

Sin A.¹, Dr Sandu S.B.², Dr. Nedelea S.², Dr Dragomiristeanu I.², Prof. Dr. Jinga V.³

¹Clinical hospital "Th. Burghel", Dept. of Urology, Bucharest, Romania, ²Clinical hospital, Dept. of Urology, Bucharest, Romania, ³U.M.F. "Carol Davila" University of Medicine and Pharmacy, Dept. of Urology, Bucharest, Romania

Introduction & Objectives: The prevalence of obesity is increasing in the global context. The number of obese individuals has rapidly increased in recent years both in developed and developing countries. There are unique challenges in the surgical management of renal calculi in the obese patient. In order to stratify the outcomes of PCNL in relation to body mass index, we reviewed our recent experience with PCNL in patients with BMI greater than 30.

Materials & Methods: We reviewed the records of obese patients undergoing percutaneous nephrolithotomy in 2018 at „Theodor Burghel” Clinical Hospital and we compared them to a control group of unselected patients with similar stone size. The inclusion criteria were: radiopaque calculi (stone-free status evaluated through renal X-ray) with mean cumulative stone size greater than 2 cm and BMI between 30 and 40 (no morbidly obese patients). The exclusion criteria were as follows: insufficient information; BMI classification was inconsistent; congenital or acquired renoureteral anomalies. During the study period 42 obese patients underwent percutaneous nephrolithotomy, of whom 27 met the inclusion criteria. The main outcomes that were analyzed and compared to the control group were complication rate, operative time, stone-free rate at 14 days, and hospital stay.

Results: A total of 27 procedures were performed on patients aged 27–76 years, with a gender distribution being almost equivalent (55% women and 45% men). There were 4 cases of patients with ureteral obstruction and caliceal stones in which “push back” rigid ureteroscopy was performed before PCNL. Mean operative time for all procedures, including the time to obtain percutaneous access was 75,7 minutes and the average post-procedure hospital stay was 5,3 days. There were 3 cases (11%) of Clavien grade II bleeding complications (requiring blood transfusion) and one patient underwent angiography having selective arterial embolisation (Clavien grade III). The results in the control group were not significantly different with an average operative time of 63 minutes and a mean post procedure stay of 4,2 days; there was only 1 patient requiring blood transfusion in this group. Stone-free status at 14 days was evaluated using a simple X-ray and renal ultrasound after the extraction of the ureteral stent. Staghorn calculi were present in 5 cases in the study group (18,5%). The stone-free rate was better for nonstaghorn (20 out of 22 patients, 91%) compared with staghorn calculi (3 out of 5 patients, 60%), although the results were similar in the control group with a slightly better outcome for the staghorn calculi (80% stone-free rate).

Conclusions: PCNL is an effective treatment for renal stones in obese patients which has a stone-free rate and a hospital stay that is comparable to that achieved in an unselected patient population. The complication rate and increased operative time may put these patients at risk and should be considered by urologists during treatment.