EVALUATION OF KIDNEY INJURY FOLLOWING CLAMPLESS AND CLAMPED LAPAROSCOPIC PARTIAL NEPHRECTOMY: CAN NEUTROPHIL GELATINASE-ASSOCIATED LIPOCAIN (NGAL) BE HELPFUL?

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OBJECTIVES:
NGAL (Neutrophil gelatinase-associated lipocain), a protein overexpressed in case of renal injury and dosable in both plasma and urine, is being discussing as a precocious biomarker of acute kidney injury.
The aim of this study was the evaluation of role of urinary-NGAL as marker to detect and quantify renal injury in patients who underwent clampless or clamped Laparoscopic Partial Nephrectomy (LPN).

PATIENT AND METHODS:
Seventy-five consecutive patients who underwent LPN between 3/2012 and 7/2013 were involved in this study. Patients were divided into two groups according to the surgical technique used: Group A-37pts treated with clampless-LPN (cl-LPN) and Group B-38pts treated with "clamped" (c-LPN). NGAL urinary values were dosed on urine samples collected preoperatively and 24hours, 5 days, 3 months after surgery by ELISA in all patients. Serum Creatinine (SCr) and GFR were determined at the same time points. Differences between the groups and within each group at different time points were tested, p-values<0.05 were considered significant.

RESULTS:
The two groups resulted comparable in terms of demographic, preoperative and pathological data. Mean SCr and GFR values were not different between group A and B and were stable at every time point. NGAL values were 29.3 ng/ml, 32.8 ng/ml, 73.6 ng/ml, 31.5 ng/ml in goup A and 26.5 ng/ml, 70.2 ng/ml, 87.8 ng/ml, 32.0 ng/ml in group B, respectively at baseline, 24 hours, 5 days and 3 months after surgery. Analyzing each group, a statistically significant increase of NGAL values was found from baseline to 24 hours in Group B (p=0.03) while, in Group A, no significant increase was found until 5 day after surgery (<0.01). For both groups no differences were found when specifically testing NGAL
baseline versus 3rdmonth value (Group A; p=0.85, Group B; P=0.12). When comparing differences between the Groups A and B in terms of NGAL values, the only significant difference was observed 24 hours after surgery (p=0.04).

DISCUSSION:
We observed a progressive increase of urinary NGAL values from baseline until the fifth post-operative day and a return to basal values at 3rd month. c-LPN Group, compared with cl-LPN Group, showed a steeper and higher increase of NGAL values in the early postoperative period. Conversely, SCr and GFR values remained stable in all measurements.

CONCLUSIONS:
These data suggest that NGAL could be a useful molecular marker to evaluate the trend of acute kidney damage, increasing precociously and strongly in case of renal ischemia.

SIMPLE ENUCLEATION FOR THE TREATMENT OF HIGHLY COMPLEX RENAL TUMORS: PERIOPERATIVE, FUNCTIONAL AND ONCOLOGICAL RESULTS.

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Aim of the study
to assess perioperative, functional and oncological results of simple enucleation (SE) in patients with RCC with 10-13 PADUA score, and to evaluate differences in perioperative results between open and robotic SE.

Materials and methods
The data of 510 patients treated with SE between July 2006 and August 2013 in our department for RCC were gathered in a prospectively maintained database. Of these, 96 had RCC with PADUA 10-13 (high risk nephrometry tumors) and were selected for this study, including 76 treated open and 20 with robotic SE (endoscopic robotic-assisted simple enucleation: ERASE). Conventional perioperative variables were collected and compared between open and robotic approach with univariate analysis. Survival status and functional data were gathered at follow-up. The probability of survival was estimated by the Kaplan-Meier method.

Results
The mean tumor diameter was 4.8 cm, the PADUA score resulted 10, 11, 12 and 13 in 57.3%, 29.2%, 11.5%, and 2.1% of tumors, respectively. Overall, 19.8% of patients had stage≥3 chronic kidney disease (CKD) and the 17.7% an imperative/relative indication. Clamping of renal pedicle was used for almost all patients(99%), with a mean WIT of 19,2 ± 5,7 minutes. Average operative time was 126 minutes, mean EBL was about 200 cc, and median(IQR) LOS was 6(5-7) days. The percentage of patients with postoperative complications was 26.1% (2.1% Clavien 1, 14.6% Clavien 2, 8.3% Clavien 3, 1% Clavien 4). Benign tumors accounted for 12.5% of patients. PSM rate was 3.6% (3/84). The trifecta outcome was accomplished in 56.2% of patients. In the robotic group the mean operative time resulted significantly longer (175 vs.113 min, p

Discussion
The application of SE in tumors with adverse nephrometry seems particularly appropriate, in order to reduce the underuse of nephron sparing surgery in these clinical settings.

Conclusions
SE in highly complex renal masses is feasible, safe, and has satisfactory oncological results with a good preservation of the overall renal function.