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## Robotic Surgery, Prostate Cancer and Incontinence



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What is my chance that I will be incontinent? This is the question most frequently posed by my patients who are considering surgery for a localized prostate cancer. I am happy to say that in the era of surgical robots, incontinence following prostate removal is very rare.

Men have two structures for continence – the bladder neck/prostate and the external sphincter (the group of muscles located just outside the furthest boundary of the prostate). During the removal of the prostate for prostate cancer (called radical prostatectomy), the bladder neck/prostate is removed. Patients frequently have incontinence immediately following surgery. The severity of incontinence is often measured roughly by the number of protective pads used by the patient. Over time, continence usually returns as the patient learns to control the bladder with the remaining external sphincter. Following the traditional, “open” radical prostatectomy, the recovery of continence usually occurs within days to weeks but in some individuals, it may take up to one year.

Incontinence following radical prostatectomy is most often due to injury during surgery of the muscle groups that are located just outside the furthest boundary of the prostate. During the surgery, this critical area for continence is often difficult to see as it is not very distinct from the surrounding tissues.

During the last few years, robot-assisted radical prostatectomy has enjoyed growing popularity and has even largely replaced traditional radical prostatectomy at many centers. In 2008, more than

half of the prostate cancer surgeries in the US were done with the robot. This rapid acceptance of robotic surgery by patients was in large part due to the improved results. With smaller incisions, hospital stays are usually less than one night. More importantly, the use of gas that creates the space for the robotic camera and arms to move in and out results in a positive pressure inside the patient’s abdomen. This positive pressure is like an invisible hand that is compressing all the bleeding vessels during the surgery, leading to significantly lower blood loss compared to open surgery. At the Cancer Institute of New Jersey where more than 500 robotic prostatectomies have been performed, no patients to date have received blood transfusions.

The exact incidence of incontinence following the traditional, open radical prostatectomy has been difficult to assess because the definition of continence has been variable. Some surgeons use pad-free rate while others define continence as the use of one or less protective pads. Using the definition of one or fewer pads as continent, continence rate has been reported as high as 85% at three months and 94% at one year. The pad-free rate at most medical centers with a high volume of robotic prostatectomy is in the range of 95-97%, however, direct comparisons between continence rates from different surgeons, patients and institutions are difficult.

The exact reasons for this improved continence rate following robotic surgery are debatable. However, it is well recognized that robotic prostatectomy results

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in significantly lower rate of blood loss compared to open surgery. Lower blood loss usually means better visualization of the pelvis and the portion of the prostate furthest from view. Better visualization, in turn, may lead to lower rate of injury to the external sphincter.

In conclusion, in this era of minimally invasive robotic surgery, the risk of prolonged incontinence is rare enough that the patient should not fear it following surgery for prostate cancer. As with any surgery, the surgeon's personal experience is quite important. Thus, the patient should focus on finding medical centers with large volumes of surgeries and where continence following prostate cancer treatments is an expected outcome. ❖

*Dr. Kim has disclosed that he has no financial interests related to this topic.*