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## Steady robot seen as cutting edge

Once the stuff of science fiction, robotic surgery is quickly gaining acceptance, particularly at UCI Medical Center.

**By KIMBERLY EDDS**

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When Doug McCrea was diagnosed with kidney cancer two years ago, the Newport Beach resident braced himself for a long, hard recovery.

Then, Dr. Ralph Clayman, chief of UCI Medical Center's urology department, sat the banker at the controls of the hospital's da Vinci Surgical System.

This will change your life, Clayman told him. He let McCrea take a spin on the only system to be approved for robotic-assisted surgery.

McCrea was sold.

"The case was pretty compelling," said McCrea, 59. "How they do this with such precision is amazing."

A day after going under the robotic knife he was resting at home. A week later he was back at work.

Three weeks after that, he played 36 holes of golf for five days straight - in Ireland. He walked every step of the course.

A year later, when McCrea was diagnosed with prostate cancer, he again had robotic surgery. Today he's been pronounced cancer-free and still plays golf.

"I sit here today, and it's like it never happened," McCrea said.

Once the stuff of science fiction, robotic surgery is quickly gaining acceptance. While the technology is still in its infancy, patients who undergo robotic-assisted surgery are recovering quicker, experiencing less pain and having fewer physical reminders of their operations than those who undergo conventional open surgeries.

Robotic surgery allows prostate cancer patients to regain sexual and urinary functions much faster than those who have traditional surgery.

Hundreds of surgeons from around the world came to Garden Grove this week for the two-day Pacific Rim Robotics International Symposium to discuss what robots could mean to the future of surgery. What they saw is an operating room with fewer humans, more robots and what they describe as better medicine.

"The concept is simple," said UCI's Clayman, a pioneer in minimally invasive surgery.

"Is a man plus a machine able to do a better job than a man without a machine?"

From prostate surgeries to heart-valve repairs and gastric bypasses, surgeons performed an estimated 36,000 robotic procedures last year - an increase of 50 percent from 2004.

Industry watchers predict the number of robotic surgeries will top 70,000 this year, on patients ranging in age from retirees to 5-pound infants.



**ROBODOC: A doctor tries out a da Vinci Surgical System, working the controls of the robot at right. Advocates of the robotic approach say it improves on the techniques of minimally invasive surgery, allowing patients to recover sooner and with less pain.**

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The Food and Drug Administration is approving robotic surgery on a procedure-by-procedure basis.

Buying in to what is being sold as the next surgical revolution doesn't come cheap. The da Vinci comes at a price of \$1.3 million.

The high cost prevents many smaller hospitals from using the still largely unproven technology, and larger centers are seeking donations to get into the robotic realm.

In 2002, UCI Medical Center bought two da Vinci robots. The center now runs the busiest surgical robotic training center on the West Coast.

Hoag Hospital in Newport Beach has a unit, and St. Joseph's Hospital and Children's Hospital of Orange County, both in Orange, pooled donations to buy one unit that they share.

For the past two decades, minimally invasive surgeons have operated through tiny incisions using long, thin rods. But doctors say the laparoscopic instruments are inflexible and allow little range of motion.

A surgeon sitting at a da Vinci console uses foot pedals to operate a camera mounted on a robotic arm hovering above the patient across the room. The surgeon has a three-dimensional view of the operation - magnified 12 times larger than life.

Incisions no bigger than a fingertip allow three robotic arms equipped with tools to enter the patient.

Gripping the controls, the surgeon moves hand, wrist and finger to direct the robot in real time, making precise movements of surgical instruments inside the body. The surgeon never touches the patient.

Eliminating hand tremors and providing a 540-degree range of motion, the da Vinci gives the surgeon abilities impossible with other methods. The result is smaller incisions and less trauma to the patient.

"It makes a good surgeon a great surgeon and a great surgeon an excellent surgeon," said Clayman.

"Laparoscopic surgery is like operating with chopsticks," said Dr. John Meehan, a pediatric surgeon who has done over 100 robotic surgeries at University of Iowa's Children's Hospital. "You don't have the wrist action or the movement you have with the da Vinci."

What surgeons can accomplish with the robot has been proven in prostate surgery. Approved by the FDA five years ago, robotic-assisted procedures are expected to account for a fifth of all prostatectomies performed this year.

Doctors at Detroit's Henry Ford Hospital lead the nation - performing more than 2,100 of the operations since 2001.

"That's the home run for robotic surgeries," said Meehan. "It's revolutionized how people do that surgery."

With last year's FDA approval of the da Vinci for hysterectomies, doctors predict similar strides in gynecology. Each year, surgeons perform five times more hysterectomies than prostatectomies.

With the success robots have had performing delicate surgeries required in urology, doctors now are looking to use the same precision and dexterity in other complex procedures, such as brain surgery.

Early results are promising, but some surgeons are reluctant to embrace the technology.

"There are those surgeons who say, 'I don't need no stinking robot,'" Clayman said. "But those are the ones who haven't tried it."