

time became longer. In 56 cases (84.8%), all of the stones were extracted with success. In one case which we could not get into ureter, stone was taken out with ureteroscopy after antegrade DJ catheter insertion. Secondary ureteroscopy was performed to 3 cases and ESWL to 5 cases as an additional treatment in which stones migrated to kidney.

Conclusions: Ureteroscopy in pediatric patients is not as easy as in adult patients, however, after a learning period, it is effective and safe. Surgeons have to pay more attention and use suitable equipments.

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Management of ureteral calculi: shockwave lithotripsy or ureteroscopy?

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Introduction and Objectives: To investigate and compare the efficacy and safety of shockwave lithotripsy (SWL) and ureteroscopy (URS) in the treatment of ureteral calculi.

Material and Methods: A total of 716 patients with ureteral calculi, who were treated for a period of 18 months (January 2005 – July 2006) were enrolled in this comparative study. The patients were divided in 3 groups: 459 patients (64%) underwent ESWL, 249 (35%) – ureteroscopy and 8 (1%) – open surgical ureterolithotomy. Electromagnetic machine Lithostar Multiline (Siemens, Germany) was used for lithotripsy using power levels from 17 kV to 23 kV. 211 (46%) patients required more than one SWL session. With the patient under spinal or general anesthesia, in the lithotomy position, ureteroscopy was conducted using a semirigid ureteroscope 8.5 Fr (Olympus, Germany). An ultrasound generator LUS-2 (Olympus, Germany) and Holmium YAG laser (VersaPlus, Power Suite) were used for intraluminal lithotripsy. Ureteral stent was inserted only in the presence of indications for stenting. The patients, in whom previous SWL and ureteroscopy were unsuccessful, underwent open surgery. Plain abdominal x-rays and ultrasound scans were obtained 3 months after the procedure.

Results: The demographic and clinical characteristics of all patients are statistically similar. At the third month postoperatively, 353 out of 459 (76%) patients in the SWL group, 212 out of 249 (85%) in the ureteroscopy with energetic stone disintegration group and 8 (100%) patients in the open surgery group, were free of residual stone fragments. The success rates depending on stone location in the proximal, mid- and distal ureter, were 80%, 72% and 78% for the SWL group and 74%, 82% and 100% for the URS group, respectively. Patients with unsuccessful URS due to proximal stone migration required insertion of double J stent and subsequent SWL. Patients with unsuccessful SWL, required an attempt of stone reposition and/or insertion of double J stent, and a second session of SWL 7 days after the first procedure. In cases of failure a ureteroscopy was performed. Only in 8 patients with ureteral calculi these 2 treatment methods were unsuccessful and an open surgical ureterolithotomy was performed.

Conclusions: Our results show that both URS and SWL as monotherapy or in combination are highly effective treatment methods of ureteral calculi. Open surgical ureterolithotomy is performed in only 1% of patients, in whom these treatment methods or the combination between the two of them were unsuccessful. SWL is safer and minimally invasive method that requires no anesthesia and in most cases no hospitalization of the patient, but on the other hand its success rate is lower and/or requires additional procedures. URS is a more effective method with higher success rate as single procedure and minimal complication rate, but it requires anesthesia and hospitalization of the patient.

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Comparative evaluation of pneumatic versus holmium: YAG laser lithotripsy for impacted ureteral stones

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Introduction and Objectives: We prospectively analyzed and compared effectiveness and complications of pneumatic with the holmium:yttrium-aluminum-garnet (Ho:YAG) laser in the ureteroscopic management of impacted ureteral stones.

Material and Methods: From January 2006 to January 2008, we performed retrograde endoscopic treatment in 288 patients with ureteral stones in our clinic. The patients with impacted stones were prospectively randomized into two groups according to the lithotripter used to fragment the stone: pneumatic (n: 40) and laser (n: 40). The preoperative, operative and postoperative follow up findings are analyzed and compared.

Results: The average stone size was similar in both groups (11.3+4mm versus 11.4+5mm). The operation time was significantly diminished in laser (p<0.001). The stone free rates after a single ureteroscopic procedure were 80% and 97.5% in pneumatic and laser, respectively (p<0.05). Auxiliary treatments were needed in 8 (20%) patients in pneumatic group while it was needed only 1 (2.5%) patient in the laser group (p: 0.02). After the additional procedures 100% success rate was achieved in both groups. The rate of double J stent insertion was significantly higher in pneumatic (p: 0.01). In the pneumatic group, 3 cases of stone up migration and 1 case of post-operative stricture was seen while no such complication was noted in the laser group. The rate of complications was significantly higher in the pneumatic group (p: 0.02).

Conclusions: Ureteroscopic treatment with Holmium-YAG laser is effective first line therapy for chronically impacted ureteral stones with diminished operation time, high stone free, low complication and additional treatment rates.

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The experiences in laparoscopic ureterolithotomy: multicentric analysis of cases, based on "Turkurolap Group"

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Introduction and Objectives: The indication of laparoscopic surgery for ureter stones was restricted to the special cases, big size or impact stones. We presented special cases who underwent laparoscopic ureterolithotomy in various clinics.

Material and Methods: Forty-one patients were included to the study from 5 urology clinics in which routine laparoscopic surgery has been performing. Following history, physical examination, urine analysis, creatinin, intravenous urography, ultrasonograph, age, gender, stone size, hydronephrosis, previous ESWL, previous ureteroscopic stone therapy, laparoscopic approach, operation time, ureteric incision, insert double-j stent, amount of drainage, hospitalization period, complication were evaluated.

Results: Mean age was 41.8 in 30 male, 11 female patients. Mean ureter stone volume was 227.7 mm³. Retroperitoneoscopic was preferred in 35, transperitoneal in 6. In 4, Grade (G) I, 22 GII, 12 GIII were detected. In 6, previous ESWL was applied.