

evaluated with face to face interviews by medical faculty students.

Results: Of the 2468 participants, 274 (11.1%) reported history of urinary stone disease diagnosed by a physician and additionally 52 (2.1%) had at least one episode of colic pain during their lifetimes. The family history of urolithiasis was found in 28.5% of first-degree relatives, compared to 4.4% in the stone-free participants ($P=0.01$). The male: female ratio was 1:1 in participants with urolithiasis. The annual incidence of urolithiasis in 2008 was 2.6%. Comparing the other ethnic groups (Kurdish, Laz, Arabic, Georgian, etc), the population Turkish in origin had statistically significant decreased risk of having urolithiasis disease ($p=0.006$). Though statistically not significant ($p>0.05$), urolithiasis showed a trend toward a geographical distribution within the country where south-eastern Anatolia and Aegean regions have higher frequencies compared to Black Sea, central Anatolian and eastern Anatolian regions.

Conclusions: Urinary stone disease is a severe problem in Turkey with high prevalence and incidence rates which also significantly differ between ethnic groups. Moreover, current findings demonstrate a shift in the prevalence by gender of urolithiasis in the population.

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The effect of metabolic syndrome components on urolithiasis: An epidemiological study

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Introduction and Objectives: Components of metabolic syndrome, such as obesity, hypertension, and diabetes, are thought to be associated with urolithiasis, but limited published large-scale study has examined the association between metabolic syndrome and urolithiasis. We evaluated the relation between metabolic syndrome components and urolithiasis in a nationwide survey.

Material and Methods: A representative sample of 2468 persons aged between 18–70 years in 33 provinces of Turkey was enrolled in the cross-sectional study conducted with a professional investigation company. Participants were evaluated with face to face interviews by medical faculty students. Participants with urolithiasis history (Group 1) were compared participants without urolithiasis history (Group 2) in terms of hypertension, diabetes, body-mass index (BMI), waist size and trouser size using chi-square and odds ratio tests.

Results: Of the 2468 participants, 274 (11.1%) reported history of urinary stone disease diagnosed by a physician. The percentage of hypertension in participants with urolithiasis was significantly higher than participants without urolithiasis (16.9% & 34.3%, $p:0.000$, OR:3.0). In group 1, 14.2% and in group 2, 9% of participants had diabetes ($p:0.001$, OR: 1.83). The mean BMI was 27.2 and 25.2, respectively ($p:0.01$). Participants with a BMI >30 had a 2.2 times fold increased risk of having urolithiasis. Moreover, mean waist size was significantly greater in participants with urolithiasis ($p:0.000$). Those with waist size >100 cm had a 1.87 times fold increased risk of having urolithiasis. The mean trouser size was also significantly bigger in stone formers ($p:0.003$).

Conclusions: Metabolic syndrome components are effective factors that play role on the development of urolithiasis.

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Effect of the stone and patient related parameters on time duration of percutaneous nephrolithotomy operation and the length of hospitalization: Analysis of 1466 patients

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Introduction and Objectives: To evaluation effect of the stone and patient related parameters on the duration of PNL and length of hospitalization (LOH).

Material and Methods: During 7 years period, the records of 1466 patients with renal calculi who underwent PNL were reviewed retrospectively. According to median, duration of operation time (median=60 min) and LOH (median=2 days) were categorized to two groups. Multivariate binary logistic regression analysis was used for detecting the effects of independent variables included patient age, sex, body mass index(BMI), history of SWL or open surgery, stone size and opacity, presence of hydronephrosis, localization and number of access, per-operative and post-operative findings and complications on the duration of PNL and LOH.

Results: The mean operation time and LOH were 62.6 ± 25.4 (10–210) min and 2.9 ± 1.6 (1–21) days respectively. Overall success was achieved in 84.7%. According to outcome of multivariate analysis, stone size ($p<0.0001$, OR=1.97), presence of hydronephrosis ($p=0.014$, OR=2.1), bleeding blurring the vision during operation ($p<0.0001$, OR=1.7) and number of access ($p<0.0001$, OR=1.4) are significant independent predictors on the duration of operation during PNL. On the other hand, BMI ($p=0.008$, OR=0.82), stone size ($p=0.01$, OR=1.2), number of access ($p<0.0001$, OR=1.7) and postoperative fever or sepsis ($p=0.001$, OR=4.5) are factors influencing LOH.

Conclusions: Stone size and access number significantly affect the both operation time and LOH. However, presence of hydronephrosis and bleeding blurring the vision influence the operation time. Present data demonstrated statistical relationship between BMI and LOH. Post-operative fever and sepsis after PNL significantly increase LOH.

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Percutaneous nephrolithotomy for staghorn kidney stones in geriatric patients

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Introduction and Objectives: To investigate the effect of percutaneous nephrolithotomy (PCNL) in the treatment of staghorn renal stones in geriatric patients.

Material and Methods: Between 2002–2009, 40 geriatric patients (22 male, 18 female), whose ages were above 65 years, underwent 42 PCNL operations for the treatment of staghorn kidney stones. The stone area, operation time, delta hemoglobin (Δ Hb: calculated by subtracting postoperative Hb level from preoperative Hb level), stone clearance rates and additional treatment rates were investigated.

Results: The mean age of the patients was 69 ± 3.5 years. Twenty eight (70%) of the patients had at least one of the comorbide diseases including diabetes mellitus, hypertension, atherosclerotic coronary artery disease and five (11.9%) had initial ipsilateral renal surgery in history. The mean stone area was 1668.5 ± 629.4 mm². Two patients underwent bilateral PCNL. The mean operation time was 137.5 ± 33.9 minutes and mean hospitalization time was 3.9 ± 2.3 days. Mean Δ Hb was 1.49 ± 1.29 gr/dl. At the end of the operations, stone clearance rates were stone free in 12 (28.6%), clinically insignificant residue fragments in 8 (19%), clinically significant residue fragments in 22 (52.4%) renal units. Thus, 18 (45%) patients requested an additional treatment after PCNL; 3 (7%)

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.

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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.

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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 dilators 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.

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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