Hysterectomy for Benign Conditions of the Uterus

Total Vaginal Hysterectomy

Jenifer N. Byrnes, DO, John A. Occhino, MD, MS*

KEYWORDS

• Vaginal hysterectomy • Surgical technique • Challenging situations
• Managing complications

KEY POINTS

- Vaginal hysterectomy techniques may vary slightly due to training patterns and experience but it remains the safest, most cost effective route.
- Contraindications to vaginal hysterectomy include advanced pelvic malignancy, severe endometriosis or pelvic adhesions, and adnexal disease concerning for malignancy.
- Vaginal hysterectomy can be successfully accomplished in the setting of nulliparity, enlarged uterus, obesity, and previous cesarean delivery.

HISTORICAL PERSPECTIVE

Great interest in vaginal hysterectomy has developed during the last 25 years. With broadening of indications for this operation, numerous techniques have been developed, presented, and modified, each recommended for some real or assumed advantage over those preceding it; but most have not been retained in modern gynecologic practice … The succeeding clamp-and-ligature technique, modified by the experience of several thousand repetitions, is a rather standardized procedure offering anatomic simplicity, wide application, and great safety.

—Drs. John S. Welch and Lawrence M. Randall, Vaginal Hysterectomy at the Mayo Clinic (1961)

The vaginal hysterectomy had humble beginnings in 1507, performed by Glacomo Berengario da Carpi for uterine prolapse.[1,2] Over the next half century, vaginal hysterectomy began being performed for additional indications, including cervical cancer, with technique modification as surgical tools were developed. The first case series documented by Senn in 1895 reported a 75% mortality rate. Cadaveric dissections, antiseptic techniques, published surgical texts and evolving surgical tools contributed to subsequent improvement in outcomes.

Division of Gynecologic Surgery, Department of Obstetrics and Gynecology, Mayo Clinic, 200 First Street Southwest, Rochester, MN 55905, USA
* Corresponding author.
E-mail address: occhino.john@mayo.edu

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Abdominal hysterectomy began to gain favor in the late 1800s, but in the early twentieth century, Nobel Sproat Heaney advocated for vaginal hysterectomy for benign disease. Subsequently, Lash described a method of coring out bulky uterine tissue in 1941. In 1945, TeLinde endorsed Heaney, Danforth, and the Mayo group as expert vaginal surgeons and proponents for broader indications for vaginal hysterectomy.

TRENDS

Despite the continuous barrage of new technologies for hysterectomy, the vaginal hysterectomy remains the safest and most cost-effective approach, and is supported by numerous organizations, including the American College of Obstetricians and Gynecologists.[3] Despite this, survey data indicate only 79% of trainees feel confident performing a vaginal hysterectomy independently,[4] whereas fellowship directors believe only 20% of first year fellows were competent to perform a vaginal hysterectomy.[5] The increasing use of robotic technology has further decreased trainee exposure to vaginal hysterectomy.[6]

The number of hysterectomies performed annually in the United States continues to decline[7] and the largest proportion continue to be performed abdominally,[8] despite vaginal hysterectomy having lower complications, decreased operative time, reduced postoperative pain, and shorter hospital stay.[9–11]

High-volume surgeons are noted to have lower surgical costs, fewer complications, and better patient outcomes.[12,13] The increased use of minimally invasive laparoscopic and robotic hysterectomy has eroded the number of surgeons performing the original minimally invasive approach, vaginal hysterectomy. Surgeons, as specialists, need to reexamine previously held beliefs regarding relative contraindications to the approach. Vaginal hysterectomy can be successfully accomplished in the setting of nulliparity, enlarged uterus, obesity, and previous cesarean delivery.

Although there are data supporting vaginal hysterectomy for the treatment of early stage endometrial cancer[14] and advanced pelvic organ prolapse,[15] this article focuses on vaginal hysterectomy for benign disease.

BEST SURGICAL APPLICATIONS

Commonly accepted indications and contraindications for vaginal hysterectomy are found in **Box 1**.[3,16,17] Several studies have challenged relative contraindications to vaginal hysterectomy, including narrow pubic arch or vagina, nulliparity, history of laparotomy including cesarean delivery, absence of uterine descensus, or uterine enlargement.[10,18–24] Beyond patient factors, surgeon training and experience may affect the decision for hysterectomy route, even in patients who may be appropriate candidates for a vaginal approach.

A thorough medical and surgical history followed by a focused physical examination should be done on patients desiring hysterectomy. Particular attention should be paid to uterine size and mobility, presence of pelvic relaxation, adnexal masses, and pelvic pain during the physical examination. In an obese patient, in whom physical examination findings may be limited, preoperative imaging such as ultrasound will provide uterine dimensions and can be used to guide the choice of surgical route.[17]

TECHNIQUES

Preoperative Considerations

Screen for pregnancy

Any woman of reproductive age should be screened for pregnancy before undergoing hysterectomy and women at risk for pregnancy should be tested. Women with history