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Pediatric percutaneous nephrolithotomy in an adult Urology Department

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Introduction: Renal stone disease is an uncommon problem in children. In cases of large stone burden percutaneous nephrolithotomy (PCNL) offers excellent outcome for this age group. However, pediatric urologists performing PCNL are not always available. We report the initial experience of an adult urology department in pediatric PCNL.

Methods: We retrospectively analyzed the results and outcome of PCNL in children with renal calculi treated by one adult urologist, from June 2009 to April 2012. Seven patients (8 renal units) with a mean age of 4.5 years (2-12 years) underwent PCNL during this period. Among these patients 2 had solitary pelvic stones, 3 had pelvic and calyceal stones and 2 had staghorn stones (in one case bilateral). Maximum stone diameter ranged from 2 to 4.5 cm. Puncture and tract dilatation was done under ultrasonic and fluoroscopic control. The final tract dilation ranged between 14-26Fr. A variety of instruments was used including rigid nephroscope 24Fr, mini nephroscope 12Fr, semirigid ureteroscope 8.5Fr, flexible nephroscope 16Fr and flexible ureteroscope 8.4Fr. Stone fragmentation was achieved using ultrasonic and holmium;YAG laser lithotripters.

Results: In six patients a single tract was used. Access was through the lower, middle and upper calyx in 2, 3 and 1 case respectively. The patient with bilateral staghorn stones required two and three tracts on the left and right side respectively. In total there were 3 supracostal and 8 subcostal accesses. Mean operating time was 75 minutes (50-120) and mean radiation time 1.6 minutes (0.5-8). Complete clearance was achieved in all patients requiring, however, the complementary use of at least two different endoscopes. No complications were recorded.

Conclusion: Pediatric PCNL is a safe and effective procedure when performed by adult urologists. However, significant overall experience in PCNL and the availability of a complete range of endoscopes and intracorporeal lithotripters are required.

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