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HISTOPATHOLOGICAL ANALYSIS OF PERITUMORAL PSEUDOCAPSULE AND SURGICAL MARGINS STATUS IN RCC AFTER TUMOR ENUCLEATION: PROSPECTIVE SINGLE CENTER STUDY

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INTRODUCTION AND OBJECTIVES: The oncological safety of blunt tumor enucleation (TE) of renal cell carcinoma (RCC) depends on the presence of a continuous pseudocapsule (PS) around the tumor, and on the possibility of obtaining negative surgical margins (SM). The objective of the study is to investigate the PS and SM after TE to define the real need to take a rim of healthy parenchyma around the tumor to avoid the risk of positive SM.

METHODS: Between September 2006 and December 2007, data were gathered prospectively from 90 consecutive patients who had TE for RCC. After formalin fixation (10%), all specimens were step-sectioned a 5-mm intervals and the entire specimen analyzed by a dedicated uropathologist (CDC). TE was done by blunt dissection using the natural cleavage plane between the tumor and normal parenchyma. PS, SM and routinely available clinical and pathological variables were recorded.

RESULTS: At the pathological examination, the mean (range, SD, median, IQR) tumor greatest dimension was 3.1 (0.5-12.5, 1.7, 2.9, 2.1-3.8) cm. The pathological analysis according to the 2002 TNM classification showed that 75.6% of tumors were pT1a, 16.7% pT1b, 2.2% pT2, 4.4% pT3a and 1.1% pT3b. On the basis of Fuhrman nuclear grading, 20% of tumors were G1, 65.6% G2 and 14.4% G3. All RCCs were surrounded by a continuous (not fenestrated) fibrous pseudocapsule, irrespective of tumor size, with a mean (range) pseudocapsule thickness of 0.39 (0.048-0.798) mm. In 60 RCCs (67%) the PS was intact and free from invasion (PS-) while in 30 (33%) there were signs of penetration within its layers, with or with no invasion beyond it. Indeed, 26.6% had PS penetrated on the parenchymal side and 6.6% on the perirenal fat tissue side. In all cases the SM were negative after TE. In case of microscopic penetration of PS, a minimal layer of kidney tissue with a mean (range) thickness of 1.05 (0.38-1.60) mm invariably ensured negative SMs. This thin rim of normal parenchymal tissue with signs of lymphoplasmocytic inflammation was present as 'leopard spots' on the intact pseudocapsule, and it was always present in case of neoplastic penetration of the PS into the kidney tissue.

CONCLUSIONS: We confirm that to stay close to the tumor can minimize the risk of positive SMs. Our study clearly represents a rationale for adopting the TE technique as the standard procedure for the excision of pT1a and pT1b RCC tumors, in conformity with the EAU guidelines.

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LOCALIZED T1A RENAL LESIONS IN THE ELDERLY: OUTCOMES OF LAPAROSCOPIC PARTIAL AND RADICAL NEPHRECTOMY

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INTRODUCTION AND OBJECTIVES: The current gold standard for the treatment of localized T1a renal lesions is nephron sparing surgery (NSS). Despite this, NSS remains under-utilized in elderly patients. The purpose of this study was to review the outcomes of patients ≥70 years of age following laparoscopic partial nephrectomy (LPN) and laparoscopic radical nephrectomy for T1aN0M0 renal lesions at our institution.

METHODS: From a prospectively maintained database we identified 28 (LPN) and 19 (LRN) patients aged ≥70 who underwent laparoscopic renal surgery for cT1aN0M0 lesions, between 2002 and 2008. Pre-operative, operative, and post-operative outcomes were analyzed and compared using means, student's t-test/rank test and chi-square test/fisher's exact test where appropriate. $p<0.05$ was considered statistically significant.

RESULTS: The mean age of our cohort was 75.4 years. 55.3% of patients were male and 71.7% presented incidentally. Intra-operative and post-operative complication rates of 8.5% and 19.1% were observed. There was one peri-operative death from a suspected pulmonary embolism in an 84 year-old man with extensive cardiovascular disease undergoing LRN. There was one conversion to open radical nephrectomy. Patients undergoing LPN and LRN were similar with respect to age, gender, co-morbidity, BMI and pre-operative estimated creatinine clearance (CrCl) (table 1). The LRN group had larger lesions (2.4 cm vs. 3.3 cm; $p<0.01$) and a higher percentage of central tumors (73.6% vs. 26.3%; $p<0.01$). Estimated blood loss was greater in the LPN group (171 mL vs. 62 mL; $p=0.01$). Patients who underwent LPN had approximately 40% higher estimated CrCl compared to the LRN group at a mean follow-up of 23 months (61.4 mL/min vs. 43.4 mL/min; $p<0.01$). There were no positive surgical margins and no recurrences were observed in either group during the duration of follow-up.

CONCLUSIONS: Laparoscopic renal surgery in elderly patients can be safely performed. Although it is a more complex procedure, LPN provides superior preservation of renal function when compared to LRN in this patient population. In surgically amenable T1a lesions, and in appropriately selected patients ≥70 years of age, LPN should be the preferred approach to NSS.

Combined, LPN and LRN peri-operative characteristics and outcome data

	Combined	LPN	LRN	p value (LPN, LRN)
n	47	28	19	
age, mean	75.4 (70 - 84)	74.9	76.2	0.30
% male	55.3	57.1	52.6	0.76
BMI	27.8	28.0	27.5	0.67
% + smoking history	43.2	37.5	46.4	0.56
% medical co-morbidity	78.7	82.1	73.8	0.12
Pre-op CrCl (mL/min)	63.2	63.22.4	63.13	0.98
Size (cm)	2.7	2.4	3.3	<0.01
% central tumor	55.3	26.3	73.6	<0.01
OR time (min)	207	215	192	0.21
EBM (mL)	125	171	62	0.01
WIT (min)		28.0		
% CS repair		64.3		
PSM rate (%)		0		
Intra-op complication rate (%)	8.5	10.7	5.3	0.51
Post-op complication rate (%)	19.1	21.4	15.8	0.63
LOS (days)	2.1	1.9	2.4	0.41
Last CrCl (mL/min)	54.2	61.4	43.4	<0.01

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PARTIAL VERSUS RADICAL NEPHRECTOMY: A RETROSPECTIVE COMPARISON OF OUTCOME

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INTRODUCTION AND OBJECTIVES: We retrospectively compared mid-term oncological outcome of patients undergone radical nephrectomy (RN) and patients undergone partial nephrectomy (PN) with a pT1a or pT1b renal cell carcinoma(RCC).

METHODS: Between March 1996 and February 2007 960 patients were admitted to our department with a diagnosis of RCC requiring surgical treatment. We collected all data of patients with pT1a and pT1b RCC. We identified 382 patients, 186 of them underwent RN and 196 underwent PN. Preoperative patients characteristics were similar between two groups (Fig.1) Mean follow-up was 60.8 months (range 3 to 120). Surgical procedure