P074 Effectiveness and safety of the percutaneous nephrolythotripsy through the upper calyx

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Talyshinskii A., Guliev B.

North-Western State Medical University named after I.I.Mechnikov, Dept. of Urology , Saint Petersburg, Russia

Introduction & Objectives: Percutaneous nephrolithotripsy (PCNL) is mainly performed through the lower calyx, but in a certain group of patients it is made through the upper calyx. The purpose of our research was to compare the results of PNL, performed through upper or lower access.

Materials & Methods: This study included the results of PCNL in 568 patients with primary kidney stones operated at the Urology Department of the City Clinical Hospital № 2 and the Urology Center with robot-assisted surgery of the Mariinsky Hospital. Patients with recurrent stones and previous operations on the kidney were excluded. There were 360 men (63.4%) and 208 women (36.6%). The average age of patients was 48.6 ± 15.2 (from 28 to 76) years. The patient's data were divided into two groups: I (main) Group - 240 (42.5%) PCNL performed through the upper calyx; II (control) Group - 328 (57.5%) PCNL produced through the lower calyx. The average stone size in Group I was 2.6 (2.4 - 3.8) cm, and in Group II - 2.6 (2.4 - 3.8) cm. A comparative analysis of the time and effectiveness of the operation, the number intraoperative and postoperative complications, terms of hospitalization were performed.

Results: In Group I, PCNL was effective in 206 (85.8%) of 240, and in Group II, in 335 (91.0%) of 368 patients. However, the number of patients with coral nephrolithiasis in I Group was more compared to II Group (25.6% / 14.8%). The mean operative time (56.0 ± 18.5 / 48.4 ± 14.5 min), hospitalization time (4.5 ± 1.8 / 4.2 ± 1.4 days) and anesthesia (2.4 ± 1 , 0 / 2.2 ± 0.9 days), the number of postoperative fever (7.9% / 8.1%) was not significantly different. Repeated PCNL due to residual stones were not performed. In I group additional interventions were used in 34 (14.2%) patients (25 - ESWL, 9 - ureteroscopy) and in II Group - in 33 (9.0%) (23 - ESWL, in 10 - ureteroscopy). We did not observe injuries of the abdominal cavity. Blood transfusion was carried out in 17 (7.1%) and 12 (3.3%) patients, respectively. In the upper calyx group there were 3 (1.3%) cases of damage to the pleural cavity, leading to hydrothorax (2) and hemothorax (1). Puncture and drainage were performed in these patients. There were no similar complications in the control group.

Conclusions: Percutaneous access through the upper calyx provides direct access to the main part of the PCS of the kidney and allows you to remove the maximum part of the staghorn stone and remove the concrements located in the upper third of the ureter. Frequent complications of the intercostal puncture in the PCS that used during the performing upper pole access are injuries of the pleural cavity, the treatment of which depends on the severity of the patient's symptoms.