

Prostate cancer -- robotic surgery may be best option

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Prostate cancer is a significant public health concern and cause of morbidity among men in the United States. In 2011, it is estimated that 240,890 new cases of prostate cancer will be diagnosed and almost 34,000 men will die of this malignancy. The lifetime probability of developing prostate cancer in American men is one in six. Current treatment alternatives for clinically localized prostate cancer include removal of the prostate gland, radiation to the cancerous prostate, active surveillance or other treatments (hormonal or cryotherapy).

Surgery for [prostate cancer](#) ([radical prostatectomy](#)) involves removing the [prostate gland](#) and adjacent seminal vesicles, as well as pelvic lymph nodes depending upon the patient's risk. Surgery offers the knowledge that the cancer has been removed with confirmation by a pathologist regarding the extent of spread of disease. An open surgical approach involving a 4-5 cm incision below the belly button has historically been the gold standard therapy for the [prostatectomy](#).

While outcomes following open prostatectomy are excellent, prolonged recovery and delayed convalescence is a legitimate concern for physicians and patients. With such considerations, an impetus within the surgical community has been to reduce the invasiveness of procedures without compromising on established standards of care. To that end, robotic surgery, which is performed via several tiny holes rather than one long incision, represents the newest frontier in minimally invasive surgery.

The first robotic-assisted surgery performed in 1995 utilized a robotic platform to eliminate the need for an assistant to hold the camera during laparoscopic procedures. The more contemporary da Vinci system (Intuitive Surgical, Sunnyvale, CA) represents the next evolutionary step. This system provides four arms, thereby allowing control of surgical optics, while simultaneously manipulating tiny surgical tools in its other hands. With a human surgeon at the controls, da Vinci filters out tremor, enhances precision, offers three-dimensional imaging and may eliminate some of the fatigue associated with conventional laparoscopy.

Robotics has experienced great popularity for urologic surgery; particularly for cancers of the prostate. In the 11 years since the Food and Drug Administration (FDA) approved the first robotic surgical system for conducting abdominal and pelvic surgeries, its use has skyrocketed. The da Vinci Surgical System is now used for just over 80 percent of radical prostatectomies performed annually in the United States. Based on studies to date, there is agreement that robotic surgery is superior to open surgery in terms of blood loss and length of hospital stay. Recovery time and convalescence also may be shorter following robotic surgery. However, when considering the three principle outcomes for prostate cancer surgery (cancer control, urinary control and sexual function), there is no consensus as to whether one approach is superior to another.

Improved diagnosis and evolving technology has increased the treatments available to patients diagnosed with prostate cancer. While robotic surgery presents one such therapy, the goal is to provide each patient with a treatment plan that is tailored to their overall health and specific type of cancer.

Provided by Pennsylvania State University

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