P042 Can be percutaneous nephrolithotomy (PCNL) considered as a first-line treatment in all cases of stones larger than 2 cm? The expanding role of retrograde intrarenal surgery (RIRS)

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Introduction & Objectives: PCNL is recommended as a primary treatment in the management of renal stones ≥2 cm by European Association of Urology (EAU) guidelines and RIRS is regarded as the second-line therapy. Thank to advances in technology, new modern flexible ureteroscopes as well as effective lithotripters have been developed and RIRS has become an important alternative in the treatment of large urinary stones. Evidenceis limited as few studies have compared these procedures. The aim of this study was to evaluate the efficacy and safety of RIRS in the treatment of kidney stones greater than 2 cm and to compare its results with those of PCNL, in terms of the stone-free rate, need for further procedures, intra- and postoperative complications, mean operative time and hospital stay.

Materials & Methods: All RIRS and PCNL performed between June 2016 and February 2019 were retrospectively analysed. Demographic characteristics, preoperative predictor variables (preoperative urinary culture, hypertension, diabetes, urinary tract malformations and use of anticoagulants or antiplatelet drugs) and characteristics of the stones (location and size, radiodensity and the presence of hydronephrosis) were documented. Furthermore, we analysed the stone-free rate (it was defined as stone residual fragments <5 mm on X-Ray, CT or USS 3 months after the treatment), intra- and postoperative complications and the need for additional treatments.

Results: A total of 38 patients underwent PCNL (mean age 58.4 -SD 14.5- years, 42.1% male) and 20 patients underwent RIRS (mean age 58.7 -SD 17.5- years, 40% male). The PCNL group had a similar mean stone size (26.87mm, SD 7.09) than the RIRS group (28.79mm, SD 10.12). There was no statistically significant difference between the two groups with respect to number of stones (1.71 –SD 1.43- in the PCNL group vs 2–SD 1.56-), radiodensity or stone localization. Stone-free rates were 53.4% and 47.3% of the RIRS and PCNL groups, respectively (p=0.158). Postoperative complication rates were similar (10% in the RIRS group and 15.8% in the PCNL group, p=0.431). The mean duration of operation was 111 (SD 36) min in the RIRS group and 136 (SD 40) in the PCNL group (p=0.028) and the hospital stay was significantly shorter in the RIRS group (2,5 –SD 1.09- vs 4.9 –SD 1.33- days in the RIRS and PCNL groups, respectively; p=0.000). 20% of patients who underwent RIRS required a further procedure for stone clearance and 23.7% of patients who underwent PCNL.

Conclusions:

RIRS can be an alternative to PCNL in the treatment of kidney large stones greater 2 cm. In our study, RIRS provide successful results in terms of stone-free rates and complications and it has some advantages, that include lower hospital stay and surgical time. As a consequence, RIRS can be a first-line option in the treatment large-sized renal stones in selected patients.