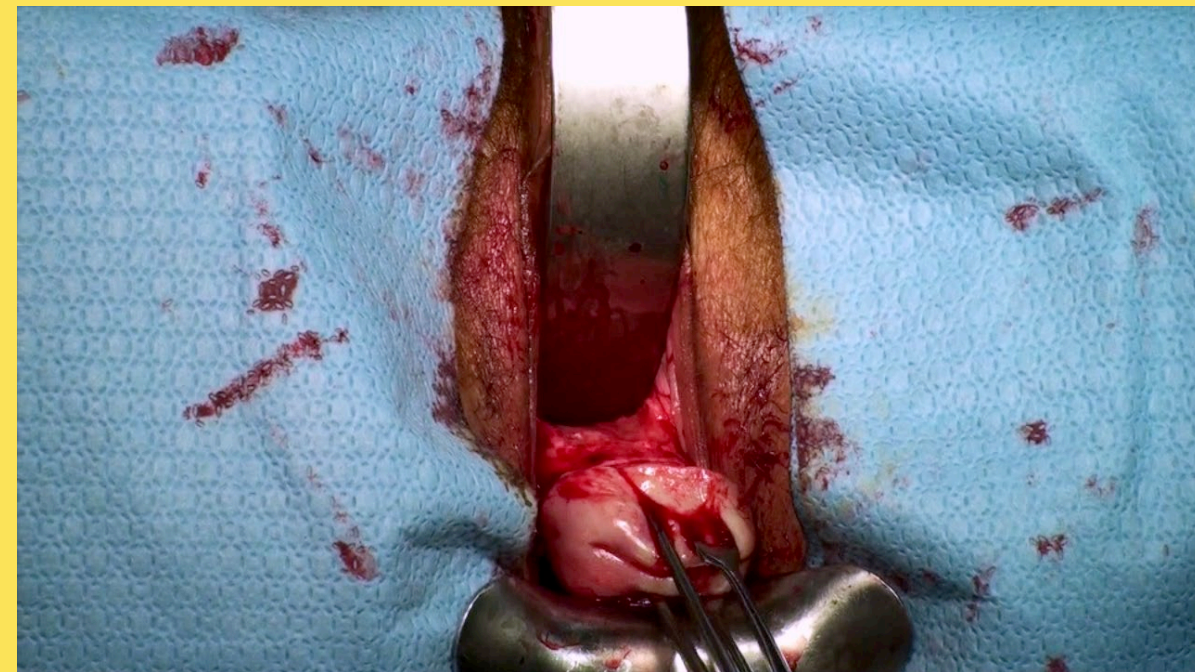
### 1 Cervical circumcision

Using a scalpel, deep into the tissue, after infiltration with bupivacaine/vasopressin

