Treatment of Uretero-Pelvic Stones: Laser Ureteroscopic Lithotripsy and ESWL

Introduction and Objectives: Management of impacted uretero-pelvic (UP) stones (both proximal ureter and pelvis) remains challenging for urologists. These calculi are frequently associated with obstructive uropathy and renal function deterioration. A kidney stone is considered to be impacted when the stone becomes lodged in the urinary tract and is unable to be passed through the urine stream. Extracorporeal Shock Wave Lithotripsy (ESWL) is the least invasive treatment but its success rate decreases for stone size > 1 cm. So we first performed retrograde endoscopic treatment for impacted UP stones (both in pelvis and proximal ureter), then the residual escaped stone fragments were treated by ESWL.
Materials and Methods: We analyzed the patients medical records between March 2005 and June 2011. A total of 16 patients with impacted UP stones, larger than 1 cm, after ESWL failing, were enrolled in this study. First endoscopic retrograde treatment was performed using a semirigid ureteroscope 7/9F and Holmium laser lithotripsy in general anesthesia in all patients. The day after the endoscopic procedure, ESWL was performed on the residual escaped stone fragments on an outpatient clinic using Dornier Compact Delta II lithotripter. The mean numbers of ESWL treatments were 1,2. Successful outcome was defined as: patient stone-free on radiography and renal ultrasounds (r US) 1 month after the treatment.
Results: Average stone diameter was 15,0 mm. All patients first underwent retrograde endoscopic holmium laser lithotripsy and then ESWL. Overall stone free rate was 100%. There were no significant complications.
Conclusions: Impacted kidney stones require immediate attention to avoid the risk of infection or more severe kidney damage. Ureteroscopic holmium laser lithotripsy and ESWL are usually reserved to complex proximal ureteral stones-impacted calculi who failed other stone removal procedures, in marked dilatation of renal collecting system and in large stones.

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