

Open Nephron-Sparing Surgery for T1b or Greater Renal Cell Carcinoma

Introduction and Objectives: Nephron-sparing surgery has become the standard of care for T1a renal cell carcinoma (RCC). Recently most centers have expanded the use of partial nephrectomy for tumor size greater than 4 cm (T1b). Here we present our operative, perioperative, and follow up outcomes for patients undergoing open partial nephrectomy (OPN) for stage T1b or greater renal cell carcinoma.

Materials and Methods: Patients underwent open partial nephrectomy for T1b or greater RCC between 2007 and 2012 by a single surgeon. Demographics, operative, perioperative, complications, and recurrence data were prospectively collected and analyzed.

Results: Thirty-eight patients underwent open partial nephrectomy for T1b RCC. The average age and tumor size for the cohort was 56 (range 35-78) years and 5.7 (range 4.2-11.5) cm. Our mean follow up is 25 months. The average operative time was 157 minutes. Seventeen OPN cases were performed without hilar clamping and 21 cases required cold ischemia time with the average hilar clamping time of 25 minutes. The blood products transfusion rate for the group was 21% (8 of 38). The average length of stay for the two groups was 5 days. There was no significant change in the preoperative GFR, post-operative GFR, and the GFR calculated at three months ($p=0.31$). There were a total of 7 complications (18%). Four cases of prolonged urine leak requiring stents, two major wound infections requiring negative pressure wound dressing, and one case of arteriovenous malformation requiring angioembolization. The distribution of pathology among the patients included 32 cases of pT1b, 2 cases of pT2, 3 cases of pT3a, and one case of pT3b renal cell carcinoma. None of the patients had any local recurrences. However, one patient presented with bony metastasis at eighteen month post-surgery.

Conclusion: Open partial nephrectomy is efficacious for stage T1b renal cell carcinoma (tumor size >4.0 cm) with acceptable morbidity and recurrence risk in short term follow-up. Larger studies with longer follow-up are needed to support these early observations.