

# Robotic surgery: More complications, higher expense for some conditions

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For benign gynecologic conditions, robot-assisted surgery involves more complications during surgery and may be significantly more expensive than conventional laparoscopic surgery, according to a study by researchers at Columbia University Medical Center (CUMC). The results were published online today in *Obstetrics & Gynecology*.

Robot-assisted [surgery](#) was first widely used for radical prostatectomy. For procedures such as prostatectomy, where there were previously no minimally invasive options, robot-assisted laparoscopy often offered a dramatic improvement. But in the two gynecologic surgeries looked at in this study—oophorectomy (removal of one or both ovaries) and cystectomy (removal of an ovarian cyst) —surgeons already had laparoscopic options. The rate of robot-assisted surgery increased from 3.5 percent in 2009 to 15.0 percent in 2012 for oophorectomy and from 2.4 percent in 2009 to 12.9 percent in 2012 for cystectomy.

The CUMC researchers analyzed data on conventional laparoscopic and robot-assisted procedures performed on 87,514 women for benign gynecologic conditions between 2009 and 2012. The procedures took place at 502 U.S. hospitals.

The study showed a small but statistically significant overall increase in intraoperative (during surgery) [complications](#), mainly ureteral and bladder injuries, with the robot-assisted procedures—3.4 percent for robot-assisted oophorectomy vs. 2.1 percent for conventional laparoscopic oophorectomy; 2.0 percent for a robot-assisted cystectomy

vs. 0.9 percent for a conventional laparoscopic cystectomy. It is possible that the rate of complications will decline as surgeons become more experienced in robotic technology.

"The findings raise questions about the potential utility of robotic-assisted surgery for ovarian cancer and suggest that further studies are needed prior to considering these procedures as a standard of care," said co-author Jason Wright, MD, Sol Goldman Associate Professor of Gynecologic Oncology and chief, Division of Gynecologic Oncology, Columbia University College of Physicians and Surgeons.

The researchers also found robot-assisted procedures to be more expensive. The median total cost for robot-assisted oophorectomy was \$7,426, while for conventional laparoscopic oophorectomy it was \$4,922. The median total cost for robot-assisted cystectomy was \$7,444; for conventional laparoscopic cystectomy it was \$4,133.

"With the rapid rise in the cost of cancer care, we need to make sure that public policies encourage comparative studies prior to widespread dissemination of new technologies," said another co-author, Dawn L. Hershman, MD, MS, associate professor of medicine at the College of Physicians and Surgeons, associate professor of epidemiology at Columbia's Mailman School of Public Health, and leader of the Breast Cancer Program at the Herbert Irving Comprehensive Cancer Center at New York-Presbyterian/Columbia.

**More information:** The paper is titled, "Comparative Effectiveness of Robotic-Assisted Compared to Laparoscopic Adnexal Surgery for Benign Gynecologic Disease."

Provided by Columbia University Medical Center

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