

Vaginal Hysterectomy: Dispelling the Myths

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Abstract

Despite advances in minimally invasive surgery, most hysterectomies are still performed by laparotomy. The ratio of abdominal to vaginal hysterectomies ranges from 1:1 to 6:1 across North America, and in Canada is approximately 3:1. The SOGC clinical practice guideline on hysterectomy states that the vaginal route should be considered for every hysterectomy; if it is assumed that most surgeons would try to follow accepted guidelines, vaginal hysterectomy is presumably being considered and excluded.

The evidence is compelling that vaginal hysterectomy is the approach of choice for benign pathology. The cited contraindications to vaginal hysterectomy are often unsubstantiated. In this commentary we examine the four reasons most often cited for avoiding a vaginal hysterectomy: (1) uterine size, (2) nulliparity and uterine descent, (3) need for oophorectomy, and (4) previous abdominopelvic surgery and extrauterine disease.

More research is necessary to evaluate and demystify the barriers to performing minimally invasive hysterectomy. We recommend that preceptorship programs be developed for gynaecologic surgeons in an attempt to decrease the ratio of abdominal to vaginal hysterectomies.

Résumé

Malgré les percées dans le domaine de la chirurgie minimalement effractive, la plupart des hystérectomies sont toujours effectuées par laparotomie. La proportion d'hystérectomies abdominales, par rapport aux hystérectomies vaginales, varie de 1:1 à 6:1 en Amérique du Nord; au Canada, elle se situe à environ 3:1. La directive clinique de la SOGC sur l'hystérectomie indique que la voie vaginale devrait être envisagée pour chacune des hystérectomies pratiquées; si l'on présume que la plupart des chirurgiens tentent de respecter les directives cliniques d'usage, on doit donc en venir à la conclusion que l'hystérectomie vaginale est d'abord envisagée pour ensuite être mise de côté.

Selon les données dont nous disposons, l'hystérectomie vaginale constitue de toute évidence l'approche à privilégier en présence d'une pathologie bénigne. Les contre-indications qui sont mentionnées en ce qui a trait à l'hystérectomie vaginale s'avèrent souvent sans fondement. Dans le cadre du présent commentaire,

nous nous sommes penchés sur les quatre raisons les plus souvent invoquées pour rejeter le recours à l'hystérectomie vaginale : (1) dimensions de l'utérus, (2) nulliparité et descente utérine, (3) nécessité de procéder à une ovariectomie et (4) antécédents de chirurgie abdominopelvienne et de pathologie extra-utérine.

D'autres recherches s'avèrent nécessaires afin d'évaluer et de démystifier les obstacles à l'exécution d'une hystérectomie minimalement effractive. Nous recommandons l'élaboration de programmes de préceptorat à l'intention des chirurgiens en gynécologie, et ce, pour tenter d'abaisser la proportion d'hystérectomies abdominales, par rapport aux hystérectomies vaginales.

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INTRODUCTION

Hysterectomy is a common operation, with up to 20% of women undergoing the procedure by the age of 60.¹ Most hysterectomies are performed abdominally. The ratio of abdominal to vaginal hysterectomy ranges from 1:1 to 6:1 across North America, and is approximately 3:1 in Canada.

In Canada in 1998–1999, 462 hysterectomies were performed per 100 000 women. The rate of hysterectomy varies by province from a low of 434/100 000 women over age 35 in British Columbia to a high of 750/100 000 women in Newfoundland.^{2,3}

A recent Cochrane review of surgical approach to hysterectomy for benign gynaecological disease, involving 3643 women in 27 trials, concluded that the vaginal approach is preferred to the abdominal approach. When vaginal hysterectomy is not possible, laparoscopic hysterectomy may avoid the need for an approach by laparotomy.⁴ The SOGC clinical practice guideline on hysterectomy states that the vaginal route should be considered for every hysterectomy done for benign disease, but qualifies this by stating that the selected approach depends on the surgeon's expertise, the indication for surgery, the nature of disease, patient characteristics, and the patient's preference.⁵

Why the abdominal route remains the predominantly used approach for hysterectomy in Canada is a matter for debate, especially in the light of strong evidence that the vaginal route results in fewer complications, shorter hospital stays

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and convalescence, lower hospital costs, and better quality of life outcomes⁶⁻⁹; in addition, the vaginal route carries cosmetic benefit.

