

Editorial Commentary on 28 Years of Using Hysterectomy Guidelines to Determine the Feasibility of Vaginal Hysterectomy

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Hysterectomy Guidelines to Determine the Feasibility of Vaginal Hysterectomy

The journal of Vaginal Hysterectomy and Reconstructive Vaginal Surgery will present a commentary from well-known Gynecologic surgeons to comment on what is considered a most important article with each issue. This is the first issue of this Journal, so I will write the first commentary on my own article that I hope the readers will find helpful.

“28 years using hysterectomy guidelines to determine the feasibility of vaginal hysterectomy.”

In order to understand how gynecologic surgeons select and perform hysterectomy surgery today requires some understanding of the history of hysterectomy.

The surgical approach to pelvic disease through the vaginal canal is not only one of the oldest but also one of the safest and most satisfactory procedures in gynecology. Surgeons working in other surgical fields that may be reached through a natural passage have generally appreciated this increased factor of safety. Major pathologic growths were removed regularly through the mouth and throat, the aural and nasal passages, and the urethra and rectum. It is somewhat challenging to comment on one's own research, so my comments are to clarify the reasons and conclusions on this topic that has been so important to me in teaching my residents and fellows how to select the route of hysterectomy as well as perform the method of hysterectomy that I believe from my years of research offers the safest method for uterine removal with the least complications, the most rapid recovery, and the most cost-effective.

The pioneer surgeons in gynecology, especially in the days before aseptic techniques were developed, found that they could remove major growths through the vagina with greater safety than they could through the abdominal wall. In the earliest days of gynecologic surgery, death regularly followed laparotomy. Recovery from vaginal self-removal of the uterus had been observed, so several of the early brave gynecologists began their attempts to relieve those suffering women by planned vaginal hysterectomy. There was intense opposition to their efforts, but they persisted despite it. Soon almost all types of serious pelvic disease ranging from acute and chronic adnexal inflammation to large uterine and ovarian tumors were being approached surgically through the vagina, especially in France. In 1899 the French surgeon Duhrssen reported on his phenomenal results obtained by vaginal surgery. He reported on 1,600 vaginal hysterectomies with an uncorrected mortality rate of 2%.

The evolution and perfection of the abdominal hysterectomy technique is distinctly American. The American operation was almost

unknown in France in the late 19th century until Segond published on the details of this operation after visiting the United States. Some U.S. surgeons abandoned vaginal hysterectomy as it was thought easier for them to surgically manage certain conditions they believed required a total view of the abdominal cavity or was thought too difficult or even impossible to perform by the vaginal route by surgeons who were not trained or did not want to be trained in the vaginal method.

By the late 19th century, vagina hysterectomy had become a safe operation and was favored over the abdominal route because of the risk of laparotomy. In the early 20th century, surgeons who performed all their hysterectomies by the abdominal route sought center stage and established numerous contraindications to justify their selection of the abdominal method, in order to influence surgeons and patients away from what they did not believe in, the vaginal route. Their proposed contraindications were accepted absolute and have affected the selection of the abdominal route of hysterectomy compared to the vaginal route by most gynecologic surgeons for most of the 20th century (Table 1).

Abdominal hysterectomy for more serious disease	Intra-abdominal conditions that contraindicate vaginal approach
Uterus "too big"	Adhesions
Vagina "too narrow"	Endometriosis
Pubic Arch<90°	Adnexal disease
Bituberous diameter<8.0 cm	Previous pelvic surgery
Uterus "too high" or will not come down	Chronic pelvic pain
	Previous caesarian delivery
	Vaginal hysterectomy for less serious disease
	Mainly prolapse or sterilization

Table 1: Traditional indications and contraindications for selecting the abdominal or vaginal route in the early 1900s.

These proposed indications require some clarification to several questions that were infrequently asked or answered:

- How big is too big and how was that measured?
- How narrow should the vagina be and how was that determined?
- A bituberous diameter is an obstetrical concern so how does that affect the non-pregnant patient?
- How were the intrabdominal conditions diagnosed and to what degree of accuracy?

In 1813, the German surgeon Langenbeck performed the first the first planned and successful removal of the uterus by the vaginal route. He did not to consider any contraindications to performing this operation by the vaginal method. Thus, Langenbeck must be credited with helping to establish an important surgical procedure, as he had to devise his own plan for the first documented vaginal removal of the uterus. In the United States in 1815 Joseph Glover of South Carolina performed a vaginal hysterectomy and removed a solid tumor mass weighing 5 pounds and measuring 11 inches from the fundus in a direct line to the point of section and was 15 to 18 inches circumference at its greatest diameter. This was the first report of a vaginal removal of the uterus in a nulliparous woman, a condition considered a contraindication to the vaginal route for removal of the uterus for the next 200 years. Nulliparity is still considered by many modern day gynecologists a contraindication to the vaginal method. Glover did not consider nulliparity or the size of the uterus as a contraindication. According to the contraindications established by abdominal surgeons in the early 1900s, Glover should not have been successful in performing this procedure thru the vagina. However, today “nulliparity” and an “enlarged uterus” continue to be a contraindication to the vaginal method. Both patients’ of Langenbeck and Glover had unremarkable post-operative recovery and a rapid return to normal activities after two weeks.

