



Does minimally invasive hysterectomy cost more than the abdominal approach?

NO. This retrospective study from Brigham and Women’s Hospital found that a transition from a preponderance of abdominal hysterectomies to a majority of minimally invasive hysterectomies did not increase the mean total cost. The transition was also associated with a lower rate of procedure-related complications.

Jonsdottir GM, Jorgensen S, Cohen SL, et al. Increasing minimally invasive hysterectomy: effect on cost and complications. Obstet Gynecol. 2011;117(5):1142–1149.

► EXPERT COMMENTARY

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The evolution of the laparoscope from diagnostic tool to operative instrument came as quite a shake-up to some. For example, when Professor Kurt Semm pioneered efforts in operative laparoscopy in Germany in the late 1960s and early 1970s, one of his peers suggested he undergo a scan to rule out brain damage!¹ (Until then, the laparoscope had been used only to perform tubal sterilization.)

Fast forward to 1988, when Harry Reich, MD, performed the first laparoscopic hysterectomy.² Within 5 years of that milestone, the literature was replete with information on laparoscopic-assisted vaginal hysterectomy and total laparoscopic hysterectomy. Surgeons such as Tom Lyons, MD, and Harry Hasson, MD, described the advantages, relative ease, and safety profile of laparoscopic supracervical hysterectomy. However, despite accumulating evidence of the benefits of minimally invasive hysterectomy, including speedier recovery and fewer complications, the president of ACOG felt compelled to question, in a 1992 editorial in *Obstetrics & Gynecology*,

whether operative laparoscopy was a “surgical advance” or a “technical gimmick.”³

By 2007, a Cochrane review of hysterectomy for benign gynecologic disease had concluded that the laparoscopic approach is associated with less intraoperative blood loss, a smaller decline in hemoglobin levels, faster recovery, and fewer wound and abdominal infections and febrile episodes than the abdominal approach is.

Moreover, the laparoscopic approach to hysterectomy is more cost-effective than the abdominal route. In a 2009 study, unadjusted expenditures for laparoscopic hysterectomy averaged \$10,868 per case, compared with \$12,086 for abdominal hysterectomy and \$9,544 for vaginal hysterectomy. *Adjusted* expenditures for outpatient minimally invasive hysterectomy (laparoscopic or vaginal) were markedly lower than for inpatient abdominal hysterectomy.⁴

Nevertheless, as I noted in my 2008 presidential address to the 37th Global Congress of Minimally Invasive Gynecology of the AAGL, we have not yet achieved widespread

FAST TRACK

Laparoscopic and vaginal approaches did not increase the total cost of hysterectomy and were associated with a lower rate of procedure-related complications

WHAT THIS EVIDENCE MEANS FOR PRACTICE

I agree with a recent position statement from the AAGL, which concludes that most hysterectomies for benign indications should utilize the vaginal or laparoscopic approach.⁷ AAGL also recommends that efforts to facilitate these approaches continue. Surgeons who lack the requisite skills and training should seek assistance from expert colleagues or refer the patient to a surgeon with such expertise.

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adoption of laparoscopic hysterectomy in the United States. Although more than 95% of cholecystectomy cases are performed laparoscopically—as well as 70% of hernia repairs and 80% of bariatric procedures—only 15% of hysterectomies are laparoscopic, and nearly two thirds are completed using an open abdominal technique.

Jonsdottir et al: Details of the study

Enter the current study: a retrospective analysis from the Division of Minimally Invasive Gynecologic Surgery at Brigham and Women's Hospital in Boston. It may finally deliver the much-needed death knell for open abdominal hysterectomy. The study of 2,133 women who underwent hysterectomy (1,054 in 2006 and 1,079 in 2009) found that the total number of hysterectomies remained stable while the percentages of abdominal and laparoscopic cases changed markedly. The percentage of hysterectomies that were performed abdominally declined from 64.7% in 2006 to 35.8% in 2009, and the percentage of laparoscopic procedures rose from 17.7% to 46% over the same period.

Along with this change, the overall rate of intraoperative complications decreased significantly—from 7.2% to 4%—and so did the mean percentage of postoperative complications—from 18% to 5.7%. Although operative costs did increase significantly, there was no change in the mean total cost.

Jonsdottir and colleagues cite various reasons for the shift toward minimally invasive hysterectomy:

- a nationwide change in practice patterns
- increasing awareness among patients of the benefits of minimally invasive procedures
- establishment of a minimally invasive gynecologic surgery program at Brigham and Women's Hospital in 2006
- a preponderance of hysterectomies performed by the gynecologic oncology service or the minimally invasive gynecologic surgery group, both of which are adept in minimally invasive hysterectomy.

Use of the robot increased dramatically

Although robotic hysterectomy was the least

common approach identified in this study, the rate nearly tripled over 3 years. This trend toward increasing use of robotic assistance in hysterectomy is seen nationally; according to industry estimates, 26% of all hysterectomy procedures are performed via the robot, as opposed to 18% performed via laparoscopy, 15% performed vaginally, and 38% performed via the open abdominal approach. Although a study by Pasic and colleagues noted increased hospital costs per case with use of the robot for hysterectomy, Jonsdottir and coworkers found the calculated cost to society to be lowest with robotic hysterectomy.⁵

These findings in context

In another retrospective study that evaluated the use of minimally invasive hysterectomy over a 20-year period at my institution—a tertiary-care, community teaching hospital—Moen and colleagues noted a decrease in the percentage of abdominal hysterectomy from 77% to 35%, whereas minimally invasive hysterectomy (vaginal and laparoscopic approaches) increased from 23% to 64.8%.⁶ By 2009, 13.6% of hysterectomies at my institution were completed with robotic assistance.

Interestingly, the majority of abdominal, laparoscopic supracervical, and robotic-assisted hysterectomies were performed by generalists, whereas the majority of vaginal and total laparoscopic hysterectomies were performed by fellowship-trained specialists.⁶ 

References

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