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### WHEN TO PERFORM LYMPH NODE DISSECTION IN RENAL CELL CARCINOMA PATIENTS: A NOVEL APPROACH TO PREOPERATIVELY ASSESS THE RISK OF LYMPH NODE INVASION AT SURGERY AND NODAL PROGRESSION DURING FOLLOW UP

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**Scopo del lavoro**
Whether to perform lymph node dissection (LND) in renal cell carcinoma (RCC) is still debated. We aimed to preoperatively identify patients who might benefit from LND.

**Materiali e metodi**
In 1983 RCC patients treated with either partial or radical nephrectomy, we considered as a mutual endpoint the presence of lymph node invasion (LNI) at final pathology or lymph node (LN) progression during the follow-up period. Nodal progression was defined as the onset of a new clinically detected lymphadenopathy (>10 mm) in the retroperitoneal lymphatic area. Logistic regression analyses were used to assess the effect of each potential clinical predictor (age, body mass index, tumor side, symptoms, performance status, clinical tumor size, clinical TNM stage, albumin, calcium, creatinine, haemoglobin, and platelets levels) on the outcome of interest. The most parsimonious multivariable predictive model was developed. Discrimination, calibration and net benefit were calculated.

**Risultati**
The prevalence of nodal invasion was 6.1% (n=120/1983). During the follow-up period, 82 patients (4.1%) experienced nodal progression. At multivariable analyses, the most informative independent predictors resulted T stage [cT3-4 vs. cT1-2, odds ratio (OR) 1.52, p=0.05], clinical nodal status [cN1 vs. cN0, OR 7.09, p

**Discussione**
We demonstrated that LN progression is not a negligible entity and it may occur when surgery planning is inaccurate (the avoid of LND in high risk patients, e.g. pNx cases) or when limited LND is performed, increasing the risk of false negative cases (e.g. a lymph node status underestimation for inadequate LND). The model can be considered the first attempt to identify before surgery, exclusively relying on clinical parameters, those cases in which the tumor shows a lymph node predilection during their natural history and that might benefit from a LND at the time of surgery.

**Conclusioni**
By relying on a unique approach combining the risk of harbouring LNI and/or LN progression during follow-up period, we provided the first clinical pre-surgery model predicting the need for LND.





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### PATHOLOGICAL CHARACTERISTICS AND PROGNOSTIC IMPACT OF PERITUMORAL CAPSULE PENETRATION IN RENAL CELL CARCINOMA AFTER TUMOR ENUCLEATION

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**Scopo del lavoro**
To evaluate the pathological characteristics of peritumoral capsule and the prognostic impact of capsule penetration on tumor recurrence in patients treated by tumor enucleation (TE) for RCC.

**Materiali e metodi**
Between January 2005 and June 2011, 304 consecutive patients with single sporadic intracapsular RCC had TE. Peritumoral capsule status was carefully analyzed by two dedicated uropathologists. The degree and the side of capsule penetration if present were evaluated.

**Risultati**
According to the peritumoral capsule status, of the 304 RCCs, in 155 (51%) the peritumoral capsule was intact and free from neoplastic penetration (PC-) while in 149 (49%) there were signs of penetration within its layers. Overall, 34.9% had capsular penetration on the parenchymal side and of those 75 (24.7%) had penetration only (PCK+) and 31 (10.2%) had capsular penetration and invasion beyond it (PCK++). Whereas, 14.1% had peritumoral capsule invasion on the perirenal fat tissue side and of those 18 (5.9%) had capsular penetration (PCF+) and 25 (8.2%) had penetration and invasion beyond it (PCF++). None of the patients had positive surgical margins detected at the pathologic examination. Mean (median, range) follow up was 49 months (46, 25-69). During the study period, 13 (4.3%) patients had progressive disease. The 5-year progression-free survival rate for RCC according to PC status was: PC- 97.5%, PCK+ 98.2%; PCK++, 92.8%; PCF+, 82.6%; PCF++, 74% (p

**Discussione**
The presence of a capsular involvement could represent the first pathological evidence of the capacity achieved by tumor cells to infiltrate and invade normal parenchyma and perirenal tissue, and might potentially increase the risk of local and systemic recurrence and could eventually be used as a prognostic factor in patients with clinically intracapsular RCC amenable for conservative surgery.

**Conclusioni**
TE is an oncologically safe NSS technique. PCF is a significant and independent predictor of tumor recurrence in patients with clinically intracapsular RCCs scheduled for NSS and appear to be a stronger predictor than TNM stage. PCK does not predict the risk of recurrence.