Many gynecologic surgeons of the 21st century still follow the proposed contraindications developed in the 19th century to justify their selection of abdominal-type hysterectomies. Few American surgeons had interest in the vaginal removal of the uterus and had more interest in developing techniques for removal of the uterus via the abdomen, e.g. AH, LH and RH. For many years third-party payers reimburse more for abdominal or laparoscopic route rather than the vaginal method, as they were led to believe the vaginal method should not to be used when there was a suspicion of more severe pathology that required only abdominal- type methods. However, the documentation and proof of more serious pathology was seldom proved intraoperatively or postoperatively even today.

The national average Medicare payment to surgeons who perform abdominal-type procedures i.e. Abdominal hysterectomy(AH), Laparoscopic(LH) or robotic hysterectomy(RH), reimburse several hundreds of dollars more than the vaginal method, when the uterus is “stated,” but not documented, to be >250 g. What effect does this higher reimbursement have on physician decision-making on the type of hysterectomy selected? Perhaps it is too much of an influence. One must wonder why Medicare does not require verification of the weight of the uterus for abdominal hysterectomy, since the Medicare payment for physician reimbursement is \$1012 for an abdominal hysterectomy for any size uterus even those <250 g. Vaginal hysterectomy on the other hand is reimbursed \$840 if the uterus weighs <250 g, and Laparoscopic hysterectomy is reimbursed \$897 for a uterus that weighs <250 g. When a vaginal hysterectomy is performed for a uterus weighing >250 g, the surgeon is reimbursed \$1170 or \$172 dollars more than for abdominal hysterectomy, even if the pathologic weight of the uterus following abdominal hysterectomy was documented to be of normal size (70-125 g).

In addition, Medicare also reimburses \$329 more for a total laparoscopic hysterectomy when the uterus is reported to be <250 g. Thus, Medicare pays abdominal hysterectomy surgeons even more for those that have a normal size uterus removed when the presumptive weight of the uterus was stated to be enlarged. It appears that vaginal

and laparoscopic surgeons are held to a different standard for those who have an abdominal hysterectomy.

In the 1980s, in an attempt to reduce the numbers of “unnecessary hysterectomies for small leiomyomata”, some third- party payers (BC/BS) demanded the uterus should be at least 12 week (280 g) size before they authorized insurance payment for such cases. Gynecologists only had to state that the uterus was 12-week size and the surgery (abdominal hysterectomy) was immediately approved. It is hardly understandable why the comparison of the postoperative pathologic weight to the preoperative assessment of uterine size was never assessed.

For years the number of hysterectomies performed has long been a concern, now the appropriateness of the surgical method is under more careful scrutiny. There are two questions today that should be answered: (1) What is the clinically appropriate route and method for a hysterectomy in a given patient, and (2) What is the most evidence-based approach for hysterectomy. Although hysterectomy is a relatively routine surgical intervention, its morbidity and costs have significant economic impact in terms of health care dollars and lost work days. It has been estimated that hysterectomy costs for one year in the United States equals \$5 billion dollars. However, when hospital cost and physician reimbursement and time from work are considered, the cost increases 5-to 10-fold. Because of the marked variation in health care for alternative hysterectomy procedures, the approach selected for hysterectomy procedures impact the cost of surgery.

It is clearly unclear why Medicare reimburses more for abdominal, laparoscopic and robotic hysterectomies for removal of a uterus weighing <250 g when hospital charges for these types of hysterectomies have been shown to be less cost-effective. The hysterectomy guidelines presented require accurate preoperative documentation of uterine weight and verification by preoperative ultrasonography that can accurately determine uterine weight.

The guidelines demonstrate that there is a relationship between the diagnosis requiring the need for a hysterectomy and the weight of the uterus. The NCHS reports that abnormal uterine bleeding (AUB) is a most common indication for AH, LH, and RH, however, mean uterine weight in the guidelines study for AUB reported on 1551 patients with a mean weight of 145 g and a mean range of 66-236 g. Since the NCHS reports that AH, LH and RH are most commonly performed for the diagnosis of AUB, questions the need for selection of alternative abdominal-type procedures for this indication. This study shows when 1551 patients with AUB were subjected to the guideline algorithm had no concerns of an enlarged uterus, vaginal inaccessibility or extra uterine pathology and all AUB patients had successful vaginal hysterectomy. Why then, we must ask are AH, LH and RH selected for AUB so frequently. Is it possible that physician practice style or increased reimbursement is reasons for this type of decision-making?

The decision-tree algorithm used for the selection of the appropriate method of hysterectomy considers in this order:

- Is the uterus accessible for vaginal removal?
- Does the uterus weigh <280 g or >280 g.
- Are size reduction techniques possible for uterine weight>280 g.
- Is suspected pathology confined to the uterus?
- If extra uterine disease such as adhesions are suspected when subjected to intraoperative laparoscopy are they present or not, and are adhesions mild, moderate or severe.