Several theories may explain the disparity between scientific evidence and clinical practice. First, many surgeons believe that nulliparity, previous pelvic surgery (including Caesarean section), a need for oophorectomy, pathology outside the uterus (endometriosis and adhesions), and uterine enlargement are contraindications to using a vaginal approach for hysterectomy. This results in a high proportion of abdominal or laparoscopically assisted hysterectomies being performed when the procedure could be performed by the vaginal route. Second, surgeons may choose the abdominal route on the basis of their experience, comfort, and preference, and then proceed to justify their choice with the listed contraindications.

The objective of this commentary is to review the literature and elucidate the misconceptions that are held by some gynaecologists regarding contraindications and concerns in performing vaginal hysterectomy. We will examine the conditions most cited as reasons for avoiding a vaginal hysterectomy and review the evidence supporting the use of the vaginal route in these clinical settings.

REASONS GIVEN FOR AVOIDING VAGINAL HYSTERECTOMY

1. Uterine Size

There is no consensus on the uterine size or weight that would preclude undertaking a vaginal hysterectomy. A normal uterus weighs approximately 100 g, whereas a uterus of 12 weeks' gestational size weighs approximately 280 g. The American College of Obstetricians and Gynecologists has stated that vaginal hysterectomy is indicated for patients with a mobile uterus of less than 12 weeks' gestational size,¹⁰ but much larger organs can also be removed vaginally. Studies comparing the outcome of abdominal hysterectomy and vaginal hysterectomy in the presence of an enlarged uterus have demonstrated that vaginal hysterectomy is associated with less febrile morbidity, less reduction in hematocrit, less requirement for narcotic use, and shorter hospital stay, with no difference in intraoperative complications.¹¹⁻¹³

Several strategies, such as bisection, wedge morcellation, and coring, have been shown to facilitate vaginal hysterectomy in the presence of an enlarged uterus, with no increase in morbidity.¹⁴⁻¹⁸ With these options in mind, Davies et al. have estimated that the overall vaginal hysterectomy rate could be increased by 11.6% if the uterus is enlarged to the size of a 10 week pregnancy, by 24.4% if enlarged to 14 weeks, and by 30.4%, if enlarged to 18 weeks' gestational size.¹⁹

We have performed vaginal hysterectomy without added complication in the presence of a uterus weighing as much as 1 kg. Morcellation of the uterus is easily accomplished once the uterine vessels are secured, although it requires patience and fresh blades for the scalpel so that the incisions into the myometrium are smooth. The scalpel blade should be kept in view at all times to minimize the risk of small bowel injury, especially as the fundus nears. We decide whether a vaginal approach will be possible based on our impression of the lateral bulk of the uterus. A uterus that is positioned high in the pelvis and extends laterally to the pelvic sidewalls may not permit a vaginal approach to the uterine arteries. On the other hand, a large but mobile uterus that does not extend to the pelvic sidewalls will allow the surgeon to reach laterally and clamp the uterine vessels, after which morcellation is readily accomplished. In our experience, the position and mobility of the uterus are more critical than its size in making the decision regarding route of approach. When in doubt, it is logical to approach the uterus with a vaginal colpotomy. If it is possible to enter the posterior cul de sac, then anterior colpotomy should be attempted. If this is also possible, then the uterosacral, cardinal and proximal utero-ovarian ligaments should be clamped serially on either side. Morcellation can then be accomplished to deliver the uterus. If colpotomies are not possible, or the uterine vessels cannot be secured as the surgery progresses, then an abdominal approach is required.

