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Laparoscopic-assisted percutaneous nephro-lithotomy in ectopic pelvic kidneys

S. Giannakopoulos, G. Toufas, C. Dimitriadis, S. Giannopoulos, C. Kalaitzis, E. Patris, S. Touloupidis

Department of Urology, Democritus University of Thrace, Alexandroupolis, Greece

Introduction: Urolithiasis in ectopic pelvic kidneys presents unique challenges in the decision-making and technical aspects of stone treatment. Percutaneous nephrolithotomy (PCNL) in ectopic pelvic kidneys is difficult to perform due to anatomic restrictions caused by the pelvic bones posteriorly and the bowel anteriorly. We report our experience in laparoscopic-assisted PCNL for pelvic kidneys.

Materials: Three patients with calculi in pelvic kidneys were treated. The mean stone number was 3 and maximum stone diameter ranged from 1.4-3.5 cm. In the lithotomy position, a 6F open-ended ureteral catheter was introduced retrograde into the kidney. Pneumoperitoneum was established using Veress needle. A 10 mm port for the camera was inserted at the umbilicus and two secondary ports were inserted in the right and left iliac fossa. The anterior surface of the kidney was exposed by mobilizing the overlying sigmoid colon. Under laparoscopic and fluoroscopic guidance a 18G needle was used to gain access into the collecting system. A 0.038inch guidewire was inserted and tract dilation was done with Amplatz dilators. A 26F nephroscope was introduced and all calculi were removed with a combination of ultrasonic lithotripsy and forceps extraction. Flexible nephroscopy was also used to ensure stone-free status. A 20F drain was placed close to the kidney and a double pig-tail stent was inserted in a retrograde fashion.

Results: The mean operating time was 115 minutes (range 100-210). Complete clearance was achieved in all patients with a single access tract, in one session. None of the patients in this series required blood transfusion and no other complications were recorded. The peritoneal drain was removed on postoperative day 2.

Conclusion: Laparoscopic-assisted PCNL for pelvic kidneys demonstrates excellent stone-free rates with minimal complications or ancillary procedures required. This technique will likely maintain an important role in stone treatment for ectopic pelvic kidneys.

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