

KIDNEY CANCER

Can renal mass characteristics predict PN outcomes?

Two recent research papers address the issue of whether features other than tumor size can be used to assess the feasibility of partial nephrectomy (PN). One study adds to the growing effort to standardize the description of small renal masses, the other focuses on the relationship between histological subtype and disease-specific mortality.

In the first study, researchers from Italy propose an anatomical classification system that can predict the risk of complications associated with PN. The PADUA (Preoperative Aspects and Dimensions Used for an Anatomical) score takes seven variables into account: anterior or posterior localization of tumor; position on longitudinal axis; rim location; sinus involvement; relationship with the urinary collecting system; endophytic and exophytic characteristics; and tumor diameter.

The investigators identified 164 patients with clinical stage T1 lesions and calculated the PADUA score of their tumors before they underwent open PN without clamping. Any complications that occurred in the first 30 days after surgery were graded using a modified version of the Clavien system; a total of 37 patients (22.6%) experienced complications, ranging from grade 1 to 3b.

Univariate analysis demonstrated significant association between

complication rate and all individual PADUA variables, except anteroposterior position and tumor size. Multivariate analysis revealed PADUA score was an independent predictor of overall complication rate ($P < 0.001$); patients with a score of 10 or higher were 30 times more likely to experience complications than those with a score of 6–7.

External validation of this classification system is required, and although laparoscopic cases were not included in their analysis, the authors hope the PADUA score will be used in future studies, to validate its use in patients who undergo laparoscopic or robotic procedures.

By contrast, North American researchers were unable to find a correlation between the histology of clinical stage T1 renal tumors and rates of disease-specific mortality. Previous reports have suggested that patients with particular histological subtypes might have a poorer prognosis; papillary tumors and clear cell cancers have both been implicated. If true, PN might be an insufficient treatment option for such patients, and radical surgery might be more appropriate.

However, the multicenter analysis of 1,205 patients who underwent PN between 1988 and 2004 did not reveal any significant variation in survival rate



for different histological subtypes. At 36 months after PN, disease-specific mortality rates were 97.8%, 100% and 97.4% for clear cell, chromophobe and papillary tumors, respectively.

As a result, the authors suggest that renal mass biopsy might be unnecessary given that histology findings have no bearing on the type of nephrectomy chosen.

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Original articles Crépel, M. *et al.* Does histologic subtype affect oncologic outcomes after nephron-sparing surgery? *Urology* **74**, 842–845 (2009).

Ficarra, V. *et al.* Preoperative aspects and dimensions used for an anatomical (PADUA) classification of renal tumors in patients who are candidates for nephron-sparing surgery. *Eur. Urol.* **56**, 786–793 (2009).