P037 Efficacy and safety of access to the superior calyx in percutaneous nephrolithotomy (PNL) in the supine position

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Introduction & Objectives: The key point of percutaneous surgery is the correct selection of the access calyx. In certain situations such as large or complicated kidney stones, access to a superior calyx can ensure the highest stone-free rate. The objective is to assess the efficacy and safety of access to the superior calyx in percutaneous nephrolithotomy (PNL) in the supine position.

Materials & Methods: Retrospective, descriptive, observational review that includes 16 cases of PNL with access to superior calyx (12 cases of intercostal access and 4 subcostal access) made between March 2013 to May 2018. Surgical technique: The patient's placement was in the modified Valdivia position. Initially, retrograde ureteral catheter placement with occlusion balloon. Next, the renal puncture to the upper calyx was performed under fluoroscopic and ultrasound control between 10 - 11 and 12 rib (in case of intercostal access) or subcostal. Subsequent dilation to place the 24F sheath (18F with mini-nephroscope). The lithofragmentation was performed with ultrasonic energy and Holmium laser. It is defined as stone free patient if it has calculus fragments less than 4 mm. Complications are described by the Dindo-Clavien classification.

Results: The average age was 49 years with female predominance (9 out of 7). The procedure was performed on the right kidney in 60% of the cases and staghorn stones were treated in 40% of the patients. The average size of the treated calculus was 30.2mm (+/-) and the most frequent location was in the upper calyx (86%). The mean surgical time was 132 minutes with an average decrease in Hemoglobin of 1.9 gr / dL. In a single patient, mini-PNL access was used with intercostal access to the upper calyx combined with ureterorenoscopy. 12% of the procedures required a second percutaneous access to the lower calyx because of the lithiasic burden on the upper chalices and other stones on the lower chalices. Complications were observed in 31% of cases (5 cases); in 18% (3 cases) were Clavien II (blood transfusion, pneumonia) and in 12.5% (2 cases) were Clavien III (percutaneous nephrostomy placement due to obstructive uropathy and evacuator abdominal drainage). An average postoperative stay of 4 days was obtained. 77% of patients are free of lithiasis.

Conclusions: Access to the superior calyx in percutaneous nephrolithotomy (PNL) in supine position is a safe and effective approach, although not without complications.