

Robotic surgery: How safe is it?

22 June 2010, By Fernando Quintero

When Mea Figueroa of St. Cloud was told that a robot would be performing a delicate operation to remove uterine fibroids that were causing her pain and abnormal bleeding, she hesitated slightly.

The machine looked like something straight out of a sci-fi movie, but she knew that a capable surgeon, Dr. Norman Lamberty of Winnie Palmer Hospital in Orlando, would be at the controls. Lamberty, a laparoscopic gynecologist with more than 200 robotic surgeries under his belt, says the new technology has made operations like the one he performed on Figueroa safer, with less blood loss and quicker recovery times.

The \$1.4 million robot, named after Leonardo da Vinci, has been hailed as a breakthrough in minimally [invasive surgery](#). With its multiple remote-controlled arms and 3-D high-definition camera, it allows [surgeons](#) to operate through tiny incisions with more precision and visual clarity.

But recent reports of da Vinci operations gone awry because of doctors' inexperience with the new technology have led to concerns that some hospitals' credentialing standards for surgeons who use the robot are too loose.

Doctors at Orlando Health's Winnie Palmer Hospital and Florida Hospital's Celebration Health, say measures have been taken at their hospitals to ensure patient safety and successful [surgical outcomes](#).

"We're developing strict guidelines for these types of surgeries," said Dr. Jessica Vaught, a gynecologic surgeon who leads Winnie Palmer's robotic surgical training program. "Robotics is an exciting new field, but it's one that needs a lot of regulation."

Last month, a Wall Street Journal article highlighted the case of a botched operation with the da Vinci robot at a New Hampshire hospital to illustrate problems that have arisen from inexperienced doctors using the machine. A follow-

up story referred to a case in which a 42-year-old man died following robotic surgery last summer at a Boca Raton, Fla., hospital. An attorney for the man's family said the urologist who operated on him had never before performed the procedure he was attempting with the robot, according to the report.

"These articles highlighted important problems. We agree surgeons need more education. They need more support from the hospital," said urologist Vipul Patel, a world-renowned robotic surgeon who is largely responsible for the development of Florida Hospital's robotics program and its Nicholson Center for Surgical Advancement, which focuses on robotic surgery and training.

Because robotic surgery is still an emerging, albeit fast-growing field, there are no standards for credentialing surgeons to use the machine. That is left to each hospital.

"It's a political hot potato because no one wants to come up with standards for everyone else. Nobody wants to restrict surgeons from doing robotics surgery because they haven't done enough cases in a certain year," said Dr. Graham Greene, a urologic oncologist at Lakeland Regional Medical Center who specializes in robotic assisted prostatectomies. He said surgeons at the hospital performed about 100 robotic-assisted prostatectomies in the last year.

Vaught and other robotic surgeons said efforts are under way to come up with standardized guidelines for credentialing doctors. For example, the American Association of Gynecological Laparoscopists, the largest organization in the U.S. dealing with minimally invasive surgical issues, formed its own robotic committee this year with a goal of establishing uniform credentialing standards.

The da Vinci system is in use at 853 hospitals across the country, including 131 with 200 or fewer beds. Among the concerns raised is that surgeons

at smaller hospitals don't perform enough surgeries on the da Vinci robot to overcome its steep learning curve.

Intuitive Surgical, the maker of da Vinci, says the robot's learning curve varies, depending on the surgeon and the procedure, and that there is no designated number of surgeries required to master the machine.

However, surgeons with extensive robotic experience say it takes at least 200 surgeries to become proficient at the da Vinci and reduce the risks of surgical complications. The New Hampshire hospital featured in the article, Wentworth-Douglass Hospital, is a 178-bed facility that had used the da Vinci about 300 times in four years.

"I don't think there's an exact number of cases needed to become an expert. It's probably around 50 to 100 cases to have basic proficiency, but that has nothing to do with outcomes," said Patel, who claims he has done more robotic procedures than anyone else in the world -- performing about 4,000 prostatectomies with the da Vinci. "If you have low expectations, that number is probably sufficient. If you have higher expectations, you're going to want a surgeon who has done more."

Greene said that though Patel is a respected surgeon, it's unfair to suggest that surgeons with fewer surgeries are less qualified.

"When you're a surgeon at a powerhouse like Celebration Health, you end up with situations like, 'Now that I'm at 1,000 cases, everyone else should do at least 999,' " said Greene. "They draw the line in the sand, but that's not really the best way to measure proficiency."

Greene said it was especially important for smaller to mid-sized hospitals like Lakeland to come up with credentialing standards and adequate training for robotic surgeons because they have to be competitive in today's health care market. Lakeland, which began its robotics program a year ago, has formed a robotics committee that includes surgeons, nurses and hospital administrators to look at patient safety, efficiency and outcomes.

"Our primary objective is patient safety," Greene said. "We're going through a good period of growth in robotics at Lakeland, and we want to be a model for other smaller regional hospitals to have the best program possible."

At Winnie Palmer Hospital, a robotics quality committee was formed this year that includes five surgeons and a data-management expert to track the number of robotic surgeries performed and review surgery outcomes. It has also been named a training "epicenter" for gynecologic surgeons because of Vaught's success in robotic surgery.

"The goal of this program is to have the highly skilled, high-volume benign GYN surgeons who have committed to provide new surgeons with case observations and act as proctors," said Intuitive Surgical spokeswoman Nora Distefano. "These surgeons have conducted at least 100 cases with superior results."

Training on the da Vinci system is typically in two parts: Surgeons receive on-site, half-day training by Intuitive Surgical at their hospitals to become familiar with the robot and its instruments. Then they are sent to a two-day surgical-skills training at one of da Vinci's 19 regional training centers.

Patel said the Florida Hospital's Nicholson Center, which is among the training centers, also provides advanced training opportunities. "Our training is individualized; a surgeon could spend a day or a month with us," he said.

At Winnie Palmer, proctors are assigned to mentor surgeons learning the new technology. They oversee a minimum of five surgeries. "If we don't feel they're ready we continue proctoring them," Lamberty said. "Even after that process is complete, when they're qualified to do surgery on their own, we're still available to help them."

Patients should check the surgeon's credentials, surgical experience and the hospital's safety record, Patel said.

Figuroa said she went with her instincts in choosing Lamberty as her robotic surgeon. It was his qualifications, not the technology used, that

mattered to her.

"Any tool in the hand of a doctor is a bad tool if they're not well trained. A scalpel could be a bad tool if you have a bad doctor," she said. "If they're well trained, [robotic surgery](#) is a wonderful way to have surgery."

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