P091 Comparison by Pentafecta criteria of transperitoneal and retroperitoneal robotic partial nephrectomy for large renal tumors

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Introduction & Objectives: To compare and analyze surgical and functional outcomes of transperitoneal robotic partial nephrectomy (TRPN) and retroperitoneal robotic partial nephrectomy (RRPN) in localized renal tumors, including ≥4 cm renal masses.

Materials & Methods: Of 566 consecutive patients who underwent robotic partial nephrectomy by a single surgeon from December 2008 through July 2017, records for 523 patients who were preoperatively and 1-year postoperatively evaluated were analyzed for estimated glomerular filtration rate (eGFR). Primary endpoint was a comparison of Pentafecta criteria (negative surgical margin, no 30-day complications, warm ischemic time [WIT] ≤25 minutes, return of eGFR to >90% from baseline and no upstaging of chronic kidney disease) between TRPN and RRPN. Secondary endpoint was finding predictors for Pentafecta achievement.

Results: In all 523 patients, these Pentafecta criteria were lower for RRPN than TRPN: Operation time ($p < 0.001$), WIT ($p = 0.008$) and estimated blood loss ($p = 0.003$). In patients with ≥4 cm renal tumors, only operation time was faster in RRPN than TRPN ($p = 0.032$). RRPN demonstrated more eGFR decrease in all patients ($p = 0.006$) and patients with ≥4 cm renal tumors ($p = 0.008$). Pentafecta achievements, complications and recurrences were not significantly different between TRPN and RRPN in all patients and patients with ≥4 cm renal tumors. Multi-variable analysis revealed baseline hemoglobin ($p = 0.013$) and tumor size ($p < 0.001$) were predictive for Pentafecta achievement.

Conclusions: Pentafecta achievement was similar for TRPN and RRPN. Baseline hemoglobin and tumor size were predictors of Pentafecta achievement. RRPN was properly performed for anterolateral renal tumor.