KIDNEY CANCER

Role of partial nephrectomy continues to expand

Nephron-sparing surgery is currently considered the standard of care for clinical stage T1a renal tumors. Concerns have remained, however, that despite preserving renal function, partial nephrectomy (PN) might compromise cancer control in patients with larger tumors. Now, encouraging data from three studies suggest that PN can be considered for all cT1 lesions.

Christopher Weight and colleagues from the Cleveland Clinic, Ohio, performed a retrospective analysis of 437 patients with cT1b tumors who underwent either radical surgery ($n = 298$) or elective PN ($n = 212$) between 1999 and 2006. Using a propensity model to control for selection bias, they found that, at 5 years, both cancer-specific and overall survival rates were significantly better for patients treated with PN (97.8% versus 87.9% and 94.5% versus 82.6%, respectively).

Radical nephrectomy (RN) was associated with a 3.4-fold higher chance of developing chronic kidney disease, and both PN and postoperative renal function independently predicted overall survival, even when controlling for tumor stage, patient age and comorbidity score. Regardless of surgical procedure, an estimated glomerular filtration rate (eGFR) of less than 45 ml/min/1.73 m²

was found to increase the risk of death from any cause by 4.6 times.

In a second study, Weight and co-workers compared RN and PN for benign lesions. By retrospectively identifying surgically removed 'cT1 tumors' that were recategorized as benign on final pathology ($n = 499$), the authors aimed to remove the confounding effect of cancer on survival outcomes. Again, they found that PN resulted in superior preservation of renal function (65% of patients who underwent nephron-sparing surgery maintained an eGFR >60 ml/min/1.73 m²) and RN was associated with a 2.5-fold increased risk of all-cause mortality.

Thus, the authors conclude that for cT1b lesions, PN not only offers equivalent cancer control to RN but is associated with improved overall survival, owing in part to the prevention of postoperative chronic kidney disease.

Finally, a team of investigators from the National Cancer Institute, Maryland, have demonstrated the feasibility of PN for cT1b tumors in patients with hereditary and multifocal disease. Overall and metastasis-free survival rates were 93.0% and 96.5%, respectively; comparable to those reported for sporadic tumors. Unfortunately, researchers were unable to compare these outcomes with those of

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patients who underwent RN, because over the same time period only three radical surgeries were performed.

The results of these studies suggest that PN should be performed for all clinical stage 1 renal tumors, whenever technically feasible.

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Original articles Weight, C. J. *et al.* Elective partial nephrectomy in patients with clinical T1b renal tumors is associated with improved overall survival. *Urology* doi:10.1016/j.urol.2009.11.087 | Gupta, G. N. *et al.* Oncological outcomes of partial nephrectomy for multifocal renal cell carcinoma greater than 4cm. *J. Urol.* <http://dx.doi.org/10.1016/j.juro.2010.03.035> | Weight, C. J. *et al.* Partial nephrectomy is associated with improved overall survival compared to radical nephrectomy in patients with unanticipated benign renal tumours. *Eur. Urol.* doi:10.1016/j.eururo.2010.04.033