

second-look PCNL and 15 (38%) Shock Wave Lithotripsy. No perioperative complications were seen.

Conclusions: PCNL is safe and effective for treatment of staghorn kidney stones in geriatric patients, however, additional treatment modalities can be needed.

S100

Long term renal function and stone recurrence after percutaneous nephrolithotomy in patients with renal insufficiency

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Introduction and Objectives: We analyzed long-term results after percutaneous nephrolithotomy (PCNL) in patients with impaired renal function (IRF).

Material and Methods: Nineteen (6.3%) of 300 patients who underwent PCNL had serum creatinine values above 1.4 mg/dl before surgery and were considered to have IRF. Success rate of operation, recurrence rate and renal function status were evaluated.

Results: Mean follow-up time was 51.1±10.1 months. Three patients were lost to follow-up, 16 patients completed the study. The results of the operation were stone free in 50%, clinically insignificant residual fragments in 25% and clinically significant residual fragments in 25% of the patients. Mean serum creatinine value was 2.30±0.56 mg/dl before surgery and 2.67±1.41 mg/dl at the end of follow-up (p=0.386). Creatinine values decreased to normal range in six patients (37.5%). Six patients (37.5%) had stable renal function (creatinine: 1.4–4 mg/dl). Creatinine values increased (>4 mg/dl) in four patients (25%) who required renal replacement therapy. Three new patients progressed to end-stage renal failure. These three had insulin dependent Type II diabetes mellitus and one also had solitary kidney and atherosclerosis. Two patients (12.5%) had recurrences, one of these had hypercalciuria and the other had infection stone.

Conclusions: Our results indicate that most patients presenting with kidney-stone disease and renal insufficiency experience improvement or stabilization of renal function after PCNL. Patients with solitary kidney and those with conditions such as diabetes and atherosclerosis might be at greater risk for deterioration of renal function. Patients with metabolic abnormalities and infection stones might be at higher risk for recurrence.

S101

Ultrasound guided percutaneous pneumatic lithotripsy

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Introduction and Objectives: The aim of this article is to introduce our initial experience in ultrasound guided percutaneous lithotripsy

Material and Methods: From september 2008 to june 2009, we performed this procedure on 18 patients with massive renal calculus, who had failed previously combined retrograde intrarenal lithotripsy and ESWL. Our decision to use this access instead of radiological was influenced with lack of conditions on our department for latter. Twelve patients were in standard lumbotomy position and 4 patients were in modified supine position. Before each procedure, we placed ureteral catheter Ch 5 in ipsilateral ureter for arteficial dilatation of pyelocaliceal system and for protective drainage during postoperative care. After introducing puncture needle through dilatated calices, we continued with placement of guidewire, than ballon dilatator (COOK-which were insuflated on 18 mm Hg) or we used telescopic dilatators for making a working channell. After this procedure we introduced Amplatz and finally

nephroscope Ch 28(Olympus). Lithotripsies were performed with pneumatic lithotriptor, using lithovac aspiration and several kind of forcepses.

Results: Average duration of procedures were about 130 minutes. In 16 patients we had complete desintegration and extraction of fragments. In 2 patients we could not reach calices and calculi. There were no need for blood tranfusions or conversion to open procedures. In 2 patients we had intraperitoneal brekthrough of irrigation fluid, which was evacuated by peritoneofix. We left Foley catheter Ch 18 as a nephrostomy tube in all patients. We did not have major early or late complications in other 14 patients.

Conclusions: Ultrasound guided percutaneous lithotripsy is feasible, reproducibile, safe and acceptable for urologist because there is no risk of x-ray adverse effects, but very demanding. Urologist must be patient and skilled in ultrasound percutaneous and endourological procedures.

S102

Percutaneous nephrolithotripsy and shockwave lithotripsy in the treatment of staghorn kidney lithiasis

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Introduction and Objectives: To investigate the efficacy and safety of percutaneous nephrolithotripsy (PCNLT) as monotherapy and in combination with shockwave lithotripsy (SWL) in the treatment of staghorn kidney lithiasis.

Material and Methods: For a 3 year period (July 2003 – July 2006), 513 patients underwent PCNLT, 225 of which were treated for staghorn stones. 142 (63.1%) were treated with PCNLT as monotherapy. In 57 (25.3%) of cases PCNLT was followed by SWL of residual stone fragments. 26 (11.5%) patients underwent so-called sandwich therapy – PCNLT+ESWL+PCNLT. In most cases a rigid 27 Ch nephroscope Olympus (Germany) was used for endoscopic lithotripsy. Flexible nephroscope Olympus (Germany) was used in 15 patients (6.6%) during the first stage of PCNLT and in 12 patients (5.3%) during the second stage. Lithostar Multiline (Siemens, Germany) was used for SWL. SWL was performed with 4000–6000 shock waves with power from 19 kV to 21 kV, after placement of double JJ ureteral stent. This method was used in 83 patients (36.8%), 11 of whom (13.2%) required two sessions of SWL. Of all patients, treated with SWL, 26 had a large number of stone fragments, as well as stones larger than 4 mm in diameter. This necessitated the use of PCNLT for debulking of those fragments through the existing nephrostomy tract and the patients were discharged from the hospital without nephrostomy tube. The patients with ureteral stent inserted prior to SWL were discharged from the hospital with the stent, which was removed after the elimination of most stone fragments. Patients follow-up at the first, third and sixth month included plain abdominal radiography and ultrasonography to demonstrate elimination of stone fragments. The final stone-free status was assessed by plain abdominal film, intravenous urography and ultrasonography.

Results: The age, sex, stone size, presence of positive urine culture and grade of dilation of renal collecting system in the three groups of patients were statistically similar. 86% of patients in the first group, treated with PCNLT as monotherapy were stone free after the procedure. In the second group (PCNLT+SWL) the stone-free rate was 89% and in the third group (PCNLT+ESWL+PCNLT) – 90%. In general the overall success rate was 88.3% and the average postoperative hospital stay – 5.3 days. No complications such as disturbances of electrolyte balance or major bleeding, requiring surgical treatment, were observed. In 4 cases a 250 to 400 ml Er concentrate transfusion was necessary. 5 ureterorenoscopies (2.2%) were performed in