Study: Kidney cancer patients preserve kidney function with robot-assisted partial nephrectomy

January 13 2014

Patients with chronic kidney disease who received robot-assisted partial nephrectomy to treat kidney cancer have minimal loss of kidney function—a smaller amount even than patients with normal kidney function, according to researchers at Henry Ford Hospital's Vattikuti Urology Institute.

The study, which includes patient data from five U.S. medical centers, is the largest of its kind.

The study is published online ahead of print in *European Urology*, the journal of the European Association of Urology.

"Our study supports robot-assisted partial nephrectomy as an alternative to open surgery for patients with chronic kidney disease because decreases in kidney function after the procedure appear minimal," says senior study author Craig Rogers, M.D., a Henry Ford urologist and robotic surgery specialist. "In addition, no patients developed end-stage kidney disease requiring long-term kidney dialysis.

"Chronic kidney disease is a growing public health concern. With robot-assisted partial nephrectomy (RPN), we can save kidneys and preserve kidney function in patients who need it most.

Traditionally, these patients required a large open incision and longer

recovery," says Dr. Rogers.

"Our study shows that these patients can also receive the benefits of a minimally invasive robotic approach when performed by experienced surgeons, and they do well."

All of the patients in the study underwent RPN, a minimally invasive surgical procedure to remove cancerous tumors from the kidney while sparing healthy tissue. All cases were performed by surgeons with extensive experience in the RPN operation.

Data was collected from nearly 1,200 patients who underwent RPN between 2007 and 2012.

Outcomes of patients who had pre-existing chronic kidney disease with decreased kidney function before surgery were compared against those with normal kidney function. Kidney function was measured according to each patient's glomerular filtration rate, which estimates the overall performance of the intricate system of cleansing filters in the kidneys.

Using a statistical device to account for differences among the patients, the researchers found that patients with chronic kidney disease had a lesser amount of decline in kidney function after RPN than those with normal kidney function, when measured at their first follow-up exam and later visits.

However, those with pre-existing chronic kidney disease had a higher risk of relatively low-grade surgical complications and a longer hospital stay.

Provided by Henry Ford Health System