

statistics and linear regression tested the association between clinical predictors and radiation exposure.

Results: Median (IQR) age and body mass index (BMI) were 14 (13–16) years and 20.1 (17.9–21.6) kg/m². Five (2.1%) patients developed clinical recurrence and 3 (1.2%) developed complications. Median fluoroscopy time and DAP were 38.5 (e27.7–54.0) sec and 89.6 (62.5–143.9) cGy/cm². Effective dose was 0.25 (0.17–0.42) mSv. Fluoroscopy time was higher in patients with collateral veins [41 (26–49) vs. 36 (31–61) sec, $p = 0.02$]. Median amount of sclerosing agent (SA) used was 3 (3–4) ml. DAP was higher when SA > 3 ml were used [101.4 (65–183) vs. 80.5 (59–119) cGy/cm²; $p < 0.01$]. At Spearman's correlation, patient's BMI ($\rho = 0.38$, $p < 0.001$) and operative time ($\rho = 0.27$, $p < 0.01$) positively correlated with DAP. At univariable linear regression, age, BMI, operative time and SA > 3 ml were associated with DAP (all $p < 0.01$). At multivariable linear regression, only BMI and operative time emerged as predictors of DAP, after accounting for age and SA > 3 ml.

Conclusions: Tauber procedure is safe and associated with low effective dose. Operative time and patient's BMI independently predict higher radiation dose. Effort to reduce radiation exposure in young males should be made.

Multiple laser puncture in the endoscopic treatment of ureterocele: the first and/or final therapeutic choice? long term results

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Introduction and aim of the study: Management options for “ideal” ureterocele treatment remain controversial; in recent years the surgical approach to ureterocele had evolved from complex major surgery to minimally invasive endoscopic treatment, namely endoscopic puncture. Currently the use of early endoscopic puncture of ureterocele as primary procedure demonstrated high rate of success, efficacy, safety and long term durability in many publications.

The purpose of the study is to evaluate retrospectively all patients who underwent endoscopic treatment of ureterocele with multiple laser puncture (“watering can puncture” WCP) over the last 15 years of personal experience.

Material and methods: We reviewed retrospectively a total of 28 consecutive endoscopic ureterocele procedures performed at our institution from 1996 to 2020. One pediatric urologist (G.C.) performed all procedure. The preoperative data collected included age at presentation, prenatal diagnosis, mode of presentation, ureterocele location (17 ectopic UTC; 11 orthotopic UTC), preoperative work-up, weight and age at the procedure. A Ho-YAG laser was used to puncture the ureterocele with 200–365 millimicron laser fibers, passed through a 8F–9.5F cystoscope. A group of 16\25 consecutive case series (64%) were treated with WCP technique (9 ectopic UTC; 7 orthotopic UTC); laser fiber at a setting of 6–8 Hz and 0.6–0.8 J was used to make 10–20 puncture hole. The bladder catheter was removed 24 hours after endoscopic treatment.

Results: Of 28 patients who underwent endoscopic ureterocele decompression, 16 were treated with WCP procedure and 12 patients underwent either incision or puncture. Both groups had ultrasound evidence of decompression ureterocele and significant improvement in hydronephrosis of upper urinary tract with one treatment (15\16 pts). The WCP group had an effective decreased rate of de novo vesico-ureteral reflux (VUR) (25% vs 62%); no VUR has occurred in the last 8 consecutive case). In the WCP group the average grade of de novo VUR was lower.

Conclusions: Our study shows that endoscopic watering can procedure successfully decompresses the obstructing ureterocele and its associated hydronephrosis. This technique also results in a decreased

incidence of de novo VUR. For many patients in our experience this endoscopic minimally invasive procedure maybe the first and definitive long term treatment.

PCNL as first-line treatment for pediatric kidney stones: a single-centre 10-year experience

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Introduction and aim of the study: Kidney stones have become a common disease in children from both low and high-income countries. The introduction of miniaturised devices increased the feasibility of percutaneous nephrolithotomy (PCNL). The aim of the study was to describe our ten-year experience in the use of PCNL as a primary treatment for pediatric symptomatic kidney stones.

Materials and methods: The study was retrospective and observational. All the children treated for symptomatic kidney stones at our University- Hospital from January 2011 until December 2021 were included. The population was split into two samples according to the choice of the first approach for the treatment of kidney stones. Group A included the patients that underwent PCNL. Group B included the patient that underwent ureteroscopy (URS). The following outcomes were compared: four-week stone-free rate (SFR), the rate of procedures per patient, the rate of failure that required ureteral stenting and the rate of complications.

Results: Thirty patients were included, for a total of 35 kidney units. Twenty-two of them (73%) were males. The median age at first procedure was 10 (IQR 6.3–13) years. Forty-nine lithotomies were performed. Twenty-six of them (53%) were mini-PCNL. Group A collected 19 patients (63%), while Group B collected 11 patients (37%). The age at intervention (median 10 yrs, IQR 5.5–11 yrs vs. 9 yrs IQR 7–13 yrs; $p = 0.984$), the maximum stone size (median 16 mm, IQR 14–19 mm vs. 11 mm, IQR 10–16 mm; $p = 0.143$) and the lower-pole calyx involvement (63% vs 64%; $p = 1.000$) were similar. Six patients (32%) in Group A had staghorn stones, while only two (18%) in Group B ($p = 0.672$). Bilateral stone localization was higher in Group B (5.2% vs. 36% $p = 0.047$). Group A presented a higher SFR (68% vs. 18% $p = 0.021$) and a lower number of procedures (median 1, IQR 1–2 vs 3 IQR 3–5; $p = 0.002$). The first URS attempt failed in five patients (45%) and three of them underwent PCNL reaching a 100% SFR after a single procedure. No urinary leak, blood transfusion or other major complications were reported in our series. Two episodes (7.7%) of febrile urinary tract infections (UTI) were reported after PCNL and four febrile UTIs (17%) after URS ($p = 0.400$).

Interpretation of results: Mini-PCNL presented a higher rate of success as a single approach, especially in younger children with staghorn stones. Furthermore, the choice of mini-PCNL might reduce the number of endoscopic procedures. The choice of mini-PCNL in case of failed URS for the patients with non-compliant ureter should be considered. The technological innovations in pediatric urology together with the cooperation with skilled endoscopist, such as adult urologists, might have helped in reducing the rate of complications.

Conclusions: Mini-PCNL might be considered the first approach for the treatment of pediatric symptomatic kidney stones. URS lithotomy might be reserved in older children with recurrent bilateral stones.