MedicalXpress

Study: Ureteral injury during robot-assisted prostate surgery

November 19 2013

There may be warning signs to help surgeons avoid damaging part of the urinary system during robot-assisted surgical removal of prostate cancer, ultimately preventing the expense of additional surgery, according to researchers at Henry Ford's Vattikuti Urology Institute.

Although rare, they found instances when the ureter – tubes that carry urine from the kidneys to the bladder – were cut and required repair. In each case, they identified patient characteristics that may forewarn such damage. The study was recently published in the *Journal of Endourology*.

The study –drawing from Henry Ford Hospital's experience with robot-assisted surgery removal of prostate cancer– was conducted in the context of a steady rise in robot-assisted prostatectomies in the U.S. during the past decade.

Robotics permit surgeons to better visualize anatomy, control bleeding, have greater dexterity, and treat prostate cancers more effectively without complications than was previously possible in traditional open surgery.

While practitioners have reported various complications during the procedure, little data existed prior to this study regarding injuries to the ureter during robotic prostatectomy.

Under guidance of Drs. Mani Menon and James Peabody, a research

team at Henry Ford's Vattikuti Urology Institute focused on 6,442 consecutive patients who underwent robotic prostatectomy by one of five surgeons at the hospital from January 2001 to June 2013.

"We found three patients in the study group, operated on by two of the five surgeons, who sustained complete transection of the ureter, although these surgeons were highly experienced, having performed more than 1,000 robotic prostatectomies," says Jay Jhaveri, M.D., M.P.H., lead author of the study. "This is well beyond the accepted learning curve of 100 cases."

"One of the patients required readmission for further treatment, and we were able to identify risk factors that predisposed all of them to ureteral injury."

Among them were a history of infection, abdominal surgery, radiation treatment, enlarged prostate glands and prior transurethral resection of the prostate, in which prostate tissue is surgically trimmed to remove urine flow blockage.

"This knowledge can help identify future patients who are at high risk of sustaining ureteral injury during robotic removal of a cancerous prostate gland," Dr. Jhaveri says. "Measures can then be taken either before or during surgery to reduce the probability of such injury."

The study concluded that despite its relatively rare occurrence, previous studies have isolated trends for patients who are at high risk for ureteral injury during prostatectomy. All of the Henry Ford patients had previous abdominal surgery and none of their injuries were noted intraoperatively.

"We found a 0.046% rate of ureteral injury during robotic prostatectomy which compares favorably with other similar studies and published data

for this topic," Dr. Jhaveri says.

Besides the clear benefits to the patients, the study shows such preventive measures can also help avoid prolonged, expensive hospitalization, need for additional treatment or surgery, as well as the costs of follow-up treatments.

Provided by Henry Ford Health System