

The da Vinci code

A breakthrough in medical technology makes surgeries easier for both surgeons and patients.

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In a surgical suite at Tulsa Spine and Specialty Hospital, Dr. **Daron Street** performs surgery with three arms.

The gynecological oncologist isn't standing over the patient as she lies on the operating table. Instead, he's sitting about five feet away, his face pressed into a console, his hands maneuvering controls effortlessly through the air and his feet tapping pedals every few seconds as he performs the laparoscopic, or minimally invasive, procedure.

Street is doing so with the help of the da Vinci robot, a technological breakthrough that is making surgeries easier on both surgeons and patients.

The Tulsa Spine and Specialty Hospital bought the device, which cost between \$1 million and \$2 million, in July 2010. It is the latest hospital in the Tulsa area to acquire the da Vinci robot, which is used to help surgeons treat conditions ranging from prostate cancer to coronary artery disease. Other Tulsa hospitals with the device include St. John Medical Center and Saint Francis Hospital.

"There are a number of things that are advantages to it," Street says while taking a break between surgeries.

First, the ergonomics of using the robotic device help the doctor.

“When you are doing laparoscopy, especially on someone that is large, you are reaching at very awkward angles with your instruments,” he says. “So it’s not unusual for surgeons to have to have back or neck surgery.”

The robot, on the other hand, doesn’t get tired and can hold up the equipment for as long as necessary.

Seated at the nearby console, the surgeon views a real-time image of the patient’s body, recorded by a camera attached to a robotic arm near the patient. Three other arms manipulate the instruments the same way the doctor is manipulating them a few feet away.

This, the doctor says, is also beneficial because the tips of the instruments have a wider range of motion than regular instruments.

“So it’s like working with little hands instead of having something like pinchers or scissors,” he says.

In traditional laparoscopic surgery, the surgeon must move the instrument in the opposite direction as the instrument tips — left means right and right means left — while looking into a 2-D monitor.

That’s not necessary with the da Vinci robot. The surgeon moves the console control in the direction he wants the instruments to move. The robotic technology also offers the surgeon depth perception via a high-definition 3-D image.

A camera placed inside the patient allows the surgeon to see the internal organs in real time.

St. John Medical Center has a dual-console da Vinci, meaning multiple doctors from different specialty areas can take part in a surgery.

“This allows for expanded specialization in technique, as well as a more inclusive scope of surgical care,” says **Pat Wright**, surgical services director at St. John Medical Center. “St. John is currently the only hospital in Oklahoma to utilize the dual-console da Vinci Si Surgical System.”

One of the biggest benefits of the device is the recovery time for patients, says Dr. **Rachel Gibbs**, obstetrics and gynecology physician with Warren Clinic.

“There is significantly less blood loss and a much shorter time for recovery and (ability to) return to work and normal daily activities,” she says. “There is much less pain. The incisions are tiny.”

However, every patient is different, says Dr. **Don Loveless Jr.**, obstetrics and gynecology physician with Warren Clinic.

“The amount of post-operative pain might be greater than anticipated because of the length of the surgery, the amount of adhesions or scar tissue which is present, the size of the uterus, the size of the ovaries, presence of endometriosis, etc.,” Loveless says.

Tami Exendine is testament to the faster patient recovery time. After Exendine was diagnosed with borderline ovarian cancer in June 2010, Street recommended using the da Vinci to perform a hysterectomy and to remove the cancerous growths from her ovaries.

In August 2010, Exendine, 52, a school nurse, went in for surgery on a Monday. By the following Saturday, she was out shopping.

Having seen the recovery process her mother underwent 20 years ago when Street performed surgery on her for cancer, Exendine says she was surprised by the quick recovery time.

"I left the hospital with no restrictions," she says, adding that she was careful for a few days and didn't lift objects. She has four half-inch scars across her abdomen but no stitches or staples.

But the decision to use the da Vinci was less about Exendine personally and more about the impact it could have on future patients, she says.

"I thought it might be fun to be on the cutting edge in Tulsa," she says.

The larger picture, the Sapulpa resident says, was that she helped Street hone his skills and learn better techniques with the use of the da Vinci robot. Before her surgery, she asked how many operations he had performed with the da Vinci.

When he said more than 10 and less than 30, Exendine decided to go for it because she trusted the oncologist.

And she's happy she did.

"If this technique could be utilized across the board, I think it's a more thorough way to achieve excellence," she says.