P078 Calyceal choice for renal access under sonographic guidance: Does it really affect the success rates of percutaneous nephrolithotomy?

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Introduction & Objectives: To evaluate the effects of calyceal choice (middle or lower calyx) for renal puncture under sonographic guidance during percutaneous nephrolithotomy (PNL) on the stone-free rates and complications during and after the procedure.

Materials & Methods: In this prospective study, a total of seventy patients undergoing ultrasound guided PNL operation for 20-30 mm renal pelvic stones between June 2016 and June 2018 were included. Depending on the calyx chosen for initial renal puncture patients were randomized into 2 groups namely Group 1 (n:35) with middle calyx entry, Group 2 (n:35) lower calyx entry. Several per – and post operation related parameters such as duration of operation, stone-free as well as complication rates and radiation exposure time were analyzed between the the groups in a comparative manner.

Results: While the mean age of the patients were 45.67±1.50 years, mean stone size was 316.4±17.95 mm^2. There was no significant difference between the groups with respect to the age, body mass index of the cases and the grade of hydronephrosis. However, the skin to collecting system distance was shorter in the middle calyx entrance (p=0.0214). The total duration of the procedure was 74.69±2.94 minutes in Group 1 (middle calyx entry) and 84.29±4.25 minutes in Group 2 (lower calyx entry) (p=0003). The main reason for this finding was that the middle calyx entrance was found to be performed in a much shorter time period when compared to lower calyx approach. On the other hand, although not stratistically significant, radiation exposure time was noted to be shorter in Group 1. The post-operative stone-free rate was higher in Group 1, but the difference was again not statistically significant. (91.4 % in Group 1, 80% in Group 2 respectively, p=0.3059). Lastly, there was no statistically significant difference in Hb reduction rates, blood transfusion requirement and complication rates between the two groups.

Conclusions: Getting an access to the renal collecting system (pelvis) through the middle calyx during ultrasonic guided PNL procedure seems to be more advantageous to lower calyceal approach by reducing the both the duration of PNL procedure as well as radiation exposure with significantly higher stone-free rates. Regarding the complication rates however, there was no significant difference between the middle and lower calyx entries.