

Video can be found at <http://www.ceju.online/journal/10000/clampless-partial-nephrectomy-1847.php>

'No clamp' – Zero Ischemia time 3-D Laparoscopic transperitoneal partial nephrectomy: a prospective evaluation

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Ischemia is a modifiable predictor of post-op decline in renal function. This potential negative effect of warm ischemia time (WIT) on renal function has led to the development of techniques aimed at minimizing WIT. The role of clampless laparoscopic partial nephrectomy in renal tumors is still not established. We prospectively evaluated the feasibility, safety, efficacy and long term outcomes of 3-D laparoscopic transperitoneal clampless partial nephrectomy (LPN) in clinical T1a renal tumors.

All consecutive patients admitted to our institution between June 2012 and January 2018, who underwent clampless 3-D LPN for a clinical T1a predominantly exophytic renal tumor by a single surgeon, with a normal, contralateral kidney, were included. The various clinical data were recorded and analyzed. We are presenting a video of one such case.

A total of 33 patients were included in the study. The mean age was 51 years with mean preoperative serum creatinine and estimated glomerular filtration rate (GFR) being 0.71 mg/dl and 75.5 ml/min/1.73 m² respectively. The mean tumor size was 3.2 cm. The tumor was superior polar in 15 (45.4%) patients, mesorenal in 8 (24.2%) patients and inferior polar in 10 (30.3%) patients. The tumor growth pattern was cortical in 23 (69.7%) patients and corticomedullary in 10 (30.3%) patients. The mean operating

time and estimated blood loss were 109.1 min and 123.7 ml respectively. The mean ischemia time was 19.1 min. There was no conversion to open. The positive surgical margins were nil. In histopathology, renal cell carcinoma was found in 93.9% and oncocytoma in 6.1% of patients. Intraoperative and postoperative complications presented in 6% and 9% of cases respectively and were mainly Clavien 1 and 2 only. The mean estimated GFR at 4 years (71.5) was not significantly lesser than the preoperative value ($p = 0.71$). At mean follow up of 49.3 months, there was no local or distal recurrence.

3-D Laparoscopic Clampless partial nephrectomy for small predominantly exophytic renal masses (T1a), is feasible, effective, with preservation of renal function, and has acceptable complications. It offers better renal function preservation at long term follow up. Therefore, wherever feasible, clampless lap PN can be an option. However, it is a technically challenging procedure and should be done by surgeons of significant laparoscopic expertise.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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