

Reports: Fewer Complications with Robotic-Assisted Surgery Compared with Open Surgery for Urologic Cancers

Globe Newswire

In two independent analyses comparing robotic-assisted surgery and open surgery performed on patients with urologic cancers, researchers found that robotic-assisted surgery results in fewer overall complications during and after surgery, less blood loss and shorter length of hospital stay.

In the first analysis, which was published in this month's issue of [Cancer Treatment Reviews](#) [1], the authors (Li K, Tianxin L, Xinxiang F, et. al.) reviewed the available literature on the efficacy and advantages of robotic-assisted radical cystectomy (RARC) versus open radical cystectomy (ORC) performed for bladder cancer. Included in the analysis (962 patients in total) were one randomized controlled trial, eight retrospective studies with prospectively collected data and four retrospective studies.

Radical cystectomy, which is the removal of the entire bladder, nearby lymph nodes, part of the urethra, and nearby organs that may contain cancer cells, is a common procedure performed for patients with stage 2 or stage 3 bladder cancer. According to the National Cancer Institute, bladder cancer is the sixth most common cancer in the United States.¹ It is the third most common cancer in men and the eleventh most common cancer in women, and causes approximately 15,000 deaths each year.

The analysis shows that although RARC was associated with longer operative time ($p < 0.001$), it may result in fewer overall complications during surgery ($p = 0.04$), more lymph node yield ($p = 0.009$), less estimated blood loss ($p < 0.001$), a lower need for a blood transfusion ($p < 0.001$) and a shorter length of hospital stay ($p < 0.001$). Positive surgical margins (leftover cancer cells) did not differ significantly between the surgical techniques. Sensitivity analysis on the prospective studies showed similar results except that no significant difference was seen for lymph node yield and length of stay between the two surgical techniques.

The second analysis, published in the [World Journal of Urology](#) [2] by Dr. Gianni Vittori from the Università di Firenze, compared kidney cancer patients who had received robotic-assisted partial kidney removal with those who had received open partial kidney removal. The two-year observational multicenter analysis was promoted by the "Associazione Giovani Laparoscopisti Endoscopisti" (AGILE), a non-profit foundation that involved six Italian urologic centers.

This year, there will be an estimated 65,000 new cases and 14,000 deaths related to kidney cancer in the United States. Since a majority of patients are diagnosed when the tumor is still relatively localized (stage 1 and 2) and are able to have

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surgery to remove the tumor, approximately 40 percent survive for at least five years.

Dr. Vittori's analysis involved a total of 198 and 105 patients enrolled in either open or robotic-assisted surgery groups, respectively. Prior to surgery, the patients undergoing robotic-assisted partial kidney removal were sicker ($p = 0.04$) and had tumors of smaller size ($p = 0.002$). While the surgical results indicated the robotic-assisted patient group had longer operative times ($p < 0.001$), they benefited from less blood loss, fewer surgical complications after surgery ($p < 0.001$), fewer surgical complications that required additional interventions or were life-threatening ($p = 0.001$), and shorter hospitalization times than the open surgery patients.

"As individuals and agencies seek to understand the impact of robotic-assisted surgery on healthcare outcomes, evidence-based medicine and all peer-reviewed clinical publications become increasingly important in understanding appropriate treatment options," said Myriam Curet, MD, Chief Medical Advisor, Intuitive Surgical. "Robotic-assisted surgery, while prevalent in urology and gynecology, is now being utilized for other important procedures such as cystectomy and partial nephrectomy where patients may benefit from a minimally-invasive option over open surgery."

¹ National Cancer Institute. "General Information About Bladder Cancer." Available from: <http://www.cancer.gov/cancertopics/pdq/treatment/bladder/healthprofessional> [3].

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[1] <http://www.globenewswire.com/newsroom/ctr?d=10054178&l=2&a=Cancer%20Treatment%20Reviews&u=http%3A%2F%2Fwww.sciencedirect.com%2Fscience%2Farticle%2Fpii%2FS0305737212002393>

[2] <http://www.globenewswire.com/newsroom/ctr?d=10054178&l=5&a=World%20Journal%20of%20Urology&u=http%3A%2F%2Flink.springer.com%2Farticle%2F10.1007%252Fs00345-013-1136-x>

[3] <http://www.cancer.gov/cancertopics/pdq/treatment/bladder/healthprofessional>