

Researchers examine procedure utilization trends in patients with clinically localized renal masses

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New techniques in science and technology allow the medical community to continually improve patient care and experience, but as these new procedures are introduced, physicians must closely consider the relative risks and benefits for each patient. Laparoscopic surgery offers the short-term benefits of smaller incisions, shorter hospital stays, and less pain during recovery, but are there negative consequences in the long run for some patients? Certain groups of patients, like those with localized renal masses, may be more appropriately treated through surgical techniques that focus on preserving as much functional kidney as possible—especially since emerging data suggests that a loss of kidney function can lead to higher long-term risks of morbidity and mortality.

A new study to be presented by researchers from Fox Chase Cancer Center on Saturday, May 14, 2011, at the AUA 2011 Annual Meeting, examines whether the rapid adoption of minimally invasive techniques on the national level has had a negative impact on utilization rates of partial nephrectomy for [patients](#) with clinically localized renal masses.

"The AUA guidelines for localized renal masses recommend that [kidney](#) preservation is paramount when treating localized masses, but the rise of the number of partial nephrectomies—procedures that remove only part of a person's kidney—over time is lower than expected," says Marc Smaldone, M.D., urologic oncology fellow and lead author on the study. "As [patient care](#) evolves over time, we would expect to see the number

of kidney preserving procedures increasing. Unfortunately, our results demonstrate that radical nephrectomy rates have remained consistent, which may be due to the preferential adoption of laparoscopic nephrectomy over partial nephrectomy in community practice."

When treating a patient with a localized renal mass, doctors have many surgical options. In radical procedures, surgeons remove the entire kidney, while partial nephrectomy techniques focus specifically on tumor removal while preserving as much functional kidney as possible. Either procedure may be performed via an open procedure through a large incision or a minimally invasive (or laparoscopic) approach.

In their study, researchers at Fox Chase demonstrated a dramatic 58 percent decrease in the percentage of open radical nephrectomy procedures performed from 1995 to 2005. However, they also observed more than a two-fold increase in laparoscopic nephrectomies in comparison to kidney sparing procedures over the same time period. These results suggest that more urologists are opting for laparoscopic nephrectomy, which may be due to increased familiarity and technical ease over more complex open or laparoscopic kidney preserving procedures. As a result, there is not the expected increase in the number of kidney preserving operations being performed, and more patients than necessary are being exposed to the adverse long-term consequences of chronic renal insufficiency.

"Knowing what we do about the long-term risks associated with removing a person's kidney, such as higher rates of long-term morbidity, it is crucial that, as [physicians](#), we are doing all we can to spare as much of the organ as possible," says Robert G. Uzzo, M.D., F.A.C.S., chairman of the department of surgery at Fox Chase and member of the AUA Guidelines Council. "In this study, we're seeing a preference for laparoscopic procedures when we should be seeing a preference for nephron-sparing procedures."

To investigate this issue, Fox Chase identified 6,716 patients who underwent surgery for clinically localized renal masses between 1995 and 2005, drawn from linked SEER-Medicare data. They then compared utilization rates over time of four differing surgical procedures: open radical nephrectomy (ORN), laparoscopic radical nephrectomy (LRN), open partial nephrectomy (OPN), and laparoscopic partial nephrectomy (LPN). Their results demonstrate that over the ten-year period, utilization of nephron-sparing techniques—or partial nephrectomy—only increased by 15.5%, whereas 77% of patients with localized tumors were still managed with radical nephrectomy in 2005.

"Studies like these highlight that practice patterns evolve slowly over time, but more research is necessary," says Smaldone. "We now need to further investigate which types of institutions are performing specific procedure types and which patients have access to kidney preserving surgeries. These studies will ultimately help to ensure that we are providing all patients access to the best possible care."

"It is important that patients seek out care from physicians with expertise in kidney preservation techniques," adds Uzzo. "The benefits of laparoscopy don't offset the consequences of removing a patient's entire kidney if it's avoidable, and often, at most expert centers, a patient can receive the benefits of both through a laparoscopic partial nephrectomy."

Provided by Fox Chase Cancer Center

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