Back

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Local doctor uses mechanical arms in surgery

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Dr. Domenico Savatta of Florham Park stands at Newark Beth Israel Medical Center, where he is chief of minimally invasive and robotic adult urologic surgery. The center is an affiliate of the Saint Barnabas Health Care System.

Dr. Domenico Savatta can tie surgical knots from 10 feet away.

Before saying "so what?" understand that Savatta is performing prostate surgery and that the sutures are being tied with the use of small surgical instruments Savatta is manipulating with a robot.

Savatta, of Florham Park, is the chief of minimally invasive and robotic adult urologic surgery at Newark Beth Israel Medical Center, an affiliate of the St. Barnabas Health Care System. He is also a member of a nine-doctor urology practice that made the commitment to include robotic surgery in its treatment options. "Once robotic surgery became available, it was not hard to move on," he said.

Robotic surgery is an outgrowth of laparoscopic surgery - procedures done with the assistance of small video cameras that produce smaller incisions, quicker recovery times and reduce hospital stays. During a surgery Thursday, Savatta sat at the console like a video gamer playing the game of his life.

Nearby nurses, a surgical assistant and an anesthesiologist surrounded the patient lying under a shield of protective plastic and several robotic arms, as several television screens displayed the view.

Robotic surgical techniques have been in use since 1985, and the first robotic prostate surgery was performed at the Imperial College of London in 1988.

Robotic surgery also is performed at St. Clare's Hospital-Denville and Morristown Memorial Hospital.

Newark Beth Israel is also the site of a training institute that teaches physicians robotic surgery techniques. The hospital recently broadcast Savatta performing a live robotic surgery to the American Urologic Association's Annual Scientific Meeting in Anaheim.

Savatta, a urologist, said robotic surgery is less traumatic for the patient, reduces blood loss to the point that the surgical team might not need additional blood, and allows freer movement following surgery because there is less pain, which means they go home sooner.

"Patients feel as good or better than after traditional surgery," he said. "We now tell them they don't need to donate blood."

He was trained as a traditional surgeon, he said, but migrated to laparoscopic and then robotic surgery because those techniques offered a better way to treat the illnesses presented by his patients.

Savatta said robotic surgery is well adapted for abdominal surgeries on the kidneys, prostate or bladder. It is being used for some heart surgeries and some obstetric-gynecological surgeries, he said.

Robotic surgery is not an automatic solution for all patients, he said. A patient with multiple conditions or advanced cancer might not be a client for robotic surgery, he said, and early in his career he was warned against using the technique on obese patients.

"I was told not to try the procedure on a person weighing more than 250 pounds, but to perform traditional open surgery."

But an obese patient in an open surgery is still obese, he said, and the robotic techniques still maintain their benefits. Savatta said in some cases, he is prepared to convert from robotic surgery to open surgery instantly if necessary.

While some doctors would look at that issue as a negative, that a change from one surgical technique to another

somehow casts doubt on the newer technique, Savatta said, but that is not an issue for him. He would convert during surgery if the conditions called for it, but has not found that he needs to.

Some of that concern, he said, comes from the competitive nature of medicine, especially in the Northeast. New techniques are viewed critically, but over time are accepted.

"This is the best way to go," Savatta said. As the machines get better, he said, it would be possible to perform more and different surgeries. Soon, he said, it will be possible to layer the results of CAT scans and MRIs over the view the doctor sees, adding to the information available during surgery. It will also be possible to perform remote surgery, he said. The doctor would be in one hospital and the patient and the surgical team in another.

During Thursday's surgery, Savatta and the others kept up a constant chatter. On the screens, the small tools cut away tissue carefully until the prostate is exposed and the section to be removed is tied off.

Savatta said his hand and wrist movements control the robot and the tools respond precisely to the movements he makes. He views the action through lenses that magnify the area nine to 15 times, he said. That is a key improvement over laparoscopic surgery, he said, which, while providing detailed views of the surgical area, showed them only in two dimensions. With robotic surgery the view is three-dimensional and the space between organs and tissues and muscles is more evident, he said.

At his console, his head rests against a padded support and his arms are leaning on another padded bar. Fatigue is less of an issue with robotic surgery, he said, because the procedure is quicker and the console is ergonomically designed to reduce the physical stress for the doctor.

This patient came from Virginia, Savatta said, after being told his prostate was too large to be operated on.

There is a calculating, analytical side to Savatta that is evident in his discussion of robotic surgery. Some of that stems from his early schooling as an engineer, which he first studied in college before migrating to medicine.

The shift from engineering to medicine is not unusual, he said.

"Ten percent of medical school students start as engineers," he said. The engineering background helps him see the spatial relations of the body parts during surgery, he said. While the area Savatta is working in seems large on the plasma television monitors, in reality it is just inches wide, a congested highway of blood vessels, muscles, tissue and organs.

But much of the analysis is due to his nature as a problem solver, Savatta said. Patients present problems to be solved, and it is clear Savatta relishes the challenge of solving them.

But at the bottom of all the analysis and discussion about robotics is the reason the machines and techniques exist at all. While he talks like a tactician and explains things like a professor, Savatta in the end is a doctor.

"This is a better way to care for patients," he said.

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