

Evidence-Based Hysterectomy

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What is the clinically appropriate route and method for hysterectomy in a given patient? Is this really a difficult question? Surprisingly, the delivery of healthcare services for hysterectomy varies both from community to community and from physician to physician. The numbers of hysterectomies performed have long been a concern; now the type of surgical route is being subjected to more careful scrutiny. For most of the 20th century, abdominal hysterectomy has been the preferred route by a 3 to 1 ratio compared to vaginal hysterectomy [1]. It can be argued that during this time many contraindications to the vaginal route were accepted as absolute by US surgeons who were frequently only taught the abdominal route. When competition between these two types of hysterectomy emerged, it was suggested that the routes were performed for different indications. This was never substantiated and in the year 2000, it was documented that not only abdominal and vaginal but also total laparoscopic and robotic hysterectomies were all performed for similar indications [2].

The popularity of abdominal hysterectomy has not been seriously challenged despite its higher rates of complication and morbidity, longer recovery time, higher costs, and higher levels of reimbursement for surgeons compared to the vaginal route. It was only after the CDC conducted the Crest Study in 1982 that stimulated other investigators to scrutinize the abdominal approach [1]. Although hysterectomy is a relatively routine surgical intervention, its cost and morbidity have a significant economic impact in terms of healthcare dollars and lost workdays [3]. The estimated nationwide cost of the procedure alone is \$5 billion annually. The estimated annual direct costs for treatment of fibroids are between \$4.1 to \$9.4 billion [4]. If we consider 650,000 hysterectomies are done each year and factor in hospital costs, physician reimbursement and time off from work for all other hysterectomy indications, that cost is closer to \$50 billion. Since there is marked variation in healthcare for alternative hysterectomy procedures, the approach selected for hysterectomy will impact on the costs of the surgery. To ensure that each patient receives the best possible care at reasonable costs, physicians must closely examine recent data comparing surgical approaches to hysterectomy [5-8].

One of the great contributions to surgery of the 20th century was the evaluation of surgical outcomes to measure the success of operations. Many believed these outcomes could be used to determine the most appropriate method of surgical care, regardless of indication. These concepts lead to what is now known as "evidence-based medicine." Clinical effectiveness research evaluates patient-related outcomes, clinical trials, and systematic reviews, which are the basis for the concept. Systematic reviews show which treatment methods have been proven to work and what remains unknown [5-7]. In the latter part of the century, economic outcomes including length of hospital stay were also evaluated; however, physician and hospital reimbursement was not evaluated.

Because there are significant differences in the medical and economic outcomes of abdominal, vaginal, and laparoscopic-type hysterectomies, the standard of appropriate care should be applied to the choice of surgical route for individual patients. The indications and contraindications for each method must be examined critically in light of both evidence- and outcome-based results. If the medical and economic outcomes of a particular route are clearly superior, physicians have an obligation to make the patient aware of the

advantages so together they can select the best possible treatment. As previously explained, not all hysterectomies demand a specific operative approach. Some can be performed vaginally, abdominally, or laparoscopically for similar conditions. Media attention has generated much consumer interest in laparoscopic and robotic hysterectomy. Enthusiasts have heralded these procedures as those of choice, but that is far from the truth. However, this belief has not withstood scientific scrutiny and it has been well documented that the laparoscopic procedures have no obvious advantages because most patients can be safely treated vaginally [6,9].

If the suggested indications for abdominal, laparoscopic, and robotic hysterectomy are when vaginal hysterectomy is not feasible, then how is the feasibility for vaginal hysterectomy determined? Three basic, technical issues determine the route for all methods of hysterectomy for benign disease: the size of the uterus; potential extrauterine attachments; and adequacy of the vaginal passageway.

