

Is Partial Nephrectomy Suitable for Patients with More Co-morbidities?

Introduction and Objective: Existing literature is conflicting with regards to optimal use of nephron-sparing nephrectomy for small renal tumours in patients with increasing co-morbidities, especially in the older age group. We analysed factors affecting such patients undergoing partial or radical nephrectomies for oncological outcome and post-operative renal function.

Materials and Methods: This was an IRB-approved retrospective review of partial and radical nephrectomies performed in our institution between March 2007 and November 2010. Clinico-pathological factors were analysed. Estimated glomerular filtration rate (eGFR) was calculated using the CKD-EPI formula.

Results: There were 28 partial nephrectomies (n=23 open and n=5 pure laparoscopy) and 48 radical nephrectomies (n=20 open and n=28 pure laparoscopy). Age, gender, body mass index and pre-operative eGFR were similar in both groups. However, partial nephrectomy patients had a significantly higher Charlson Comorbidity Index score compared to radical nephrectomy patients (Mean of 1.79 and 0.81 respectively, $p=0.0049$). Out of 28 partial nephrectomies, all were clear cell renal cell carcinoma (n=27 were T1a and n=1 was T1b). The proportion of malignant small renal tumours was higher than most published series. Out of 48 radical nephrectomies, pathology showed 47 malignancies. Patients who underwent partial nephrectomy had a statistically significant maintained or improved eGFR at 24 months on both univariate ($p=0.004$) and multivariate analysis ($p=0.012$) compared to radical nephrectomy patients. Type of surgical access (open or pure laparoscopy) did not impact the post-operative eGFR, even at 24 months. Two of 28 patients who underwent partial nephrectomies had a positive parenchymal surgical margin. On a mean follow-up of 34.6 months (range of 16 to 59 months), none of the partial nephrectomy patients had radiological tumour recurrence detected. The 2 patients with positive surgical margins were free from recurrence at follow-up of 20 and 44 months respectively.

Conclusions: Partial nephrectomy is technically more demanding than performing a radical nephrectomy. Despite it being performed on patients with significantly more co-morbidities, partial nephrectomy is associated with significantly better preservation of renal function at 24 months and excellent short-term oncological outcome.