



A SUPPLEMENT TO *Ob.Gyn. News*

# JOURNAL SCAN

## The Evolution of Hysterectomy: From Dogma to Empowerment

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### TOPIC HIGHLIGHTS

#### Total Versus Subtotal Abdominal Hysterectomy

3

Thakar R, Ayers S, Clarkson P, Stanton S, Manyonda I. Outcomes after total versus subtotal abdominal hysterectomy. *N Engl J Med.* 2002;347:1318-1325.

#### A Retrospective Comparison of LSH and TAH

3

Sarmini OR, Lefholz K, Froeschke HP. A comparison of laparoscopic supracervical hysterectomy and total abdominal hysterectomy outcomes. *J Minim Invasive Gynecol.* 2005;12:121-124.

#### Two Approaches to Hysterectomy for Management of Benign Pathology

4

Candiani M, Izzo S, Bulfoni A, Riparini J, Ronzoni S, Marconi A. Laparoscopic vs vaginal hysterectomy for benign pathology. *Am J Obstet Gynecol.* 2009;200:368.e1-368.e7.

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## The Evolution of Hysterectomy: From Dogma to Empowerment

Andrew I. Brill, MD

Women's self-education and desire for minimally invasive surgery have fueled the impetus for a significant turn in direction for the traditional hysterectomy. Once considered one of the more invasive procedures, hysterectomy now holds the distinction of potentially being one of the least. Advances in surgical techniques and instrumentation have created the reality for hysterectomy to be an outpatient procedure for the vast majority of women who undergo this surgery.

However, the medical community often takes slowly to change, and minimally invasive hysterectomy has yet to overcome clinical dogma. About two thirds of hysterectomies performed in the United States involve an abdominal approach. Total abdominal hysterectomy has maintained its dominance despite clear evidence that the vaginal route is safer, simpler, less expensive, and easier on patients.

The disconnect between the potential and the reality of hysterectomy can be traced to a fact that many in the medical community are loath to consider, much less accept: the required skill set simply outstrips the level of expertise. Even if vaginal hysterectomy became standard of care, most gynecologists could not offer this approach because they lack the training and experience to perform the procedure safely and effectively for the enlarged uterus.

Randomized controlled trials of limited size comparing laparoscopic to total abdominal hysterectomy demonstrate that other than a tendency for more lower urinary tract injury, the laparoscopic approach is less complicated and provides a quicker recovery. Results after vaginal hysterectomy appear to be comparable or better to both laparoscopic and abdominal hysterectomy. Nevertheless, whenever outcomes from different treatments differ by only a few percentage points, well-designed clinical trials with literally thousands of patients would be required to determine whether one is significantly better than another.

Those trials will likely never take place to compare these different types of hysterectomy.

Another form of clinical dogma centers on whether to conserve or remove the cervix. For many surgeons and patients, cervicectomy is a foregone conclusion, part and parcel with abdominal hysterectomy. Moreover, these same surgeons will acknowledge that removal of the cervix is the most technically challenging aspect of hysterectomy. Because of the proximity of the cervix to the lower urinary tract and uterine vasculature, extirpation requires considerable disruption of the surrounding tissues, predisposing patients to more complications. Supracervical hysterectomy essentially obviates these risks.

Preservation of the cervix has two relative contraindications, both of which can be identified during the preoperative assessment. First, to avert the potential for future cervical prolapse, every effort should be made to identify significant uterine descensus both apparent and masked by retroversion with uterine enlargement. Second, supracervical hysterectomy has little role in the treatment of chronic pelvic pain secondary to cervical dyspareunia or when endometriosis deeply invests the paravaginal and perirectal tissues.

Of significant psychological value for some women, preservation of the cervix with or without the adnexae literally serves to "redefine" hysterectomy. The elements of preservation and choice can be profoundly empowering by providing a sense of control. For many woman tacitly against the perceived social, emotional, and economic cost of hysterectomy, supracervical hysterectomy can be comfortably embraced as a hysterectomy alternative. The choice of laparoscopic supracervical hysterectomy adds another level of choice by removing the cosmetic disfigurement and prolonged recovery from an abdominal incision.

The journal articles reviewed in this supplement provide context and information for discussions with women about options and alternatives to conventional hysterectomy. ■

## Total Versus Subtotal Abdominal Hysterectomy

Total abdominal hysterectomy (TAH) involves removal of the body of the uterus and the cervix. Subtotal abdominal hysterectomy (SAH) conserves the cervix. SAH minimizes anatomic disruption and might reduce the risk of adverse effects. Routine use of TAH can no longer be justified, given that screening reduces the risk of invasive cervical cancer and that SAH is associated with a cervical cancer incidence of <0.1%.<sup>1,2</sup> SAH also reduces the risk of injury to the bladder and ureters, wound infection, and hematoma. Studies comparing TAH and SAH have generally been small, nonrandomized, or both and have yielded conflicting results about outcomes with the two procedures. A prospective, randomized, double-blind, multicenter trial was conducted to test the hypothesis that SAH, compared with TAH, results in better urinary, bowel, and sexual function; more rapid recovery; and fewer complications.

