

Increase seen in use of robotically-assisted hysterectomy for benign gynecologic disorders

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Between 2007 and 2010, the use of robotically-assisted hysterectomy for benign gynecologic disorders increased substantially, although, when compared with laparoscopic hysterectomy, the robotic procedure appears to offer little short-term benefit and is accompanied by significantly greater costs, according to a study appearing in the February 20 issue of *JAMA*.

"[Hysterectomy](#) for benign gynecologic disease is one of the most commonly performed procedures for women. Overall, 1 in 9 women in the United States will undergo the procedure during her lifetime. While hysterectomy has traditionally been performed abdominally via laparotomy, vaginally, or by laparoscopy, robotically assisted hysterectomy has been introduced as an alternative minimally invasive approach to hysterectomy. The robotic surgical platform received approval from the U.S. Food and Drug Administration in 2005 for the performance of gynecologic procedures and allows a surgeon to perform the procedure at a remote console," according to background information in the article. "Proponents of [robotic surgery](#) have argued that robotic technology allows women who otherwise would undergo laparotomy to have a minimally invasive procedure. However, there is little to support these claims, and because both laparoscopic and robotic-assisted hysterectomy are associated with low complication rates, it is unclear what benefits robotically-assisted hysterectomy offers."

The authors add that unlike other procedures such as prostatectomy for which [robotic assistance](#) is used more frequently than conventional laparoscopic approaches, laparoscopic hysterectomy is already widely available.

Jason D. Wright, M.D., of the Columbia University College of Physicians and Surgeons, New York, and colleagues examined the usage of robotic-assisted hysterectomy and assessed in-hospital outcomes and costs for robotically-assisted hysterectomy compared with laparoscopic and abdominal procedures. A total of 264,758 women were identified who underwent hysterectomy for benign gynecologic disorders at 441 hospitals across the United States from 2007 to 2010. The study group included 123,288 (46.6 percent) who underwent an abdominal hysterectomy, 54,912 (20.7 percent) who had a vaginal hysterectomy, 75,761 (28.6 percent) who had a laparoscopic procedure, and 10,797 (4.1 percent) who had a robotically-assisted hysterectomy.

The researchers found that robotically-assisted hysterectomy increased during the study period and accounted for 0.5 percent of the procedures in 2007 compared with 9.5 percent in 2010. The number of laparoscopic hysterectomies performed also increased; laparoscopic hysterectomy accounted for 24.3 percent of the procedures in the first quarter of 2007 compared with 30.5 percent in 2010.

After the introduction of robotically-assisted hysterectomy at a given hospital, use increased rapidly. "For example, at 3 years after the first robotic procedure in each hospital where robotics were used, robotic-assisted hysterectomy accounted for 22.4 percent of all hysterectomies. At these hospitals, use of vaginal, laparoscopic, and abdominal hysterectomy all declined," the authors write. "In contrast, at hospitals where robotically assisted hysterectomy was not performed, abdominal and vaginal hysterectomy declined, while use of laparoscopic hysterectomy increased."

Although patients who underwent a robotic-assisted hysterectomy were less likely to have a length of stay longer than 2 days (19.6 percent vs. 24.9 percent), overall complication rates were similar for robotic-assisted and laparoscopic hysterectomy (5.5 percent vs. 5.3 percent). Total costs associated with robotically assisted hysterectomy were \$2,189 more per case than for laparoscopic hysterectomy, the researchers write.

"Our findings highlight the importance of developing rational strategies to implement new surgical technologies. Robotic surgery first gained prominence for prostatectomy as it essentially offered the only minimally invasive surgical approach for the procedure. Hysterectomy is unlike [prostatectomy](#) in that a number of alternatives to open surgery are available; laparoscopic hysterectomy is a well-accepted procedure and vaginal hysterectomy allows removal of the uterus without any abdominal incisions."

"From a public health standpoint, defining subsets of patients with benign gynecologic disorders who derive benefit from robotic hysterectomy, reducing the cost of robotic instrumentation, and developing initiatives to promote laparoscopic hysterectomy are warranted," the authors conclude.

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