

Choosing the Route of Hysterectomy for Benign Disease

Committee on Gynecologic Practice

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Abstract: Hysterectomies are performed vaginally, abdominally, or with laparoscopic or robotic assistance. When choosing the route and method of hysterectomy, the physician should take into consideration how the procedure may be performed most safely and cost-effectively to fulfill the medical needs of the patient. Evidence demonstrates that, in general, vaginal hysterectomy is associated with better outcomes and fewer complications than laparoscopic or abdominal hysterectomy. When it is not feasible to perform a vaginal hysterectomy, the surgeon must choose between laparoscopic hysterectomy, robot-assisted hysterectomy, or abdominal hysterectomy. Experience with robot-assisted hysterectomy is limited at this time; more data are necessary to determine its role in the performance of hysterectomy. The decision to electively perform a salpingoophorectomy should not be influenced by the chosen route of hysterectomy and is not a contraindication to performing a vaginal hysterectomy.

Hysterectomy is one of the most frequently performed surgical procedures in the United States. During 2000–2004, approximately 3.1 million hysterectomies were performed (approximately 600,000 per year). The most common indications for hysterectomy are symptomatic uterine leiomyomas (40.7%), endometriosis (17.7%), and prolapse (14.5%) (1).

Hysterectomies are performed vaginally, abdominally, or with laparoscopic or robotic assistance. When choosing the route and method of hysterectomy, the physician should take into consideration how the procedure may be performed most safely and cost-effectively to fulfill the medical needs of the patient. Most literature supports the opinion that, when feasible, vaginal hysterectomy is the safest and most cost-effective route by which to remove the uterus (2). However, analysis of U.S. surgical data shows that abdominal hysterectomy is performed in 66% of cases, vaginal hysterectomy in 22% of cases, and laparoscopic hysterectomy in 12% of cases (3).

and shape of the vagina and uterus; accessibility to the uterus; extent of extrauterine disease; the need for concurrent procedures; surgeon training and experience; available hospital technology, devices, and support; emergency or scheduled cases; and preference of the informed patient.

A narrow pubic arch (less than 90 degrees), a narrow vagina, an undescended immobile uterus, nulliparity, prior cesarean delivery, and enlarged uterus have been proposed by some authors as contraindications for vaginal hysterectomy. However, many nulliparous women and women who have not given birth vaginally have adequate vaginal caliber to allow successful completion of the vaginal hysterectomy (4). If the vagina will allow access to divide the uterosacral and cardinal ligaments, uterine mobility usually is improved enough to allow vaginal hysterectomy, even in cases where there is minimal uterine descent (5). When the uterus is enlarged, vaginal hysterectomy often can be accomplished safely by using uterine size reduction techniques such as wedge morcellation, uterine bisection, and intramyometrial coring.

Guidelines incorporating uterine size, mobility, accessibility, and pathology con-

Factors That Influence the Route of Hysterectomy

Factors that may influence the route of hysterectomy for benign causes include the size



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fined to the uterus (no adnexal pathology or known or suspected adhesions) have been proposed as selection criteria for vaginal hysterectomy (6). In a randomized trial, when residents followed specific guidelines for selection and performance of hysterectomy, the percentage of vaginal hysterectomies for benign conditions was more than 90%. Uterine morcellation and other uterine size reduction techniques were only necessary in 11% of cases (7).

Extrauterine disease such as adnexal pathology, severe endometriosis, or adhesions may preclude vaginal hysterectomy. However, in these cases, it may be prudent to visualize the pelvis with a laparoscope before deciding on the route of hysterectomy.

The decision to electively perform a salpingoophorectomy should not be influenced by the chosen route of hysterectomy and is not a contraindication to performing a vaginal hysterectomy. The success of removing the ovaries vaginally varies greatly and is reported to range from 65–97.5% (8–10). In a randomized trial that compared vaginal hysterectomy with bilateral salpingoophorectomy to laparoscopically assisted vaginal hysterectomy with bilateral salpingoophorectomy, there were more complications and increased operating time with the laparoscopic approach (11).

Outcomes and Complication Rates

Evidence demonstrates that, in general, vaginal hysterectomy is associated with better outcomes and fewer complications. A Cochrane review of 34 randomized trials of abdominal hysterectomy, laparoscopic hysterectomy, and vaginal hysterectomy, including 4,495 patients, concluded that vaginal hysterectomy has the best outcomes of these three routes. The review also found that when a vaginal hysterectomy is not possible, laparoscopic hysterectomy has advantages (including faster return to normal activity, shorter duration of hospital stays, lower intraoperative blood loss, and fewer wound infections) over abdominal hysterectomy; however, laparoscopic surgery also is associated with longer operating time and higher rates of urinary tract injury (2) (see Box 1).

The authors of one study compared vaginal and abdominal hysterectomy and found that abdominal hysterectomy was associated with 1.7 times more complications, 1.9 times more febrile morbidity, and 2.1 times more blood transfusions than vaginal hysterectomy (12). In another study, when women with enlarged uteri (200–1,300 gm) were randomly assigned surgery by the vaginal or abdominal route, the vaginal procedure resulted in decreased operative time, less febrile morbidity, reduced postoperative narcotic use, and shorter hospital stay (13).

When it is not feasible to perform a vaginal hysterectomy, the surgeon must choose between laparoscopic hysterectomy, robot-assisted hysterectomy, or abdominal hysterectomy. Experience with robot-assisted hysterectomy for benign conditions is currently limited (14). Abdominal hysterectomy is also an important surgical procedure, especially when the vaginal or laparoscopic approach is

Box 1. Comparison of Different Approaches to Hysterectomy

Vaginal Hysterectomy Compared With Abdominal Hysterectomy

- Shorter duration of hospital stay
- Faster return to normal activity
- Fewer febrile episodes or unspecified infections

Vaginal Hysterectomy Compared With Laparoscopic Hysterectomy

- Shorter operating time

Laparoscopic Hysterectomy Compared With Abdominal Hysterectomy

- Faster return to normal activity
- Shorter duration of hospital stay
- Smaller drop in hemoglobin
- Lower intraoperative blood loss
- Fewer wound or abdominal wall infections
- Longer operating time
- Higher rate of lower urinary tract (bladder and ureter) injuries

Data from Nieboer TE, Johnson N, Lethaby A, Tavender E, Curr E, Garry R, et al. Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database of Systematic Reviews* 2009, Issue 3. Art. No.: CD003677. DOI: 10.1002/14651858.CD003677.pub4.

not appropriate to manage the patient's clinical situation or when facilities cannot support a specific procedure.

Other Considerations

Cost analysis has consistently demonstrated that vaginal hysterectomy is the most cost-effective route (15, 16). Patient preference may influence the route by which the hysterectomy is performed (17). For example, despite the evidence that there is no significant difference in outcome between a supracervical hysterectomy and a total hysterectomy (18), some patients may choose a supracervical hysterectomy. In these cases, a laparoscopic or open abdominal approach is most appropriate.

Conclusions

Listed as follows are the conclusions of the ACOG Committee on Gynecologic Practice:

- Vaginal hysterectomy is the approach of choice whenever feasible, based on its well-documented advantages and lower complication rates.
- The choice of whether to perform prophylactic oophorectomy at the time of hysterectomy is based on the patient's age, risk factors, and informed wishes, but not on the route of hysterectomy.

- Laparoscopic hysterectomy is an alternative to abdominal hysterectomy for those patients in whom a vaginal hysterectomy is not indicated or feasible.
- Experience with robot-assisted hysterectomy is limited at this time; more data are necessary to determine its role in the performance of hysterectomy.

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