### Methods

The trial involved two medical centers, wherein investigators recruited women more than 60 years of age who had been offered abdominal hysterectomy for benign indications. Patients were randomly assigned to TAH or SAH, with the study protocol carried out by experienced surgeons who used similar techniques. Bilateral salpingo-oophorectomy was allowed at physician discretion or as requested by patients. Urinary, bowel, and sexual function was evaluated before surgery and at 6 and 12 months afterward. Assessment of sexual function was limited to patients who reported being sexually active at all three time points.

### Results

The trial included 146 patients randomized to TAH and 133 patients randomized to SAH. Patients in the two groups were similar with respect to age, weight, parity, menopausal status, race or ethnic group, and indication for hysterectomy. Bilateral salpingo-

oophorectomy was performed in 81 patients in the TAH group and 61 patients in the SAH group. TAH was associated with significantly longer duration of surgery ( $P<0.001$ ), greater blood loss ( $P=0.004$ ), and longer hospital stay ( $P=0.04$ ). No patient in either group experienced visceral damage. Pyrexia and antibiotic use were more common after TAH than after SAH. Rates of wound infection and wound hematoma did not differ significantly between the two groups.

Intraoperative complications occurred more often with TAH (14.4%) than with SAH (8.3%), but the difference was not significant. Postoperative complications before discharge occurred significantly more often with TAH than with SAH. PredischARGE complication rates were 27.4% with TAH and 9.8% with SAH ( $P<0.001$ ). Pyrexia accounted for most of the difference (28 cases vs 8 cases). During the first 12 months after discharge, SAH was associated with a higher complication rate (10.5% vs 6.2%,  $P<0.001$ ) than TAH. Cyclical vaginal bleeding was the most common postoperative complication in the SAH group, and persistent pain after surgery was more common in the TAH group than the SAH group. Postoperative bladder, bowel, and sexual function was similar in the two groups.

### Discussion

Compared with TAH, SAH resulted in a more rapid recovery and fewer short-term complications but caused more cyclical bleeding. Neither procedure adversely affected pelvic organ function during 12 months of follow-up. Multiple surgeons performed the procedures, suggesting the results are widely applicable. Given the comparable results, greater consideration of patient preferences, based on expectations, might improve satisfaction after hysterectomy for benign conditions. ■

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## A Retrospective Comparison of LSH and TAH

About 600,000 hysterectomies are performed each year in the United States at an estimated cost exceeding \$5 billion.<sup>1</sup> More than a third of women have undergone hysterectomy by their 60th birthday.<sup>2</sup> The ongoing demand for hysterectomy has provided the impetus for the development of less invasive techniques, including laparoscopic supracervical hysterectomy (LSH). The procedure can be performed on an outpatient basis, has a shorter recovery time, and avoids cervicectomy, which is no longer needed on a routine basis to prevent cervical cancer. A retrospective analysis was undertaken to compare outcomes with LSH and total abdominal hysterectomy (TAH).

### Methods

The study included 440 women who had a hysterectomy with or without bilateral salpingo-oophorectomy. The study population comprised 220 patients who underwent TAH from 1997 to 1999 and 220 patients who had LSH from 1999 to 2002. During the latter period, patients were offered only LSH, except in instances when the procedure was contraindicated. All procedures were performed

by gynecologic surgeons at a single metropolitan medical center. Patients in the two cohorts had similar indications for hysterectomy and final pathology. The primary objective was to compare operative and postoperative outcomes of LSH and TAH.

### Results

Examination of intraoperative and postoperative parameters revealed multiple, statistically significant differences favoring LSH (Table). Mean operative time was 47.7 minutes for LSH and 74.9 minutes

| Parameter                               | LSH       | TAH        | Two-sided P value | 95% CI for A-B difference |
|---|-----------|------------|-------------------|---------------------------|
| Mean estimated blood loss (mL)          | 59.1±17.5 | 275.3±98.5 | <0.0001           | {-229.4,-203.0}           |
| Mean length of surgery (min)            | 47.7±14.6 | 74.9±25.6  | <0.0001           | {-31.1,-23.3}             |
| Mean time in recovery room (min)        | 80.1±13.1 | 122.8±25.0 | <0.0001           | {-46.4,-39.0}             |
| Mean length of patient stay (h)         | 4.3±0.7   | 80.1±45.4  | <0.0001           | {-81.8,-69.8}             |
| Mean time to return to daily activities | 5.3±1.2   | 19.5±6.3   | <0.0001           | {-15.0,-13.4}             |
| Mean time to return to full-time work   | 9.9±1.9   | 58.1±14.3  | <0.0001           | {-50.1,-46.3}             |
| Mean time to resumption of coitus       | 24.5±7.8  | 59.0±7.0   | <0.0001           | {-35.9,-33.1}             |

LSH, laparoscopic supracervical hysterectomy; TAH, total abdominal hysterectomy.

for TAH ( $P < 0.0001$ ). Hospital length of stay averaged 4.3 hours with LSH and 80.1 hours with TAH ( $P < 0.0001$ ). LSH was associated with a significantly quicker return to daily activities and work ( $P < 0.0001$ ).