2. Nulliparity and Lack of Uterine Descent

Nulliparity and minimal uterine descent are often cited by gynaecologists in justifying the need for an abdominal approach to hysterectomy. A number of studies have confirmed that it is safe to perform a vaginal hysterectomy in the presence of minimal or no uterine descent; the only associated concern is that the risk of operative hemorrhage appears to be increased in the presence of both uterine enlargement and minimal descent.²⁰⁻²²

In practice, a lack of uterine mobility and less than two fingerbreadths of vaginal access are more significant considerations with regard to operability than is nulliparity. These variables are sometimes difficult to gauge preoperatively, and are likely best assessed when the patient is anaesthetized prior to commencing surgery. In most patients the uterosacral and cardinal ligaments are relatively accessible vaginally, allowing further descent of the uterus as the surgery progresses. If posterior colpotomy is not possible and the ligaments are inaccessible, it is appropriate to convert to a laparoscopic or laparotomy approach. There is no increase in complications with this initial attempt at vaginal hysterectomy. Using this approach, up to 99% of planned vaginal hysterectomies could be completed vaginally.²⁰ The patient should be made aware before surgery that

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intraoperative conversion either to laparoscopy or laparotomy may be required.

In cases where hysterectomy cannot be completed vaginally, it is quite feasible to place a sponge within a surgical glove in the lower vagina and then proceed with a laparoscopy. The gloved sponge will prevent escape of CO₂ through the vagina, and the procedure can be completed endoscopically.

3. Need for Oophorectomy

Bilateral salpingo-oophorectomy (BSO) is the procedure most commonly performed concurrent with hysterectomy, and most are performed by the abdominal route. Many surgeons are reluctant to attempt BSO during vaginal hysterectomy because of concerns about decreased surgical access and visibility. However, most ovaries are visible and readily accessible during vaginal surgery, and it is generally safe to perform BSO at the time of vaginal hysterectomy.^{22,23} Up to 97.5% of prophylactic oophorectomies can be completed vaginally.²⁴ It can be concluded therefore that in the vast majority of cases prophylactic oophorectomy will be performed successfully regardless of the route of hysterectomy. In cases where prophylactic oophorectomy is performed because the patient is at high risk for developing ovarian or tubal malignancies, it may be prudent to consider a laparoscopically assisted vaginal hysterectomy in order to obtain peritoneal washings and to ensure that all adnexal tissue is removed. In the majority of cases, however, a vaginal approach is reasonable when there is no increased risk of malignancy or recurrent disease. If BSO cannot be completed vaginally as intended, and it is essential that BSO be performed, it is feasible to perform laparoscopic BSO intraoperatively. The pneumoperitoneum can be maintained by placing a surgical glove filled with sponges inside the vagina; this also facilitates vaginal retrieval of the ovaries before closure of the vaginal vault. Alternatively, the vault may be closed and the ovaries retrieved using endoscopic bags after laparoscopic BSO.

4. Previous Abdominopelvic Surgery and Extrauterine Disease

The wisdom of performing vaginal hysterectomy in a patient with previous pelvic surgery has been debated for many years. In a 1973 review of 621 hysterectomies, Coulam et al. concluded that previous pelvic surgery was not a contraindication to vaginal surgery.²⁵ However, in practice previous pelvic surgery is cited as the reason for choosing abdominal over vaginal hysterectomy in 28% of cases.¹⁹ Caesarean section (CS) is commonly recorded as the reason for performing abdominal rather than vaginal hysterectomy. However, a history of previous CS is a significant risk for accidental cystotomy at the time of

hysterectomy, regardless of approach; there is an increased risk with the laparoscopic approach as well, and no statistical difference in risk of bladder entry between the abdominal and vaginal routes.²⁶ We suggest that sharp dissection for bladder reflection during a vaginal hysterectomy is preferable to blunt dissection in preventing accidental cystotomy, as is the case at laparotomy. It has been our experience that damage to the bladder in women with a previous CS is usually easier to avoid during vaginal hysterectomy than during abdominal hysterectomy, because the initial dissection plane is below any bladder scarring from the CS.

