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Abstract Book
STEREOTACTIC STENTS COMPROMISE STONE CLEARANCE FOLLOWING SWL FOR URETERIC STONES: RESULTS OF A MATCHED-PAIR ANALYSIS

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Introduction & Objectives: To identify the effect of the presence of a ureteric stent on the outcome of SWL, by comparing patients with ureteric stones with matched-pair analysis.

Material & Methods: Patients undergoing SWL with the Technomed Sonolith Vision Lithotripter (Technomed Medical Systems, Vaulx-en-Velin, France) were identified from our prospectively maintained database. Only adult patients with a solitary, radiopaque, previously untreated ureteric stone were considered for further analysis. A follow-up of at least 3 months with a KUB film was used to identify residual fragments. Patients were exactly matched for gender, side, location in the ureter and size (in two dimensions, with an approximation of ± 2 mm). If both diameters could not be matched exactly, the size was extended to ± 1 mm and the height to ± 2 mm of both diameters. An effort was finally made to match patients by age. The treatment outcome in terms of stone-free (SF) rates was assessed and compared using McNemar's test.

Results: A total of 45 patients with a ureteric stent in place during SWL were found. The only patient that could not be adequately matched was a 40-year-old man with an 8 x 3 mm stone in the upper ureter. The majority were located in the upper ureter (77.3%), mean stone size was 8.5 and 8.6 mm, respectively. No statistical differences were found between the two groups for age and size of stones (p=0.41 and p=0.86, Student's t-test). In 12 pairs only patients without a stent were SF. compared to 2 pairs where the patient with a stent was SF. Using the McNemar's test the OR was 6.0 (95% CI 1.3-55.2) and the difference between the groups was statistically significant (p=0.016).

Conclusions: These results clearly demonstrate that the presence of a stent leads to a worse outcome following SWL for ureteric stones. Ureteric stents should still be used in cases of obstruction, when there is a risk of sepsis, and in patients with intolerable pain or deteriorating renal function. However, their use in patients offered SF for ureteric stones should be considered with caution.

PAIN DURING ESWL - ARE THERE ANY PARAMETERS TO PREDICT THE QUANTITY OF ANALGESIC REQUIREMENT?

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Introduction & Objectives: Extracorporeal shockwave lithotripsy is a non invasive, but painful procedure. Sufficient analgesia is recommended, to avoid pain induced movements and excessive respiratory excursions. The quantity of required anaesthesia is fluctuating over a wide range. In our retrospective analysis of 1000 ESWL-treatments, we tried to identify parameters, that allow a prediction of analgetic need.

Material & Methods: From 01/2006 to 10/2007, 1 000 ESWL-treatments have been performed with two electromagnetic shockwave systems (SIEMENS Multiline® SIEMENS Lithostop®) in on-demand i.v. analgesia with alfentanil (Rapifen®) after a load dose of 0.5 - 1.0 mg alfentanil. All relevant data, such as patient- and stone-characteristics, shockwave data and amount of analgesia have been recorded in an MS Access database for analysis. Subjective pain level was assessed with visual analogue scale VAS (0-10).

Results: 1 000 patients with an age from 20 to 85 years received 0.5 - 4.0 mg alfentanil (average: 1.7 mg) for analgesia. The subjective pain level was reported with 3.1 on average. The analgetic demand was higher in lithotripter with big focal spot and small aperture (SIEMENS Lithostop®) compared to SIEMENS Multiline® with small focal area and bigger aperture (2.2 mg alfentanil vs. 1.5 mg). Stone localization was a further parameter: stone localization close to bone structures (upper caliceal stone, lower ureteral stone) was associated with a higher demand for analgesia. Older patients had less need for analgesia than younger patients (p < 0.05: av. 1.9 mg alfentanil versus > 50 years: av. 1.5 mg alfentanil). Stratified to ethnic groups, western European, Nordic and Asian patients had an analgetic demand, that is below the average (av.: 1.5 mg alfentanil). Patients from Turkey and Mediterranean countries (Italy, Spain, Greece) required higher analgetic dosage (av.: 2.1 mg alfentanil). In these ethnic subgroups, patients sex is a factor for different analgetic need.

Conclusions: The need for analgesia for ESWL-treatment is related to many factors. Characteristics of used lithotripsy device, stone localization and patient data allow an estimation of analgetic requirement. Lithotripers with small aperture stones in the upper pole and lower ureter, young age and origin from Mediterranean countries are indicators for a higher consumption of analgetic drugs.

OVARIAN APOPTOSIS AFTER SHOCK WAVE LITHOTRIPSY FOR COMPLEX DISTAL URETERAL STONES

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Introduction & Objectives: To identify any apoptotic effect of shock wave lithotripsy (SWL) for distal ureteral stones on ovarian tissue.

Material & Methods: Twenty-one female New Zealand white rabbits divided into three groups of seven rabbits each: I (control), II and III (SWL). They were followed at weekly intervals and sacrificed 14 and 28 days after SWL, respectively. The left distal segment of the anesthetized (keta mine HCl, 20 mg/kg) animals in groups II and III were exposed to 1500 shockwaves at 17 kV. The passage of the ureteral segments was achieved following contrast medium (Iohexol) or i.m injection. The animals were sacrificed on day 14 or 28 after treatment and the ovaries were removed. The follicle number with apoptotic cells in atrophic ovaries was compared to control group. Apoptotic changes in atrophic ovaries were determined by terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL) method.

Results: No increased apoptosis was detected in all groups. The number of TUNEL positive follicle in group I, II and III were 9.3 ± 2.2, 9.6 ± 2.8 and 8.7 ± 2.9, respectively. There were no statistically significant differences among all groups regarding the number of TUNEL positive follicles (p = 0.647). Also no histomorphological change other than apoptosis was detected in study groups.

Conclusions: SWL treatment for distal ureteral stones does not induce apoptotic changes on ovarian tissue, so it is a safe treatment option for women of reproductive ages.