

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 ureterorenoscopic 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.

Ureter was incised by cold knife in 5, scissor in 16, j-hook in 3, monopolar-bipolar cut in 17 patients. In 6 patients, double-j stent was inserted while in 1 operation was converted to open. Mean operation time was 124 minutes. Mean amount of drainage was 220 cc. Mean hospitalization time was 4.8 days. In 5 (12.5%) of 7, persistent drainage was detected as a major complication treated via insertion d-j stent. All patients were discharged as a stone free status.

Conclusions: Laparoscopic ureterolithotomy is a feasible and effective procedure especially for stones that could not treat easily with ureteroscopic approach. Increased hospitalization and operation time could be related with difficulties of stone removal while success was achieved in each patient.

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Frequency of urolithiasis in primary gout

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Introduction and Objectives: The prevalence of urolithiasis in primary gout patients has been increased for the past few decades. In earlier studies frequency of primary gout urolithiasis was 20% and now we have data that 37 to 50% patients with gout develop uric acid-related stones. The objective of this study was to assess the frequency and risk factors for urolithiasis in primary gout

Material and Methods: Fifty-five patients with diagnosed primary gout were studied. Urolithiasis was defined as previous history of urolithiasis in clinical records of observed patients or as ultrasonographic findings of nephrolithiasis. Next step was to compare chosen risk factors: patient age, duration of gout, high blood pressure, diabetes and hyperlipidemia between patients with and without urolithiasis.

Results: In observed group we have 50 (90.90%) males, average age of 56.55 (min 22.00, max 83.00, SD 13.06). Duration of gout was 6.23 years in average (min 1.00, max 35.00). We found 23 patients (41.8%) with urolithiasis. Ten of them (18.18%) was diagnosed by clinical history and additional 13 (23.63%) by ultrasonography. In our group 35 (63.6%) patient had hyperlipidemia, 26 (47.3%) were with regularly cured high blood pressure, and 14 (25.5%) were diabetics. After statistic evaluation we did not find statistically significant correlation of presents of urolithiasis in gout patients, and their age, hyperlipidemia, high blood pressure and diabetes but we find statically significant correlation between urolithiasis and duration of gout ($p < 0.001$).

Conclusions: Frequency of urolithiasis in primary gout in our sample was 41.8%, and 23.63% were patients with silent kidney stone diagnosed by ultrasound. Ultrasonography increased the probability of diagnosing urolithiasis and the most important risk factor is duration of gout.

Poster Session 8: Trauma and reconstruction

Saturday, 10 October 2009, 09:40-11:40

Room 2

S115

Use of urinary beta-2 microglobulin (B2MG) as renal injury index

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Introduction and Objectives: Human Beta-2 Microglobulin (B2MG) is a protein filtered by the glomeruli and reabsorbed

by the proximal tubular cells where it is metabolized. B2MG is expressed on nucleated cells, and is found at low levels in the serum and urine of normal individuals and is considered as sensitive means for diagnosing tubular dysfunction. The aim of this study was to elucidate the relationship between urinary levels of B2MG and renal injuries and to correlate them with clinicopathological parameters. Our objective was to point out the value of urinary levels of B2MG as a cost effective, non-invasive diagnostic approach of diagnosis and evaluation of renal injuries.

Material and Methods: Urine samples of 85 patients with renal injuries were collected after 24 h, 2 days and 7 days for measuring B2MG. The control group consisted of 10 health subjects (< 300 ng/ml). Exclusion criteria's were diseases that decrease renal function, such as inflammatory, viral and autoimmune diseases. The patients underwent clinical and laboratory tests and were also subject to image study by U/S and CT. Patients' age ranged from 18 to 70 years (mean age = 42 years). Their diagnoses were reported as follows: 13 (15.3%) had Grade I, 21 (24.7%) had Grade II, 16 (18.8%) Grade III, 8 (9.4%) Grade IV and 12 (14.1%) Grade V. 15 patients (17.7%) with renal injury, microscopic hematuria and negative U/S and CT findings has been concluded in our study. All patients with Grade IV and V underwent nephrectomy due to hemodynamic instability. Relationship between B2MG and Grade of renal injury was evaluated with Kruskal-Wallis and confirmed by the Cochran-Armitage test for trend. Furthermore, we applied multivariate linear mixed effects models with B2MG as outcome, and age as an independent variable.

Results: In the urine sample of 15 patients with negative image study for renal injury, we detected B2MG with median value 524 ng/ml. A statistically significant negative relationship was found between levels of B2MG across the early period after renal injury ($r_s = -0.31$, p -value = 0.004), meaning that when patients go to 7th day, this is followed by a decrease in B2MG. We observed that B2MG was associated with Grade (p -value < 0.001). Patients with Grade IV have 2579.7 ng/ml with 95% CI greater B2MG compared to patients in Grade 0 and subjects with Grade V have a 4956.5 ng/ml with 95% CI greater B2MG compared to patients in Grade 0, meaning that the level of B2MG is increased. We further observed that levels of B2MG of patients with Grade IV-V, who underwent nephrectomy were normalized in 2nd and 7th day postoperatively. No statistically significant association was obtained when correlating B2MG and age.

Conclusions: B2MG constitutes reliable index for renal injury and it can be used when the image study is not available or not diagnostic for renal injury and the suspicion is placed by the existence microscopic or macroscopic hematuria.

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Urethral injury. Can mechanism of injury prejudge partial or total urethral rupture?

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Introduction and Objectives: Urethral injury may be due to a variety of causes. Key point in the management is to diagnose a total or partial rupture. Our aim is to study if the mechanism of injury can prejudge partial or total urethral rupture. Urethral injury may cause complications, short-term (acute urinary retention) or longterm (strictures, incontinence, erectile dysfunction)

Material and Methods: A retrospective study of 83 patients presented with traumatic urethral rupture from January 2005 until June 2008. All patients underwent retrograde urethrography after clinical, laboratory and radiographic