Extrauterine pathology, such as endometriosis and pelvic inflammatory disease, is often cited as the reason for favouring an abdominal approach to hysterectomy. The surgical difficulty that extrauterine pathology may cause is often exaggerated; in the majority of patients, these conditions should not be considered a contraindication to vaginal surgery.^{6,25,27} Review of previous diagnosis and operative reports is recommended before choosing the route of hysterectomy.

When the preoperative history and examination findings suggest that there are extensive adhesions from previous surgery or significant extrauterine pathology, then laparoscopic evaluation may be useful in determining the severity of the pathology. If the pathology is absent or minimal, the surgeon may then proceed with vaginal hysterectomy. If the laparoscopic assessment shows moderate pathology but the posterior cul de sac is accessible, laparoscopic assistance may be appropriate. Severe pathology or an obliterated cul de sac may require an abdominal approach; the choice of approach is generally based on individual surgical experience and comfort.²⁸ In the presence of severe pelvic disease the benefits of quicker recovery from laparoscopy should be weighed against the higher incidence of major complications associated with abdominal hysterectomy.²⁹

THE CASE FOR VAGINAL HYSTERECTOMY

Most cholecystectomies in Canada are performed without laparotomy, and general surgeons continue to expand their minimally invasive surgical capabilities. Although gynaecologists were the first surgeons to use laparoscopy commonly, the expansion of their minimally invasive surgical skills seems to have stalled.

The evidence is compelling that the vaginal approach is to be preferred when considering hysterectomy for benign pathology. Furthermore, many of the contraindications to vaginal hysterectomy described by gynaecologists are unsubstantiated.

An abdominal hysterectomy is the preferred approach in some situations. In situations where technical difficulty is

expected it is acceptable to attempt a vaginal route, and subsequent conversion to a laparoscopic hysterectomy or to laparotomy should not be considered a complication but a necessary step to complete the proposed surgery. The substitution of the laparoscopic approach for vaginal surgery has no benefits; on the contrary, there is a longer operating time and greater hospital costs associated with laparoscopically assisted vaginal hysterectomy than with vaginal hysterectomy.^{4,29} Laparoscopic hysterectomy is indicated if it avoids the need for laparotomy. The recent report of Thiel and Kamencic advocated day surgery for total laparoscopic hysterectomy (TLH).³⁰ They concluded that TLH was more cost-effective than vaginal hysterectomy; the major reason for the cost saving was the short mean postoperative stay of 354 minutes, resulting from reduced postoperative pain. We suggest that the short postoperative stay resulting from the minimally invasive approach can also apply to the vaginal approach.

Preparing the patients and anticipating their likely recovery time have an important effect on postoperative length of stay. The assertion that TLH is followed by less bruising and less ischemic pain than vaginal hysterectomy is debatable.³⁰ On the contrary, electrocautery at the time of TLH may cause more pain than the ligation of pedicles at vaginal hysterectomy because of lateral thermal damage. A short postoperative length of stay following TLH is in part due to having experienced surgeons and to prophylactic use of antiemetics and analgesia, which should also be available for women undergoing vaginal hysterectomy.

We feel that a lack of training in vaginal surgery ultimately results in gynaecologists becoming reluctant to perform vaginal hysterectomy. We therefore recommend that preceptorship programs be developed for surgeons already in practice, and that access to vaginal surgery be facilitated for residents wherever possible, because we feel that such steps are key to increasing the number of hysterectomies attempted vaginally. This should lead to the ideal situation in which every gynaecologist is capable of performing vaginal hysterectomy, laparoscopic hysterectomy, and abdominal hysterectomy. In this situation, patients undergoing hysterectomy would have the procedure that is appropriate for them, rather than the procedure their gynaecologist is able to perform. In 1934, N. S. Heaney stated, "it is [my] purpose . . . to show again how low the mortality and morbidity of vaginal hysterectomy may be with the hope that this operation may find a place in the operative armamentarium of every gynecologist."³¹ More than half a century later, it is our professional responsibility to create opportunities for gynaecologic surgeons to maintain and upgrade their surgical skills. Canadian women expect no less.

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