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**PERITUMORAL PSEUDOCAPSULE INVASION DOES NOT AFFECT THE RISK OF LOCAL RECURRENCE AFTER TUMOR ENUCLEATION IN THE TREATMENT OF RENAL CELL CARCINOMA**

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*Introduction:* Peritumoral pseudocapsule (PS) invasion after tumor enucleation (TE) in the treatment of renal cell carcinoma (RCC) could potentially affect the risk of local recurrence. The aim of the present study is to prospectively evaluate this hypothesis in a consecutive series of patients having TE for RCC. *Methods:* TE was done by blunt dissection in 201 consecutive patients using the natural cleavage plane between the tumor and normal parenchyma. Pseudocapsule penetration, surgical margin (SM) status and routine clinical and pathological variables were recorded. *Results:* Overall, 164 tumors were diagnosed as single sporadic RCCs and thus included in the study. Mean (SD, median, range) tumor greatest dimension was 3.5 (1.7, 3.2, 1.0-12.5) cm. At the pathological examination, the PS was intact and free from invasion on the parenchymal side in 73.2%, while it was penetrated on the parenchymal side in 26.9% of RCCs. In all cases the SM were negative. Even in patients with pseudocapsule penetration and invasion beyond it, neoplastic cells were separated from the surgical margin by a thin layer of normal tissue with signs of lymphoplasmocytic inflammation. The 3-year overall survival was 95.5%. The 3-year cancer-specific and progression-free survival were 100% and 96.6%, respectively. After a mean (range) follow-up of 44 months (25-69), the true local recurrence rate was 0.6%. None of the RCCs with pseudocapsule penetrated on the parenchymal side recurred locally. *Conclusion:* TE is oncologically safe. Peritumoral pseudocapsule invasion does not influence the risk of local recurrence when TE is adopted for the treatment of RCC.

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**PATHOLOGICAL CHARACTERISTICS AND PROGNOSTIC IMPACT OF PERITUMORAL CAPSULE PENETRATION IN CLEAR CELL RENAL CELL CARCINOMA AFTER MINIMAL PARTIAL NEPHRECTOMY**

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*Aim:* To evaluate the pathological characteristics of peritumoral capsule and the prognostic impact of capsule penetration on tumor recurrence in patients treated by nephron-sparing surgery (NSS) for clear cell RCC. *Patients and Methods:* Between January 2005 and December 2007, 115 consecutive patients with single sporadic clear cell RCC had NSS. Peritumoral capsule status was carefully analyzed by two dedicated uropathologists. The degree and the side of capsule penetration, if present, were evaluated. *Results:* According to the peritumoral capsule status, in 68 (59.1%) the capsule was intact and free from neoplastic penetration (PC-), while in 47 (40.2%) there were signs of invasion within its layers. Overall, 29.6% had capsular penetration on the parenchymal side (PCK), whereas, 11.3% had peritumoral capsule invasion on the perirenal fat tissue side (PCF). None of the patients had positive surgical margins detected at the pathological examination. Mean (median, range) follow-up was 48 months (46, 25-69). The 5-year cancer-specific and progression-free survival were 91.7% and 89.5%, respectively. The 5-year progression-free survival for tumors PC-, PCK and PCF was 97%, 96.2% and 48.5%, respectively ( $p < 0.0001$ ; PC- vs. PCF  $p < 0.0001$ ; PCK vs. PCF  $p = 0.0002$ ). The multivariate Cox model showed PCF to be the sole significant independent predictor of progression-free survival. *Conclusion:* PCF is a significant and independent predictor of worse outcome. Patients with clear cell RCC with intact peritumoral capsule, as well as those with PCK, had an excellent prognosis and these pathological features could possibly add to prognostic nomograms if proved statistically significant in larger series with longer follow-up.

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**MULTIPARAMETRIC MRI AND SIGNIFICANT PROSTATE CANCER**

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