2

### Posterior colpotomy

Made sharply with scissors and with the peritoneum tagged to the vaginal mucosa



3

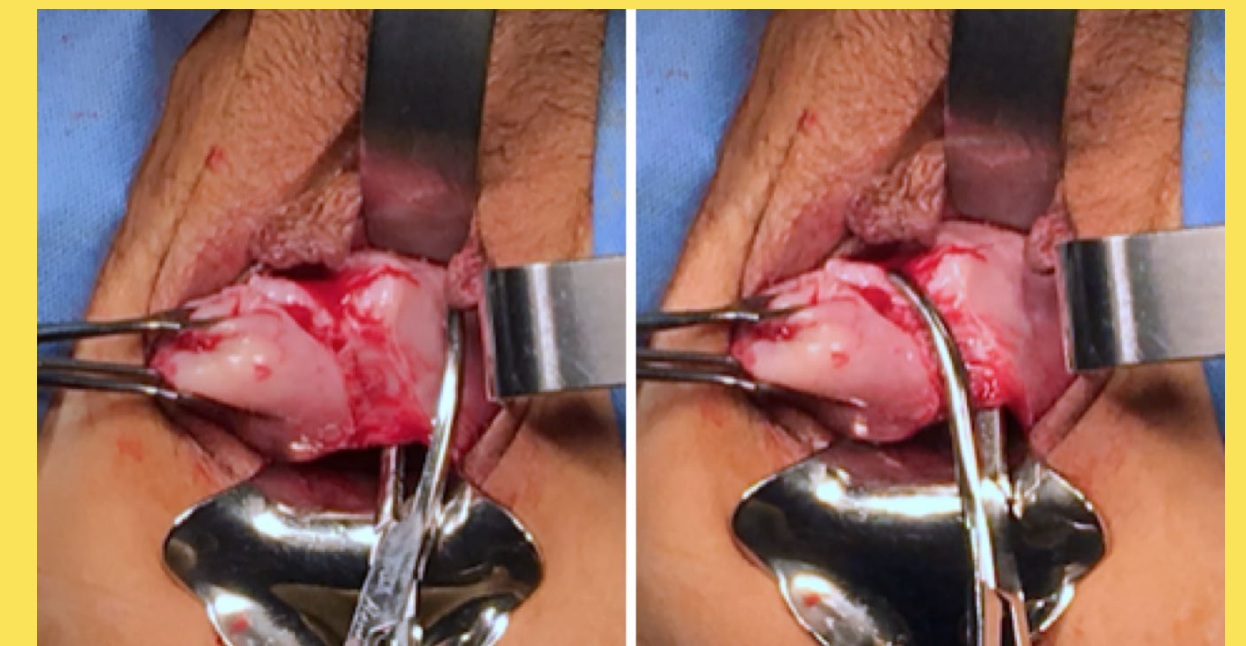
### Mobilization of bladder

To roll back ureters and bladder pillars and make room for USL clamps

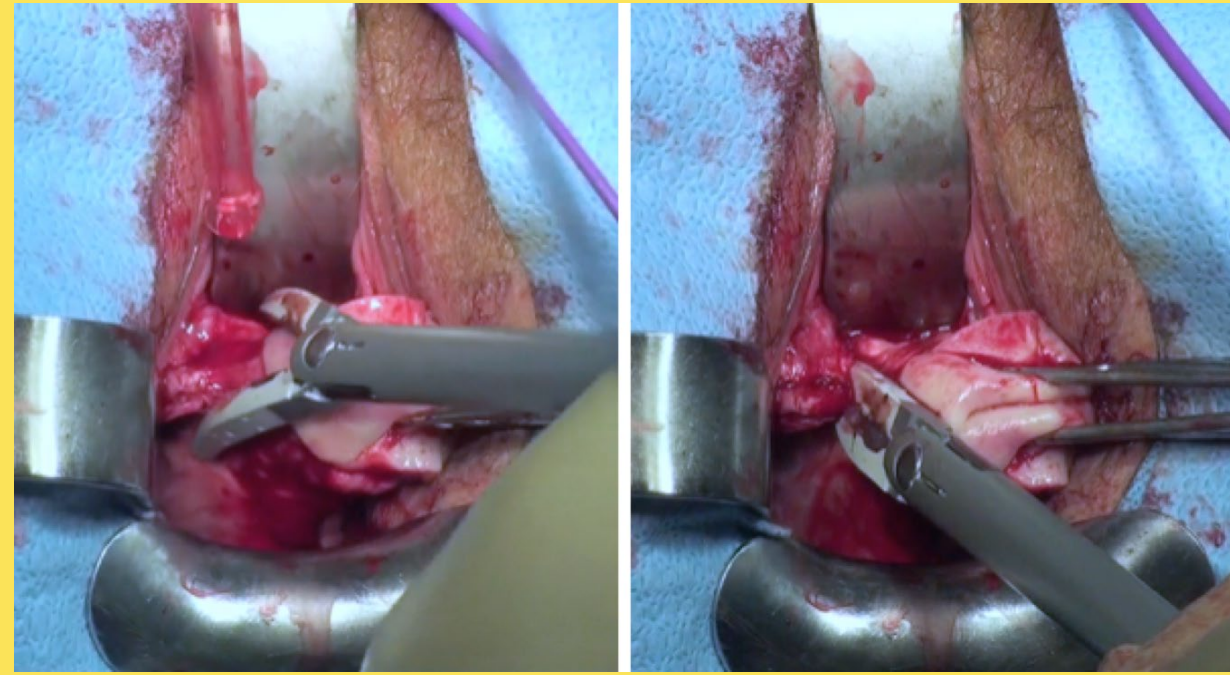
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### Division of USL

