P084 Super-mini PCNL vs RIRS with single use-flexible ureteroscope for the treatment of lower pole renal stones <20 mm

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Introduction & Objectives: The management of lower pole renal stones <20 mm represents a significant dilemma for the urologists. The options include PCNL, RIRS and ESWL, all with their strengths and disadvantages. All these methods have been subjected to significant technological advancement in the last years, which tremendously widened their indications, while lowering their complications rate. Two of the most recent improvements in endourological procedures are the Super-Mini PCNL (SMP) and RIRS with single-use ureteroscopes (RIRS-SU), which aim to resolve the main problems in mini-PCNL and RIRS techniques. The aim of our study is to assess the safety, efficacy, and stone-free rate (SFR) of super-mini PCNL and RIRS with single use scopes in the management of lower pole renal stones <20 mm.

Materials & Methods: The design of the study is a prospective comparative non-randomized study. From March 2018 to April 2019, 64 patients were treated with RIRS-SU (Group A) and 53 patients with SMP (Group B) for lower pole radio-opaque renal stones <20 mm. The mean age, sex, stone size, operating time, hospital stay, complications and, as a primary variable, SFR after surgery and at 1-month post-op were compared between the two groups. The success of the operation was defined as no residual stone or fragments <3 mm on X-ray KUB.

Results: The two groups were comparable in pre-operative demographic and stone parameters. Operative time was longer in Group A (mean 74,3 minutes; 46-120 min) compared to Group B (mean 53.6 minutes; 41 – 106 min). Hospital stay is significantly shorter in Group A (2,2 days; 2-5 days) compared with Group B (3,8 days; 3-8 days) ($p<0,01$). SFR immediately after the procedure was higher in Group B (92,45%) compared to Group A (87,5 %) ($p<0,01$), and it keeps being higher at 1 month post-op - Group B - 96,2% vs 89% in Group A. Re-treatment rate was higher in group A – 7,8 % vs 3,1 % in Group B. Complications rate is higher in SMP Group (12,7% in group B vs 9,8 % in Group A). There is a tendency of more episodes of post-op fever in Group A (8,6% vs 4,3%) and more episodes of prolonged hematuria in Group B (7,4% vs 3,1%). We haven`t observed complications > CDC 2 in either group. There were 2 cases of re-hospitalization in Group A (3,7%).

Conclusions: RIRS-SU and SMP are both safe and highly effective methods for treating lower pole renal stones with a diameter less than 20 mm. SMP had a better SFR than RIRS-SU, but the hospital stay was longer and there were more hemorrhagic complications, whilst RIRS had a significantly longer operating time, a higher incidence of postoperative fever, and a lower SFR.