This article suggests that this step-by-step approach to determining appropriate candidates for the selection of the appropriate method of hysterectomy is based on the assessment of vaginal access, uterine size, and the extent of pathology. The American College of Obstetrics and Gynecology reaffirmed the use of guidelines in the 2011 Committee Opinion #444 that referenced the use of these guidelines in their decision-making of this opinion. The major conclusion was that, in general, vaginal hysterectomy is associated with better outcomes and fewer complications than abdominal or laparoscopic-type hysterectomy.

Technical feasibility can be determined by the guidelines that assist in resolving the possibility of technical “wobble room” or “practice style” that has existed for too many years. Every major surgical society recommends vaginal hysterectomy when it is technically feasible; therefore any decision for selection of a particular route must correctly answer what feasibility means. The guideline algorithm for determining the route of hysterectomy provides a method to evaluate technical issues for determining both accurate diagnosis and the feasibility of the vaginal route, as well as identifying accurately when abdominal-type or laparoscopic-type hysterectomies may be necessary. The guidelines are very useful to resolve “wobble room” or “practice style” that have allowed abdominal methods to be selected more than they should.

There is little doubt that as the skill in vaginal surgery increases more indications can be performed by the vaginal route. The guidelines assist in not only determining the accuracy of the pathology but also the feasibility of vaginal hysterectomy.

We welcome those of you that have an interest in the vaginal approach of hysterectomy. We would certainly be interested in publishing the results your work if you use this hysterectomy guideline for one year and send your results to us. We will publish your findings.

Gynecologists are exposed to the vagina more than any other specialties of medicine. The specialty of ENT is exposed to mouth, ears and nose. Proctologists are exposed to the rectum more than other specialties, so the decision to perform surgery by these thru the natural orifice of their specialty was considered most appropriate. Gynecologists seem to prefer operating thru the abdomen for their most frequent operation, hysterectomy more than using the natural orifice of the vagina.

In the early 19th century European surgeons performed abdominal hysterectomy without anesthesia, antibiotics and blood transfusions with mortality rates of 30%. Abdominal hysterectomy required a large abdominal incision as surgeons of that time only knew how to remove a diseased uterus by this method and achieved.

European surgeons recognized the self-removal of the uterus thru the vagina by some women who survived this self-removal and began to remove the uterus thru the vagina. There was intense opposition to this method, but they persisted in spite of severe criticisms of the uterus by this method and achieved remarkable mortality rates of less than 2% with rapid post-operative recovery.

American surgeons did not appear to have interest in the remarkable work by French surgeons who removed the diseased uterus thru the vagina. In the United States hysterectomy during the 19th century American surgeons perfected the abdominal method as they were unaware of the vaginal method performed in France and other European countries. Abdominal hysterectomy can be said to be distinctly an American operation that has persisted for more than 100 years.

The first vaginal hysterectomies were performed in the U.S. in the early in the early 1800s, however because of the high mortality rates for this procedure associated with cervical cancer it was almost abandoned by the early 20th century. By that time abdominal hysterectomy enjoyed widespread acceptance as improvements in anesthesia and aseptic techniques made the large abdominal incision comparable to vaginal removal in terms of safety/mortality. Surgeons who performed the abdominal method sought center stage and proposed many contraindications to the vaginal approach recommending that the vaginal approach only be performed for sterilization or uterine prolapse. Thus, women in the U.S. were given only one option when they needed a hysterectomy that meant a large abdominal incision with prolonged recovery.

Although many U.S. surgeons continued to perform Vaginal Hysterectomy, it was not until the 1900s that the widespread use of this method actually began. Between 1900 and 1930 articles began to appear in the medical literature that promoted the increase use of the vaginal method for expanding indications, whereas those opposed to the operation discussed the many proposed contraindications to the method. In the U.S. surgeons were divided into two groups: those who operated through the vagina and those who performed and recommended only the abdominal method. Third party payers were convinced that the proposed contraindications to the vaginal method were absolute and did not reimburse the vaginal approach for many of the same indications performed abdominally which persists today. Abdominal hysterectomists suggested that the two operations were not competitive because they were performed for different indications although this belief was not substantiated. In fact, in 1982 and later in 1990 and it was confirmed that both methods of hysterectomy were performed for similar indications yet were reimbursed differently. The abdominal approach was always reimbursing more than the vaginal method even for similar indications.

The field of gynecology has been remiss in failing to establish specific clinical guidelines for selecting the appropriate route of hysterectomy, and the wide acceptance of laparoscopic and robotic techniques has made the decision more complex. Informed decision making requires that surgeons know the expected outcome of each procedure and the desirability of each outcome. Good surgical practice dictates that the severity of the pathologic condition be the primary criterion for selecting the route of hysterectomy, not subjective factors such as the surgeon's experience or practice. This study has shown that a successfully completed hysterectomy in and of itself does not really reflect appropriate management.

This article was originally published in a special issue, entitled: "[Vaginal Surgery and Vaginal Reconstructive Surgery](#)", Edited by Stephen Robert Kovac