With traditional clamp, division, and suture to preserve pedicles for reconstruction

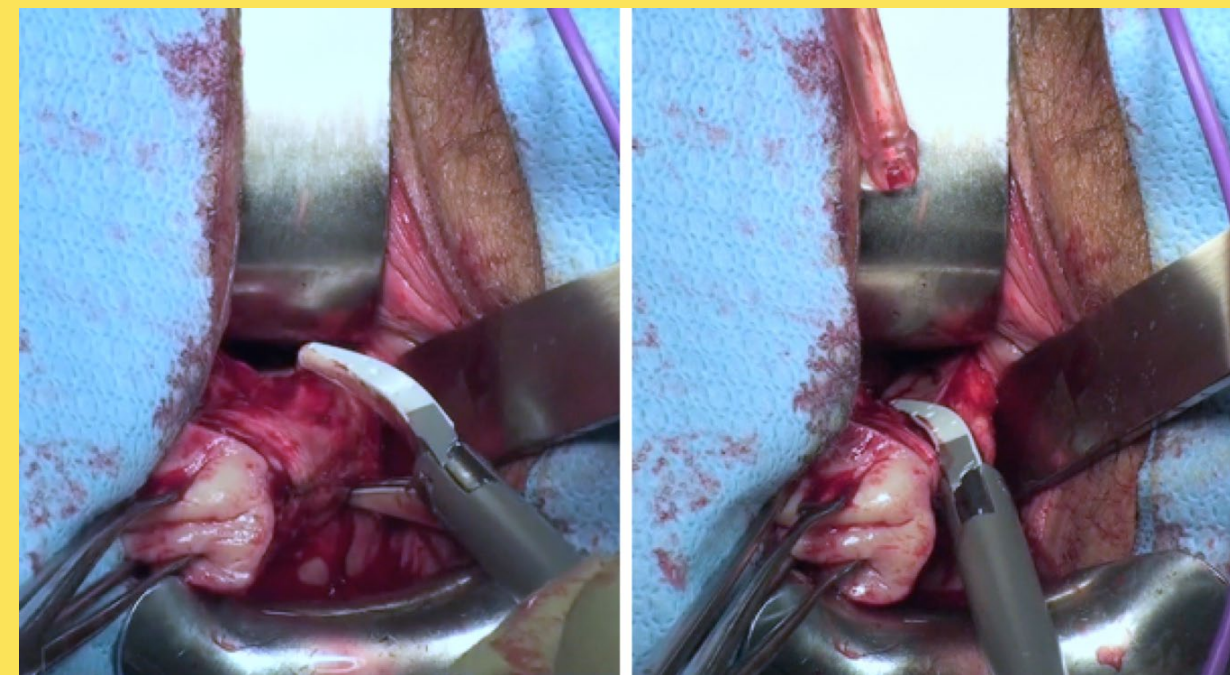






### Anterior Colpotomy

Sharply with correct anatomic knowledge