TAH was associated with higher rates of operative and postoperative complications than was LSH (2.7% vs 0.9% and 25% vs 0%, respectively). Blood loss  $> 500$  mL occurred significantly more often with TAH ( $P = 0.04$ ). During the postoperative period, patients who underwent TAH had a significantly higher incidence of fever (14.5% vs 0%,  $P < 0.0001$ ), wound hematoma (3.5% vs 0%,  $P = 0.006$ ), and wound infection (1.8% vs 0%,  $P = 0.04$ ) than did patients who underwent LSH.

### Discussion

Consistent with other reports, the data showed a markedly lower incidence of complications with LSH than with TAH. The overall complication rate with LSH was  $< 1\%$ . By comparison, TAH has been associated with complication rates of 9.3% to 41%, vaginal hysterectomy has been associated with complication rates of 5.3%

to 7.8%, and laparoscopic-assisted vaginal hysterectomy has been associated with complication rates of 2.6% to 8.8%.<sup>3-8</sup> Fear of cervical cancer remains the principal reason for gynecologists' avoidance of supracervical hysterectomy.

This review demonstrated that LSH can be performed in an outpatient setting with excellent results and safety. Patients benefit from lower complication rates and more rapid recovery and return to normal activities and work. LSH represents a viable alternative to abdominal hysterectomy in more than 90% of cases. ■

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## Two Approaches to Hysterectomy for Management of Benign Pathology

Historically, laparotomy accounted for 70% to 80% of hysterectomies.<sup>1,2</sup> Recent studies, however, demonstrated higher complication rates, longer hospital stays, and longer recovery following laparotomic hysterectomy than with vaginal and laparoscopic hysterectomy.<sup>3-5</sup> Few prospective studies have compared vaginal and laparoscopic hysterectomy, leaving unanswered questions about superiority. A randomized clinical trial was undertaken at a single center in Italy to compare 12-month outcomes of the two procedures.

### Methods

Patients with an indication for vaginal hysterectomy to treat benign pathology were randomly assigned to vaginal or laparoscopic technique. Two experienced surgeons for each group performed the procedures. Vaginal hysterectomy was performed according to Heaney's technique.<sup>6</sup> All laparoscopic procedures were total hysterectomy, defined as IV E in the American Association of Gynecologic Laparoscopists classification system.<sup>7</sup>

Baseline assessment included age, parity, previous surgery, body mass index, age at menopause or last period, and indication for hysterectomy. Operative parameters included complications, blood loss, conversion to laparotomy, duration of surgery, consistency between findings and preoperative ultrasound assessment, and discovery of additional pelvic pathologies during surgery. Postoperative factors included length of hospital stay, fever, reduction in hemoglobin on day 1, resumption of bowel activity, infection, urinary dysfunction, and pelvic pain.

### Results

Investigators recruited 60 patients and randomized 30 to each hysterectomy technique. Laparoscopic hysterectomy was associated with a longer operative time (99 vs 82 minutes,  $P = 0.033$ ) but less blood loss (84 mL vs 178 mL,  $P = 0.004$ ). The two groups were similar with respect to correspondence with ultrasound, additional pathologies found at surgery, and intraoperative complications.

No patient in either group required conversion to laparotomy. When planned preoperatively, bilateral adnexectomy was performed successfully in all patients in the laparoscopy group versus 73% of the patients in the vaginal hysterectomy group ( $P = 0.045$ ).

Postoperatively, laparoscopic hysterectomy was associated with a significantly shorter hospital stay (2.7 vs 3.2 days,  $P < 0.001$ ). A third of patients in the laparoscopic group were discharged on day 2 compared with 3.3% of patients in the vaginal arm. The only major complication was thrombosis on day 6 in a patient who underwent vaginal hysterectomy. Laparoscopic hysterectomy was associated with significantly less pain ( $P = 0.023$ ) and fewer days of requested analgesia ( $P = 0.017$ ). Satisfaction, sexuality, and time to resumption of daily activities and work were similar in the two groups at 12 months.

### Discussion

The study demonstrated that vaginal hysterectomy, the gold standard when compared with laparotomic hysterectomy, does not have a clear advantage compared with laparoscopic hysterectomy. Vaginal hysterectomy facilitates spinal anesthesia and is associated with a shorter operative time. However, laparoscopic hysterectomy is associated with less blood loss and postoperative pain and a shorter hospital stay. The laparoscopic approach also allowed successful pre-planned bilateral adnexectomy in all cases, a potentially major consideration for choice of hysterectomy technique. ■

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