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Introduction & Objectives: Although partial nephrectomy (PN) remains the treatment of choice for T1a renal tumours, it also has been successfully performed for T1b and larger renal masses. Therefore, the objective of this study was to evaluate outcomes of PN in different tumour size groups for T1b RCC.

Materials & Methods: A retrospective analysis of prospectively collective data of all partial nephrectomy cases (n=520) from 2004 to 2018 at our Institution was conducted. 35 cases of 4 to ≤7 cm solid kidney tumours were selected. These cases were divided into three groups according to tumour size (cm): A (4. –4.9), B (5.0–5.9) and C (6.0-6.9). Analysis of demographic and pathology data, ischemia and operation time, renal function and recurrence free survival analysis was performed. SPSS 16.0 software was used for statistical analysis (p value < 0.05 was considered statistically significant).

Results: The median age of the patients was 60,94 (±12,8) years. Six (17,1%) of the patients underwent PN for the tumor of a solitary kidney. All of the tumours n=35 (100%) were found to be malignant. Prevailing cases were clear cell carcinoma which was observed in 23 (66,0%) patients. Other tumours were papillary carcinomas- 5 (14,3%) and chromophobe carcinomas- 7 (19,7%). Most of the tumours were G2, and were found in 24 (69,0%) cases, G3 tumours were found in 9 (25,3%) and G1 in 2 (5,7%) of the cases. Based on Fuhrman classification none of the tumours were grade I or IV, but 23 (65,7%) were found to be grade II and 12 (34,3%)– grade III. We noticed that most of the Fuhrman grade II tumours were in a group A (14 (70,0%). Operation time in A, B and C groups was 114, 94 and 117 min respectively. Acute renal failure developed in 2 (5,7%) of the patients evaluated. Where were observed 2 (5,7%) intraoperative complications: one case of arterial injury and another case of injuries to adrenal gland and peritoneal wall, both classified as grade IIIb by Clavien-Dindo grading system. The glomerular filtration rate (GFR) in the late post-operative period almost reached preoperative level in groups A and B, however in group C, the mean glomerular filtration rate remained lower. 3 of the patients experienced tumour recurrence. Recurrence free survival in different groups was 95%, 100% and 71.4% respectively. Median follow-up time was 25±21 months.

Conclusions: According to our data T1b renal tumors suitable for nephron sparing surgery can be safely treated by partial nephrectomy disregarding tumour localization and size. PN helps to preserve renal function and obtain good oncological results. However worse restoration of kidney function may be expected in cases of bigger size T1b tumor cases.