da Vinci at 1,000: Positive Outcomes in Robot-Assisted Prostatectomy

When diagnosed early, prostate cancer is a highly curable disease. The da Vinci® Surgical System is becoming a treatment option of choice for many men, providing positive outcomes compared to radiation therapy and other surgical approaches.

“The da Vinci prostatectomy provides excellent cancer control, fewer complications and a quicker convalescence,” said Lourdes urologist Rajen Butani, MD, who has performed more robotic surgery cases than any other physician in southern New Jersey. “With our expertise, we are now able to perform more complex cases, including morbidly obese patients and those who had previous abdominal surgery.”

Removal or Radiation?
Most patients with localized prostate cancer are offered surgical removal or radiation therapy as the primary treatment options. While external beam and seed radiation (brachytherapy) can be effective, these modalities depend on imaging for accurate staging, whereas a prostatectomy takes it one step further by enabling the pathologist to analyze the prostate microscopically in order to determine if the cancer has been eradicated, Dr. Butani explains.

Studies also have found that with radiation beam treatment, the average variation of the beam target can be 3 millimeters between sessions.1 This variation can cause different amounts of energy to be delivered to the edges of the prostate, near the nerve fibers and blood vessels. The da Vinci allows surgeons to be more precise, allowing the removal of the cancerous prostate while preserving nerves and blood vessels. Studies have shown positive surgical margin rates for da Vinci surgery average as low as 2.5 percent to 4.5 percent2,3 for early-stage disease.

In addition, 15-year prostate cancer survival rate is longer for radical prostatectomy compared to radiation, 92 percent to 87 percent, with cancer recurrence easier to detect with the former. Risk of bowel function impairment and long-term erectile dysfunction also are decreased.4 “Furthermore, if radiation fails, prostatectomy is extremely challenging due to subsequent scar formation,” Dr. Butani added. “Many men are opting for a robotic prostatectomy understanding that if their cancer was to return, they can still undergo radiation therapy in the future.”

Surgical Comparison
Traditional open prostatectomy requires a large, 8-to-10-inch abdominal incision. This procedure commonly results in 500 to 1,000 cc of blood loss, three days in the hospital and a longer return to full recovery.

Surgery with the da Vinci requires only five-to-six bandage-sized incisions, resulting in less pain, minimal blood loss (an average of 100cc or less), reduced complications and minimal scarring. Usually only an overnight hospital stay is required—compared to two or three days for open or conventional laparoscopic surgery—allowing for a quicker return to normal activities. Indwelling catheter time averages one week, whereas open procedures call for up to three weeks. Dr. Butani said 95 percent of his patients have full urinary continence (no pads) at one year. A concurring 2009 study found robotic surgery offers better results than retropubic radical prostatectomy in terms of
urinary incontinence and erectile function recovery, with similar positive surgical margin rates.5

Reported positive surgical margin rates for da Vinci prostatectomy range from 2.5 percent to 4.5 percent, compared to 5.9 percent for open surgery and 7.7 percent for traditional laparoscopic procedures.2,3

“The robot allows you to use the same technique that you use for open surgery, which requires a large midline incision to do dissection or reconstruction, but now instead of putting your hands into a large incision you put your hands into the console and do the same maneuvers using robotic instruments,” said Lourdes urologist and robotic surgeon Gordon Brown, DO. Because there is less pain, “patients are up walking around, often the next day after a robotic prostatectomy, which decreases the chance of blood clots, pneumonia and delayed return of bowel function.”

Potency after surgery also is key for many men. The chance of retaining potency depends on a number of variables, including the patient’s age, pre-surgical erectile function and the nature of the surgery.

“At Lourdes, our potency outcomes are as high as 75 to 80 percent success after two years, in men less than 50 years of age who had perfect pre-operative erectile function and undergo a bilateral nerve-sparing procedure,” explained Dr. Butani.

**Next Generation of Laparoscopic Surgery**

The robot does not replace the surgeon, but enhances the ability to treat complex pathologies. The system cannot be programmed or make decisions on its own. Every maneuver is directly controlled by the surgeon.

The surgeon sits near the patient and looks into a viewfinder at a crisp, magnified, high-definition, three-dimensional view of the operative field.

“The system provides surgeons with an immersive experience,” said Dr. Brown. “Target anatomy appears at high magnification, in brilliant color and with natural depth of field.”

The surgeon’s fingers manipulate master controls, while the system directly translates the surgeon’s hands, wrist and finger movements to the da Vinci’s arms and the instruments inside the patient (the system’s “endowrist” technology). This is a significant improvement over conventional rigid laparoscopic instruments, which limit dexterity and are counterintuitive in motion, explained Dr. Brown.

**Expertise Expanding Eligibility**

Surgeons at Our Lady of Lourdes Medical Center have performed more robot-assisted surgeries than any other facility in southern New Jersey. While long-term data is still being compiled, Drs. Butani and Brown say they have greatly expanded the number of patients eligible for da Vinci surgery.

“We have the experience and skills to perform complicated cases with the assistance of the robot. We also have successfully performed robotic surgery on patients who are morbidly obese and patients who have had previous surgery on their prostate or bladder—all of which were considered to be extremely challenging cases a few years ago,” Dr. Butani said.

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