Robots Enable Scar-Free Hysterectomies

The precision and three-dimensional view provided by robots can enable essentially scar-free surgery for some women needing hysterectomies, physicians report.

The case report in the *Journal of Minimal Access Surgery* is of a 46-year-old physically fit female with a history of excessive bleeding and benign growths on her uterus. Her surgery was performed through a two inch-long incision in the belly button, the thinnest part of the abdomen, using the robotic arms in a "chopstick" fashion, said Dr. John R. Lue, Chief of the Medical College of Georgia Section of General Obstetrics and Gynecology at Georgia Health Sciences University.

"This paper helps show it can be done," said Lue, corresponding author. "Now we need to do large studies to find which women would most benefit and whether it can be done for more significant pathology such as large fibroids and cancer." Cost effectiveness also needs to be assessed, he noted.

A multi-inch incision across the pubic hair line is the approach for the majority of hysterectomies in the United States. Another option – one that minimizes pain, scarring and recovery time – is laparoscopy, a decade-old approach involving multiple, smaller abdominal incisions that provide access for a two-dimensional camera and surgical instruments.

Robotics, which enables three-dimensional imaging and directing surgical moves from a console, improves mobility and surgical control but typically requires multiple small incisions, Lue said. The single point of entry adds improved aesthetics to its list of benefits, he said.

"It's like an extension of your own hand being inside the patient," Lue said of the fine control and access of robotics. "You can see the anatomy much clearer. I can see each blood vessel streaming blood and where your nerves are. You can see the ureter much clearer," he said, noting injury to this connector between the kidney and bladder is a known risk of laparoscopic hysterectomy.

The downside is the robotic technique can be tough to learn: physicians essentially work in reverse since the single point of entry requires the chopstick approach that leaves the right hand doing what the left typically would. "You have to think opposite of what you normally do," said Lue, who began using robotics about five years ago on cases such as large fibroids that were difficult to remove laparoscopically.

Single-incision robotics is being used for an increasing number of surgeries such as prostate cancer, gallbladder disease and removal of a donor kidney for transplant. One relatively new obstetric use is to put a stitch in the cervix to prevent premature delivery, an approach Lue now utilizes. Surgeons from the Yonsei University College of Medicine in Korea reported on the use of robotic single-port total hysterectomies

in seven patients in 2011 in the Journal of Gynecology Oncology for benign disease and cervical cancer.

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