Uterine Size

Stovall stated, "The greatest limitation to a surgeon's ability to routinely perform vaginal hysterectomy is an enlarged uterus" [10]. An enlarged uterus has been accepted as an indication for abdominal or laparoscopic hysterectomies, but this term has never been clearly defined. Evidence suggests that when postoperative uterine weight is examined, many hysterectomies were thought not to be feasible by the vaginal approach and deemed preoperatively "too large" actually could have been performed vaginally [1,2,8,11]. Therefore, a consensus must be reached as to the maximum uterine size an average gynecologic surgeon feels comfortable removing through the vaginal route as well as a size that mandates an abdominal or laparoscopic hysterectomy.

The normal uterus weighs approximately 70-125 grams [12]. Eighty percent of uteri removed in the United States for various indications weigh less than 280 grams, but are frequently suggested not feasible for the vaginal route [13]. The size and weight of the uterus can be objectively and accurately (98%) measured by preoperative ultrasonography, which could prevent selection of abdominal or laparoscopic methods when the uterine weight is less than 280 grams [12]. Currently, documentation of uterine size is not requested by third-party payers for either abdominal or laparoscopic cases, but it is demanded for all vaginal ones. Therefore, it is of critical importance to confirm and document the accuracy of the preoperative uterine weight before suggesting the vaginal route is not feasible.

Potential Extrauterine Pathology

If a patient's history or preoperative examination suggests

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extrauterine pathologic conditions extending beyond the confines of the uterus, accurate proof that these conditions exist is needed before suggesting vaginal hysterectomy is not feasible. This is the original concept of the article that named the procedure Laparoscopically Assisted Vaginal Hysterectomy (LAVH) [11]. When surgeons suggest that their choice of surgical route was based on clinical history or pelvic examination without further documentation of the severity of the pathologic condition, the surgical findings have often been insufficient to suggest the vaginal route was not feasible. Therefore, presumed extrauterine conditions must be confirmed.

Vaginal Passage way

The final major factor in determining the route of hysterectomy is vaginal accessibility. Despite the belief that accessibility is often offered as justification to avoid the vaginal approach, several investigators have reported that this is a most infrequent problem [14-16]. These three factors for uterine removal require accurate recording and documentation for determining the feasibility of the vaginal route, as well as the necessity if the abdominal or laparoscopic-type are selected for any indication. These factors also should be matched to each indication for each type of hysterectomy. The concepts and method of decision analysis are valuable objective tools for indicator development in determining the appropriate selection of a route of hysterectomy.

The quality of hysterectomy procedures is judged by both the quality of the decision that determines what actions are taken and how those actions are executed-what to do and how it is done. When marked variation in clinical practice occurs, medical-practice guidelines can be used to mitigate uncertainty and improve quality. Guideline development and adoption make medical and surgical care more consistent for patients [17,18]. When consensus is lacking or ambiguous, as with the method of hysterectomy selection, physician decision making is driven by subjective factors referred to as "practice style", which incorporates physician "values", attitudes, taste, and habits [19].

Currently it appears that surgeons promote the term "minimally invasive" surgery rather than "evidence-based" surgery. In spite of all the evidence to support vaginal hysterectomy, it seems that some have made it an exception to evidence-based medicine. However, it happens to be the most minimally invasive hysterectomy and the evidence supports it. An ACOG committee opinion published in *Obstetrics and Gynecology* reflects emerging clinical and scientific advances in choosing the route of hysterectomy for benign disease [20]. This clinical effectiveness research by ACOG reviewed hundreds of articles on patient-related outcomes and clinical trials, which is the basis for evidence-based medicine, and reported on their unbiased and evidence-based conclusions.

1. Vaginal hysterectomy is the approach of choice, whenever feasible, based on its well-documented advantages and lower complication rates.
2. The choice of whether to perform prophylactic oophorectomy at the time of hysterectomy is based upon the patient's age, risk factors, and informed wishes, but not on the route of hysterectomy.
3. Laparoscopic hysterectomy is an alternative to abdominal hysterectomy for those whom a vaginal hysterectomy is not indicated as feasible.

4. Experience with robotic hysterectomy is limited at this time; more data are necessary to determine its role in the performance of hysterectomy.

