Extracorporeal Shockwave Lithotripsy: Another Confirmation of Its Efficiency

Introduction and Objective: Extracorporeal shockwave lithotripsy (ESWL) represents a well-established and effective treatment of urinary stones in adult patients. Even after 40 years of experience with ESWL ignorance about indication varieties and side effect of ESWL still causes unnecessary stone surgery or unnecessary endourological procedures. Our study was designed to assess the indications varieties of ESWL, the technique, complications and long term results of ESWL. Follow-up series at 5, 10 and 15-years were analyzed.
Materials and Methods: Between 1991 and 2011, 10743 patients (the youngest 3 years, the oldest 96 years) were treated by ESWL for urinary stones in our center - 24036 ESWL procedures were performed. Investigational protocol: reno-vesical ultrasound, IVP exam, bioumoral exams: urea, creatinine, hemoleucogram, coagulogram, urinalysis, uroculture. In 6655 cases the calculus was located in the renal pelvis, in 1395 cases a single calculus was located in the calyx, 858 had multiple caliceal lithiasis, 629 cases had pyelo-caliceal lithiasis, in 966 cases the calculus advanced in the lumbar ureter, 177 had stag horn lithiasis and 54 patients had distal ureteral lithiasis. Stone size was in 27% < 10 mm, in 53% 11-20 mm, 16% 21-30 mm and in 4% larger than 30 mm. General intravenous anesthesia has been used in 5488 cases.
Results: The overall “stone free” rate was 91% (9768 patients). CIRF (Clinical Insignificant Residual Fragments) were noticed in 3,5% of cases with multiple operated lithiasis and residual hydronephrosis. In 590 cases (5,5%) the ESWL was inefficient and the patients underwent surgery. For the follow-up we analyzed renal function (BUN and creatinine level, renal ultrasound, IVP or renal scintigraphy), blood pressure and skeletal radiography. No late complications (renal failure, skeletal deformation) were noticed during a mean follow-up period of 48 months.
Conclusions: ESWL is effective in patients with urinary stones - “stone-free” rate was 91%. It can be safely performed without long-term side effects.