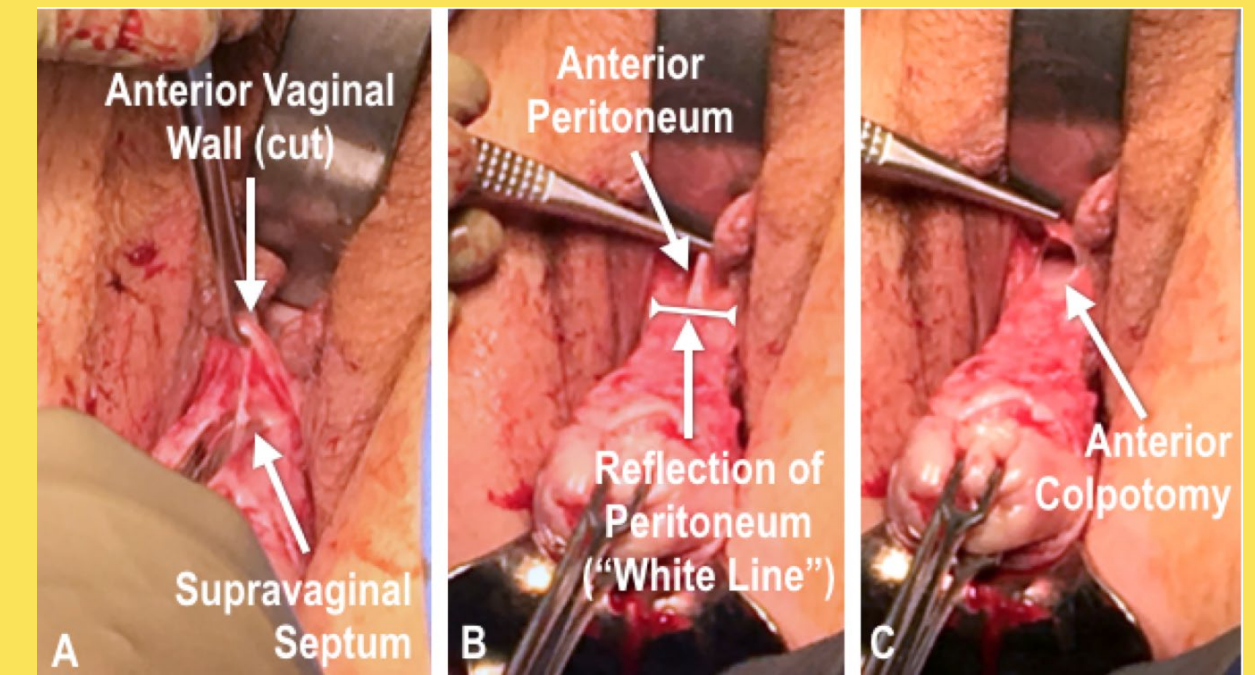
### Delivery of fundus

If possible to allow thermal sealing of remaining pedicles away from viscera

5

### TS&D of CL and UA

Thermal seal and division