

## Simple enucleation versus radical nephrectomy in the treatment of pT1a and pT1b renal cell carcinoma

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**INTRODUCTION & OBJECTIVES:** Simple enucleation (TE) showed excellent oncological results in large retrospective series. No study has compared oncologic outcomes after TE and radical nephrectomy (RN) for the treatment of pT1 RCC. The aim of the present study is to compare the oncologic outcomes after TE and RN in pT1 RCCs.

**MATERIAL & METHODS:** We retrospectively analyzed 475 patients who underwent TE or RN for pT1 RCC, N0, M0 between 1995 and 2007. TE was done in 332 patients while RN in 143. Local recurrence, progression-free survival (PFS) and cancer-specific survival (CSS) were the main outcomes of this study. The Kaplan-Meier method was used to calculate survival functions, and differences were assessed with the log-rank statistic. Univariate and multivariate Cox regression models were also used.

**RESULTS:** The surgical margin status of tumors that had TE was always negative. The mean follow-up was  $72 \pm 44$  mo after RN and  $58 \pm 38$  mo after TE ( $p = 0.0004$ ). At last follow-up, 393 patients (82.7%) were alive and disease free and 56 (11.8%) had died of other causes. Overall, 26 patients experienced progressive disease (5.4%) and of those 5 were alive but with disease progression (1%) and 21 (4.4%) had died of metastatic disease. No local recurrences were observed in the patients who underwent RN. Overall, 3 patients with pT1a RCC developed isolated renal recurrence after TE and this was always elsewhere in the kidney. Specifically, all patients diagnosed having local recurrences had negative surgical margins. The 5- and 10-yr PFS estimates were 91.3% and 88.7% after RN and 95.3 and 92.8% after TE ( $p=NS$ ). The 5- and 10-yr CSS estimates were 92.1% and 89.4% after RN and 94.4% (5- and 10-yr CSS) after TE ( $p=NS$ ). No statistically significant differences between RN and TE were found after adjusting CSS probabilities according to age at surgery ( $\leq 65$  yr, log-rank p value: 0.99; or  $>65$  yr, log-rank p value: 0.14), grade (Fuhrman nuclear grades 1–2, log-rank p value: 0.48; grade 3, log-rank p value: 0.89; or grade 4, log-rank p value: 0.62), stage (pT1a, log-rank p value: 0.46; or pT1b, log-rank p value: 0.44) or clear cell subtype (log-rank p value: 0.37). Surgical treatment failed to be a predictor of PFS or CSS both at univariable and multivariable analyses. The potential limitation of the present study includes that the data originate from a retrospective review.

**CONCLUSIONS:** TE can achieve oncologic results similar to those of RN for the treatment of pT1 RCCs provided tumors are carefully selected based on their safe and complete removal.