

Smart Communications (SC1–SC10)

Renal cell carcinoma: Oncological outcomes

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SC1 Is chronic interstitial nephritis associated with a worse pathological features at definitive specimen? A retrospective analysis of a monocentric series of clear renal cell carcinoma

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Aim of the study: Actually clear cell renal cell cancer (ccRCC) is the most widespread renal carcinoma, reaching about 90% of all histotypes. In literature there are several papers risk factors associated with a worse prognosis or a greater aggressiveness of the cancer, in order to identify these factors for prevention, but the data concerning risk factors associated to ccRc are still lacking. Chronic interstitial nephritis(CIN) is a nonspecific diagnosis of a pattern of kidney injury.

Aim of our study is to verify the association of CIN with renal cell carcinoma in terms of aggressiveness considering pathological stage and Fuhrman grade(FG).

Materials and methods: We retrospectively evaluated, from March 2013 to December 2017, 101 patients undergoing consecutive radical nephrectomies for renal cancer. After excluding patients with evidence of other histotypes, we created a cohort of 71 patients with pathological specimen of “clear cell renal cell carcinoma”. Two groups were classified by pathological stage ($pT \leq 2$ and $pT \geq 3$) and by Fuhrman grade ($FG \leq 2$ and $FG \geq 3$) and we evaluated the frequency on histological specimen of chronic interstitial nephritis. Logistic regression analysis was performed to assess the association between chronic interstitial nephritis and pathological stage and Fuhrman Grade. We assumed $p \leq 0.05$ as level of statistical significance.

Results: Overall, on 71 pathological specimens of renal cell renal carcinomas, 45 patients (63.38%) had a pathological stage $\leq pT2$ and 26 patients (36.62%) $pT \geq 3$. Concerning the Fuhrman grade, 41 patients

(57.74%) had $FG \leq II$ and 30 patients (42.26%) $FG \geq III$. CIN was found overall in 18 definitive histological examinations, with a percentage of 26.9% (7/26) of pT patients in patients 3 and 40% (12/30) in patients with $FG \geq III$. At the logistic regression analysis the chronic interstitial nephritis was positively associated with the risk of more aggressive ccRC (OR 4.1, $p < 0.05$) but not of high pathological stage ($p = 0.647$).

Discussion: In our series Chronic interstitial nephritis was found to be an independent predictor of high Fuhrmann score. These data should be considered to manage postoperative follow-up in these patients. The data should however be confirmed by prospective multicenter studies with larger samples.

SC2 Evaluation of peritumoral pseudocapsule characteristics: Preliminary results

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Aim of the study: A renal Peritumoral Pseudocapsule (PC) composed of fibrous tissue and compressed surrounding healthy parenchyma is a pathological feature of Renal Cell Carcinoma (RCC). The features of the pseudocapsule determine a natural cleavage plane for tumor enucleation and affect the tumor free status of the enucleated surface. In Literature it is still debated if all RCC have a complete pseudocapsule and, consequently, if tumor enucleation is a safe oncological procedure for every histological type. The aim of this study was to evaluate characteristics of renal PC and relate to histological subtypes.

Materials and methods: We evaluated 59 pT1-T3a renal tumors undergone partial or radical nephrectomy from January 2017 to September 2018. All the specimens were evaluated and reviewed by a single uropathologist. We identified the status of the peritumoral pseudocapsule including its existence, completeness, composition and thickness. We also analysed the pathological features of renal mass including size, histological type, stage and grade. PC thickness was measured by digital scanner. ANOVA with Bonferroni adjustment was applied using IPSS software.

Results: We found 36 clear cell renal cell carcinomas (RCCs), 15 papillary RCCs, 3 chromophobe RCCs, 4 oncocytoma, and 1 nephroblastoma. PC was present and complete in all tumors. We found no differences in PC composition. Our data showed that clear cell RCCs had a significant thicker PC than papillary RCCs ($p < 0.001$), with a mean thickness of 0,487 mm and 0,290 mm respectively. Mean PC thickness was 0,383 mm for T1a RCCs, 0,487 mm for T1b, 0,325 mm for T2a, 0,268 mm for T2b, 0,441 mm for T3a. G1 RCCs showed a mean PC thickness of 0,454 mm, G2 0,417 mm, and G3 0,376 mm. There are not significant difference of PC thickness between RCCs pT or grade ($p > 0.001$). These results and our experience support the hypothesis that simple enucleation following PC natural cleavage plane is safer in clear cell RCCs, thanks to their thicker PC, avoiding the risk of PC infraction and incomplete tumor resection.

Discussion: There are significant differences of PC thickness between RCCs histological type, but not between pT or grade. Our data showed that clear cell RCCs had the most consistent PC compared to papillary RCCs. This suggest that simple enucleation is oncologically safer in clear cell RCCs. T1b and Grade 1 RCCs had the thickest PC but more cases are needed to confirm these results.

SC3

Predictors of positive surgical margins after robot-assisted partial nephrectomy for localized renal tumors: Insights from a large multicenter international prospective observational project (The Surface-Intermediate-Base Margin Score Consortium)

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Aim of the study: Predictors of positive surgical margins (PSM) after partial nephrectomy (PN) are still unclear. Moreover, role of resection technique (RT) in this setting is poorly investigated. Surface-Intermediate-Base (SIB) score was first introduced in 2014 as a novel standardized reporting system to classify and communicate different RTs during PN. Aim of this study was to explore predictors of PSM after robotic PN in a large multicenter international prospective observational project (SIB Consortium).

Materials and methods: Data from consecutive patients with cT1-2N0M0 renal masses treated with PN from September 2014 to March 2015 at 16 tertiary referral centres included in the SIB margin score International Consortium were prospectively collected, harnessing the SIB score to report resection techniques in a standardized fashion. For the present study, only patients submitted to robotic PN were included. PSM was assigned at pathological examination if the tumor tissue was marked with ink. Multivariable regressions analysis (MVA) for the prediction of PSM were fitted.

Results: 289 patients were enrolled in the study. Malignant histology was found in 205 (70.9%) cases and pathological upstaging to pT3a was recorded in 22 (10.8%) cases. Median (IQR) preoperative tumor size for the entire cohort was 3.0 (2.3–4.2) cm and median (IQR) PADUA score was 8 (7–9). SIB score of 0–2 (enucleation), 3–4 (enucleoresection) and 5 (resection) were reported in 53.3%, 27.3% and 19.4% of cases, respectively. PSM rate was 4.5%, 11.4% and 3.6% in case of enucleation, enucleoresection and resection, respectively. At pathological analysis, 18 (6.2%) cases of PSM were recorded. At MVA, only enucleoresection (SIB score 3–4) versus enucleation (SIB score 0–2) was found to be an independent predictor of PSM at final pathology (HR: 2.68; 95%CI: 1.25–7.630; $p = 0.04$), while resection (SIB score 5) was not ($p = 0.622$).

Discussion: In our experience, enucleoresective technique compared to enucleation was the only independent predictor of PSM after robot-assisted PN. These findings are needed to be confirmed in larger prospective series.

SC4

A surgical nomogram for predicting the risk of positive surgical margins in patients treated with partial nephrectomy for renal cell carcinoma: The RECORD2 project

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Aim of the study: To assess the positive surgical margin (PSM) rate, to investigate for its predictors and develop a surgical nomogram in patients treated with partial nephrectomy (PN) for localized renal cell carcinoma (RCC) in a large multicenter study.

Materials and methods: We prospectively evaluated 2584 patients undergoing PN for renal tumors between January 2013 and December 2016 at 26 urological Italian centres (the RECORD2 project). PSM was