to gain descent and control blood loss

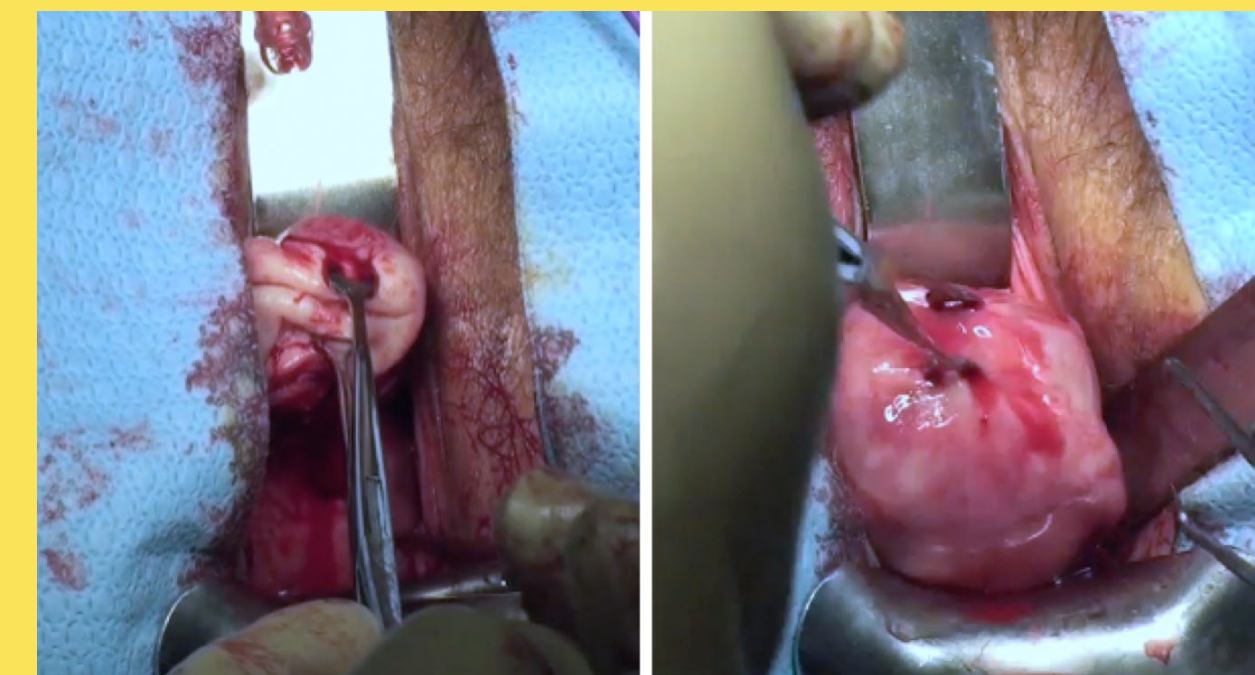


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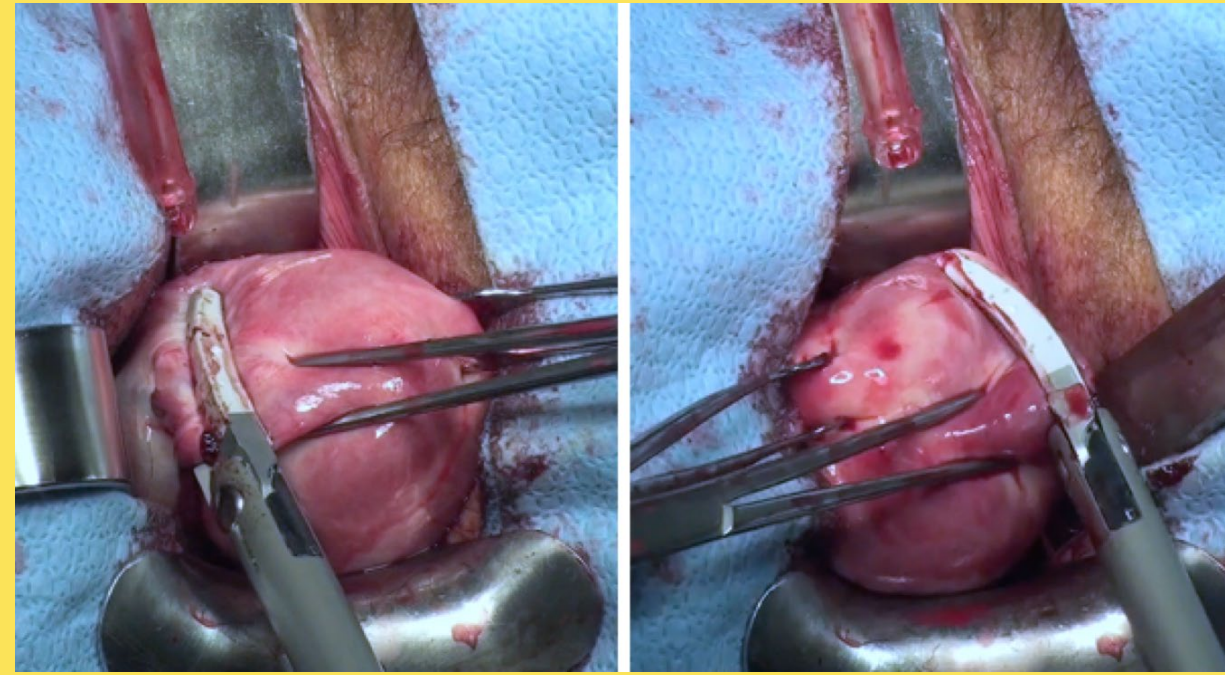
### TS&D of BL

