

Case Report

Complex Congenital Urinary Tract Malformation with Secondary Urinary Stone Disease – Therapeutic Multimodal Solution

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ABSTRACT Objective. This presentation emphasizes the continuous development of surgical treatment applied for urological diseases by solving a complex case of urinary stone disease developed on a congenital abnormal urinary tract (bilateral ureterocele and right pelviureteral duplication) through combined therapeutic measures which would have been treated by open surgery not long ago. **Case presentation.** This is a description of the retrograde ureteroscopy made under spinal anesthesia using Ho:YAG laser lithotripsy, extraction of resulting stone fragments, ureterocele incision with the introduction of a left ureteral catheter at the end of the procedure. **Results.** Postoperative recovery was short and simple and followed by a session of extracorporeal shock wave lithotripsy for the remaining right kidney stones as well as endoscopic removal of the left double J catheter at 30 days. **Conclusions.** Stone kidney treatment is continuously changing along with the technological development. Use of minimally invasive (a singular surgical session of Ho:YAG - retrograde ureteroscopy) as well as noninvasive techniques (ESWL) allowed complete treatment of this complex case and decreased associated morbidity and hospital stay.

KEY WORDS urinary stone disease, ureteroscopy, Ho:YAG laser, ESWL

Introduction

Urinary stone disease has a 0.1 % incidence in developed countries ⁽¹⁾. The surgical treatment of this disease evolved along with the technological progress. The principles of surgical treatment are based on the use of minimally invasive procedures and decreased morbidity (lower pre- and postoperative patient discomfort) ⁽²⁾.

Case presentation

Patient N.S. 65 years old, with no significant medical history is admitted in the urology department for bilateral lumbar pains, nausea, vomiting, frequency, gross haematuria, altered general state; previous outpatient ultrasound showed bilateral pelviureteral dilatations and right kidney stone disease. Patient's history includes one natural delivery, multiple urinary tract infections that started approximately two years ago and neglected effort-induced gross haematuria. General physical exam confirms gross haematuria and bilateral lumbar pain. The complete blood scan and tests made at admission were within normal limits, except urinalysis which showed the presence of

haematuria and microscopic uric acid crystals. The ultrasound examination shows right ureteral hydronephrosis and right kidney stones confirmed by Kidney-Ureter-Bladder X-ray (KUB) (Fig.1).



Fig.1. KUB

Intravenous pyelogram (IVP) confirms the patient's complex diagnosis revealing complete

pelviureteral duplication with right upper pole hydronephrosis, right upper kidney stone, bilateral ureterocele, multiple right pelvic ureteral stones (on the right upper pole ureter) and large stone within the left ureterocele. (Fig. 2).



Fig. 2. Intravenous pyelogram (IVP)

Bilateral retrograde ureteroscopy under spinal anesthesia is performed with Ho:YAG lithotripsy of the left ureterocele stone and the introduction of a “double J” catheter after the removal of remaining stone fragments. Right ureterocele incision was followed by left retrograde ureteroscopy that identified 65 cubic-shaped stones measuring 3 to 5 mm that were extracted with the stone grasper. (Fig. 3 a, b, c, d).

Patient’s recovery was simple and short. Patient was discharged at 2 days with the recommendation for subsequent ESWL for the remaining right kidney stones. The outpatient procedure was performed at 14 days using a STORZ Modulith SLK electromagnetic lithotripter with no anesthesia.

Discussions

Currently approximately 90% of pelviureteral stones are treated by ESWL, 8 - 10% by endoscopic maneuvers (PNL and retrograde ureteroscopy) leaving only 1 – 2% to open surgery⁽²⁾. The continuous development and technical discoveries led to new improved treatments for urological diseases and the need to learn new medical techniques, radically changing and increasing the number of therapeutic options. In our department latest technology is available, offering significant advantages in solving complex cases through minimally invasive procedures. The use of Ho:YAG Laser for urinary stone

fragmentation allowed complete treatment of this complex case, avoiding open surgery.

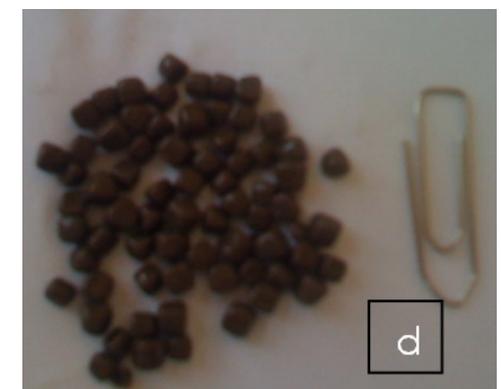
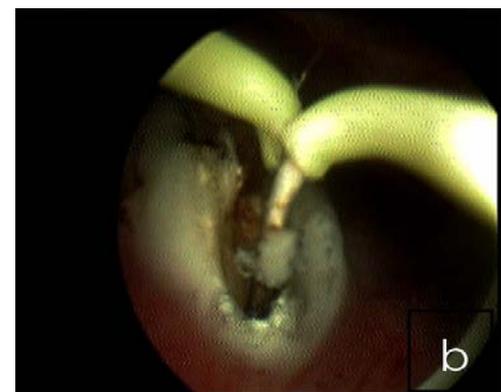
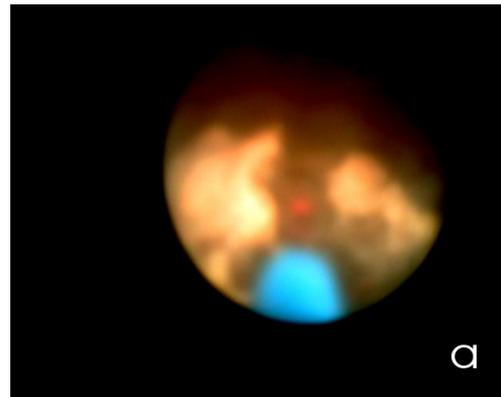


Fig.3. Intraoperative images (a. Ho:YAG lithotripsy for left pelvic ureteral stone, b. electric incision of the right ureterocele, c. extraction of right pelvic stones, d. the extracted stones – gross image)



Fig. 4. Early postoperative KUB (insera Figura 4)

Conclusions

Stone kidney treatment is continuously changing along with the technological development. Use of minimally invasive (a singular surgical session of Ho:YAG - retrograde ureteroscopy) as well as noninvasive techniques (ESWL) allowed complete treatment of this complex case and decreased associated morbidity and hospital stay.

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