

### ROBOT-ASSISTED PARTIAL NEPHRECTOMY FOR cT1b-T2 RENAL TUMORS: PERIOPERATIVE OUTCOMES FROM A LARGE MULTICENTRE INTERNATIONAL DATASET (VATTIKUTI GLOBAL QUALITY INITIATIVE ON ROBOTIC UROLOGIC SURGERY)

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#### Aim of the study

Robot-assisted partial nephrectomy (RAPN) has been shown to be an effective minimally invasive treatment for small renal tumors with similar perioperative results and decreased warm ischemia time (WIT) compared to conventional laparoscopic partial nephrectomy. The robotic technology has the potential to expand the indications of minimally invasive nephron-sparing surgery to more challenging renal lesions. However, the outcomes of RAPN for larger, cT1b-T2 renal tumors have been reported only in relatively small and mainly single-institutional experiences.

#### Materials and methods

293 patients who underwent RAPN for a cT1b-T2 renal tumor between October 2006 and July 2013 were identified from a multi-institutional retrospective database including 1011 cases of RAPN from 9 tertiary robotic centres in Europe, North America, India and Australia. Intraoperative outcomes, pathological outcomes and complications were assessed. Complications were graded according to the Clavien-Dindo classification system.

#### Results

264 RAPNs were performed for cT1b tumors (median size 48 mm, IQR 42-54) and 29 for cT2 tumors (median size 80 mm, IQR 72-94). Median age of patients was 58 years and the average Charlson comorbidity score was 2 (IQR 0-3). Median operative time was 210 minutes (IQR 158-256). Median estimated blood loss and WIT were 150 ml (IQR 100-300) and 20 minutes (IQR 16-24), respectively. Ten intraoperative complications occurred (3.4%). Postoperative complications were observed in 58 cases (19.8%) and 23 (8.6%) were Clavien grade  $\geq 3$ . Hospital stay was on average 3 days (IQR 1-5). A benign pathology was found in 46 cases (16.1%). Fourteen tumors (4.8%) were pT3a at final pathology and positive surgical margins were detected in 11 cases (3.8%).

#### Discussion

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#### Conclusions

RAPN for cT1b-T2 tumors is feasible with limited blood loss and acceptable WIT, complication and positive surgical margin rate in centres with advanced robotic expertise.

### ROBOT-ASSISTED VERSUS LAPAROSCOPIC PARTIAL NEPHRECTOMY: A MULTICENTER MATCHED-PAIR ANALYSIS

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#### Aim of the study

only few studies compared the results of the two main alternatives of minimally invasive treatment of renal cell carcinoma (RCC), providing conflicting results regarding which technique provides more frequently the maximum success from a surgical perspective. Our aim was to compare the Trifecta outcome in a large multicenter matched series of patients treated with laparoscopic partial nephrectomy (LPN) or robotic-assisted partial nephrectomy (RPN) for cT1 RCC.

#### Materials and methods

Patients of the RPN arm, treated from Sept 2008 to Sept 2010, were extracted from a multicenter, international database including cases done in four high volume centers Patients of the LPN arm, treated between Jan 2009 and Dec 2012, were extracted from the Registry of Conservative Renal surgery database (RECORD) promoted by LUNA foundation of the Italian Society of Urology. We undertook a matched-pair analysis for patients age, tumor size, longitudinal location (polar vs mid pole) and exophytic rate ( $\geq 50\%$  exophytic vs others) with a 1:1 ratio with respect to the surgical approach, including 306 patients in both LPN and RPN groups. Perioperative outcomes were compared with univariate analysis, and a correlation analysis assessed clinical variables associated with the Trifecta outcome, defined as warm ischemia time (WIT)

#### Results

groups were comparable in gender distribution and preoperative renal function, as well as the matched variables. In RPN vs. LPN group, no significant differences resulted regarding operative time, perioperative complications (9.2% and 11.1%,  $p=0.43$ ), reoperation rate for Clavien grade  $\geq 3$  complications (2% vs. 2.6%,  $p=0.97$ ) positive surgical margin rate (4.2% vs. 2.5%,  $p=0.22$ ) and pathological and short-term functional results. The pedicle clamping was used significantly more often in the RPN group (87.9% vs. 49%,  $p$

#### Discussion

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#### Conclusions

the current multicenter analysis reveals that, in experienced hands, the trifecta can be achieved in  $\frac{3}{4}$  of patients both with LPN and RPN without significant differences. Additional studies are needed to investigate this issue further.