Thermal seal and divide remaining broad ligaments



8





### Culdoplasty/Closure

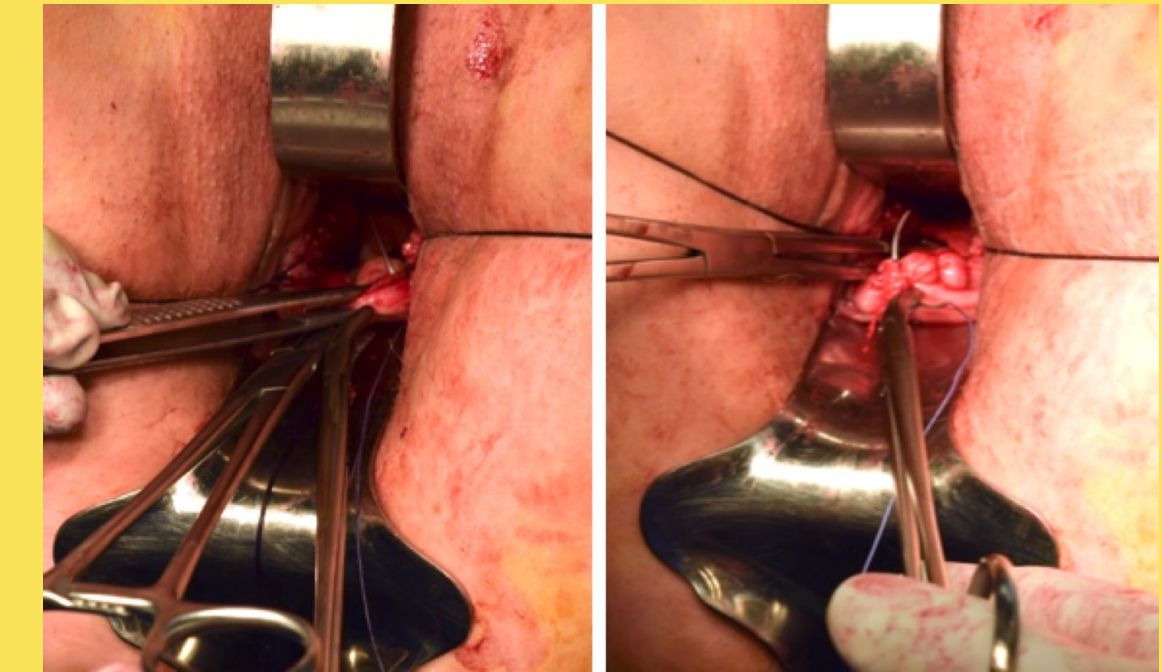
Perform any necessary pelvic floor repairs and close cuff in a vertical manner

10

9

### TS&D of remainder

Divide upper pedicles ± tubes/ovaries with energy device



## Send home in 3-4 hours

Usually needs no more than 15 narcotic tablets. Return to work in 1-2 weeks depending on type of work.

NOT A LOST ART...

A MISSING  
MASTERPIECE

[Vaghyst.com](http://Vaghyst.com)

[Thinkingaboutobgyn.com](http://Thinkingaboutobgyn.com)

[hherrell@gmail.com](mailto:hherrell@gmail.com)