Will Gynecologists follow the evidence-based recommendations of the organization that credentials them? The only retort to vaginal hysterectomy has always been whether or not it is feasible. Shouldn't the other side of the argument be questioned? Has the necessity-a proven and documented contraindication to vaginal hysterectomy-actually been proven before the selection and performance of an abdominal, laparoscopic or robotic hysterectomy? It is feared it has not. Only the surgeon knows the honest answer.

References

1. Dicker RC, Greenspan JR, Strauss LT, Cowart MR, Scally MJ, et al. (1982) Complications of abdominal and vaginal hysterectomy among women of reproductive age in the United States. The collaborative review of sterilization. *Am J Obstet Gynecol* 144: 841-848.
2. Kovac SR (2000) Hysterectomy outcomes in patients with similar indications. *Obstet Gynecol* 95: 787-793.
3. Wilcox LS, Koonin LM, Pokras R, Strauss LT, Xia Z, et al. (1994) Hysterectomy in the United States, 1988-1990. *Obstet Gynecol* 83: 549-555.
4. Cardozo ER, Clark AD, Banks NK, Henne MB, Stegmann BJ, et al. (2012) The estimated annual cost of uterine leiomyomata in the United States. *Am J Obstet Gynecol* 206: 211.e1-e9.
5. Betram DA, Kovac SR, Cruikshank SH (1995) The role of laparoscopy on hysterectomy: a review of studies to date. *J Pelvic Surg* 3.
6. Emergency Care Research Institute: Laparoscopy in hysterectomy for benign contraindications. Plymouth Meeting (PA): The Institute.
7. Johnson N, Barlow D, Lethaby A, Tavender E, Curr E, et al. (2005) Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database Syst Rev* CD003677.
8. Dorsey JH, Steinberg EP, Holtz PM (1995) Clinical Indications for hysterectomy route: Patient characteristics or physician preference? *Am J Obstet Gynecol* 173: 1452-1460.
9. Sheth SS (2002) Vaginal hysterectomy. In: Sheth SS, Studd J (Eds.), *Vaginal Hysterectomy*. Martin Dunitz Publisher, London, UK.
10. Stovall TG (1993) Controversial techniques during hysterectomy. In: Stovall TG (Eds.), *Hysterectomy*. Elsevier Science, New York.
11. Kovac SR, Cruikshank SH, Retto HF (1990) Laparoscopy-assisted vaginal hysterectomy. *J Gynecol Surg* 6: 185-193.
12. Kung FT, Chang SY (1996) The relationship between ultrasonic volume and actual weight of pathologic uterus. *Gynecol Obstet Invest* 42: 35-38.
13. Kovac SR, Zimmerman CW (2012) Guidelines for hysterectomy. In: Kovac SR, Zimmerman CW (Eds.), *Advances in Reconstructive Vaginal Surgery*. Wolters Kluwer, Philadelphia.
14. Kovac SR (1995) Guidelines to determine the route of hysterectomy. *Obstet Gynecol* 85: 18-23.
15. Figueiredo O, Figueiredo EG, Figueiredo PG, Pelosi MA 3rd, Pelosi MA (1999) Vaginal removal of the benign nonprolapsed uterus: experience with 300 consecutive operations. *Obstet Gynecol* 94: 348-351.
16. Agostini A, Bretelle F, Cravello L, Maisonneuve AS, Roger V, et al. (2003) Vaginal hysterectomy in nulliparous women without prolapse: a prospective comparative study. *BJOG* 110: 515-518.
17. National Guideline Clearinghouse (2000) Guideline Synthesis: Guidelines for determining the route of hysterectomy for benign conditions.
18. Dayton OH (1999) Guidelines for determining the route and method of hysterectomy for benign conditions. Society of Pelvic Reconstructive Surgeons.
19. Wennberg JE, Barnes BA, Zubkoff M (1982) Professional uncertainty and the problem of supplier-induced demand. *Soc Sci Med* 16: 811-824.
20. ACOG Committee Opinion No. 444 (2009) Choosing the Route of Hysterectomy for Benign Disease. *Obstet Gynecol* 114: 1156-1158.