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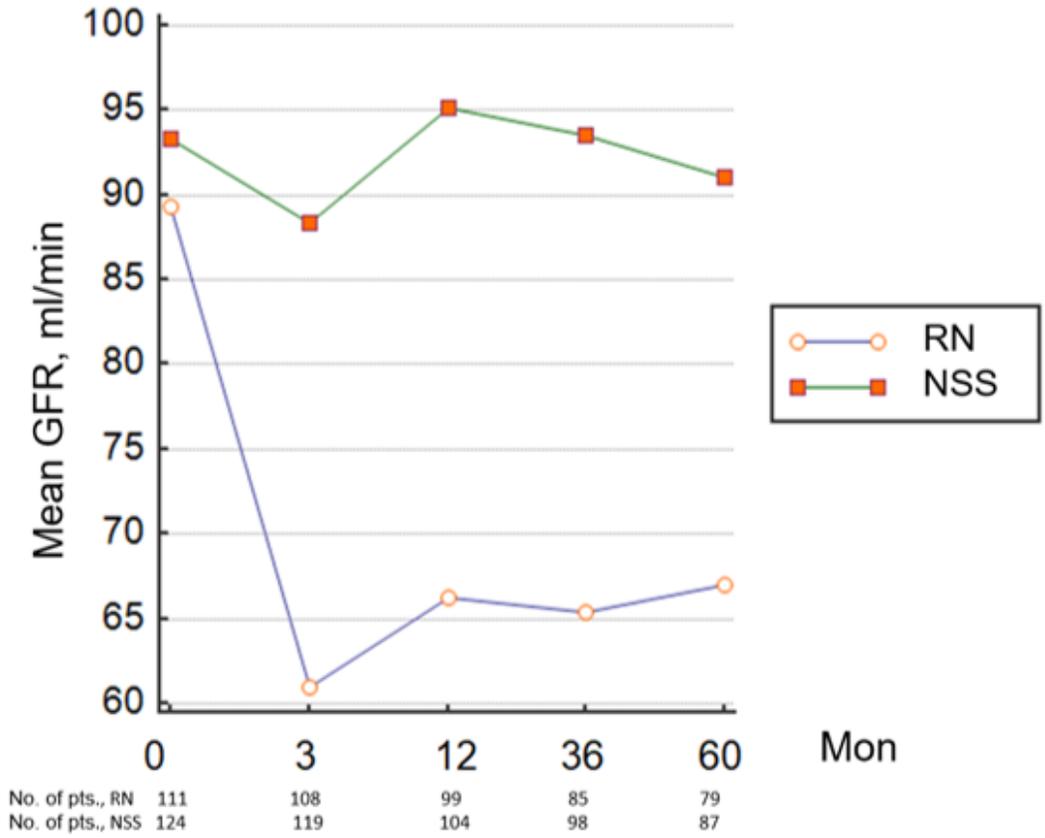
Introduction & Objectives: Kidney resection equals radical nephrectomy in terms of oncological outcomes, although data about long-term functional results is controversial. The aim of our study was to evaluate kidney function in patients with localized renal tumors larger 4 cm that underwent partial and radical nephrectomy.

Materials & Methods: Retrospective cross-sectional statistical analysis of patients undergoing surgery with T1b - T2 tumors from 2008 to 2018 years. During analysis we excluded patients with tumors smaller than 4 cm, locally advanced and metastatic kidney cancer, bilateral lesions, primary CKD, low performance status (ECOG > 2), after which a group of 235 cases proceeded to further analysis. Groups of comparison were formed according to surgery type: radical (n = 111) and partial nephrectomy (n = 124). The groups were compared by sex, age, tumor size, body mass index and ECOG status. Indications to surgery based on NCIU nephrometry scoring system (location and RFPV dependent). Kidney function was evaluated by scintigraphy data prior to surgery and 3,12, 36 and 60 months afterwards. For statistical comparison Student's, Mann-Whitney and chi-square tests were used; the curves were built according to long-term GFR levels in both groups.

Results: The groups were matched by sex (60/51 vs 71/53; $p = 0,15$, $\chi^2 = 3,76$), age (54,1±10,9 vs 52,9±11,8 years; $p > 0,4$), ECOG - status (0,53±0,56 vs 0,72±0,57; $p = 0,8$), body mass index (30,9 ± 6,1 vs 28,3 ± 4,5; $p = 0,06$) and average tumor size (73,2 ± 17,2 mm vs 69,9 ± 18,5; $p = 0,17$). Prior to surgery there was found no statistically significant difference between total GFR of both groups (89,3 ± 18,8 ml/min vs 93,3 ± 18,5 ml/min; t-test, $p = 0,2$), although significant kidney function decrease was observed among patients undergoing radical nephrectomy during

3 (t-test; $p < 0,01$), 12 (t-test; $p < 0,01$) and 60 months (t-test; $p < 0,03$) after surgery. The comparison of both groups total GFR is shown on figure 1.

Fig.1 - Mean estimated glomerular filtration rate as a function of time by assigned treatment.
 GFR = glomerular filtration rate; NSS = nephron-sparing surgery; RN = radical nephrectomy.



Conclusions: Partial nephrectomy is feasible in patients with localized kidney tumors and size larger than 4 cm , providing better functional outcomes over radical nephrectomy. Taking to account equal oncological outcomes of both surgery types, organ-sparing management seems more favorable in terms of reducing comorbidity development risks.