

## CASE REPORT

# COMBINED URETHROLITHOTOMY WITH VESICOLITHOTOMY IN AN 18-MONTHS OLD BOY

**Badar Murtaza, Naser Ali Khan, Asif Nadeem, Saira Saeed**

Combined Military Hospital, Bahawalnagar Cantonment, Pakistan

We present a case of 18 months old male child who reported with acute urinary retention. He had a urethral calculus along with a vesical calculus. He was subjected to combined external urethrotomy and open vesicolithotomy in one sitting. The patient made a smooth post operative recovery and was followed up for 6 months.

**Keywords:** Urethral, vesical calculus, urethrolithotomy, vesicolithotomy

## INTRODUCTION

The urinary calculi are relatively uncommon in children as compared to the adults.<sup>1</sup> Finding concomitant stones in kidney and urinary bladder, kidney and urethra or urinary bladder and urethra is quite rare in children and may create management problems especially in minor children. A variety of surgical procedures have been considered for the urinary bladder and urethral stones, but in order to treat them in a small boy, may limit us to a few options only.

The main debate of open and minimally invasive surgery will always tilt in favour of the latter, but provision of such advanced facilities and trained staff is a limitation in majority of the areas of our under developed country. Basic procedures of external urethrotomy combined with open vesicolithotomy in our patient, 18 months old baby boy, seemed to be a practical option in the hands of a general surgeon working in a small peripheral hospital.

## CASE REPORT

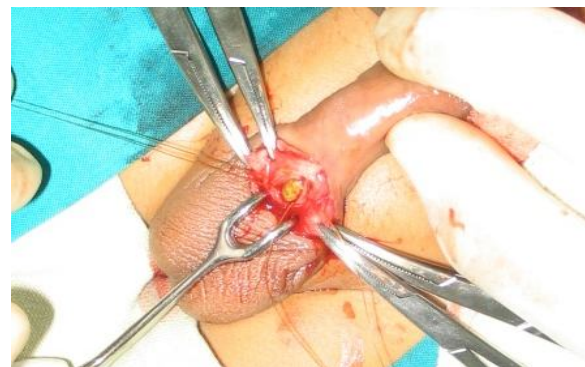
An 18 months old male child presented to the emergency with acute urinary retention. He had not passed urine overnight and reached the hospital in the morning. A 10 Fr Foley's catheter was passed in the emergency and the child was later referred to the surgical department. On detailed examination a hard stone was palpable in the penile urethra. The Foley's catheter had been negotiated along the side of the stone. Plain X-ray showed one stone impacted in the urethra and another one lying in the urinary bladder (Figure-1). Ultrasound revealed normal looking kidneys with no additional pathology except the two calculi. Blood complete picture and serum urea/creatinin were within normal limits. A few pus cells were seen in the urinalysis.

Accordingly consent was taken from the parents and surgery was planned. Under GA, first the urethral calculus was approached and the Foley's catheter was removed. After gentle manipulation, urethral dilator was used to push the stone, but it did not move from its position. A 2 cm incision was made over the stone held between the index finger and thumb of

the left hand. Haemostasis was secured and urethra was opened longitudinally. The stone was retrieved and measured 7 mm in size (Figure-2). Another 10 Fr Foley's catheter was passed into the urinary bladder. Urethra was repaired with interrupted sutures of vicryl 5/0, followed by periurethral tissue layer which was closed in two layers with interrupted sutures using vicryl 5/0. The skin was closed. Later urinary bladder was opened and a 11 mm stone was removed. Urinary bladder was repaired along with a retropubic drain. The post operative recovery was smooth. The drain was removed after 48 hours and the Foley's catheter was removed on the sixth post operative day. The wounds healed satisfactorily and the child was followed up for 6 months and he remained asymptomatic (Figure-3).



**Figure-1: One stone impacted in the urethra and the other present in the urinary bladder**



**Figure-2: Stone being removed from the urethra by open urethrotomy**



**Figure-3: Well healed wounds after 10 days**

## DISCUSSION

In developed countries, the urinary calculi in children represent 1–5% of all urinary calculi and the urinary bladder calculi are very rare.<sup>1</sup> On the other hand, in the developing countries, the urinary calculi in children are about 30% of all urinary calculi and here the endemic bladder calculus is still a common disease in children.<sup>2</sup> The decline in bladder calculi in United States and Western Europe has been because of improved diet, nutrition and infection control.

Bladder stones have remained a matter of great interest in the past. The oldest bladder stone was discovered in 4800 BC and the first literary references to bladder stones date back to the time of Hippocrates. More than 23 centuries ago, Hippocrates warned that, “To cut through the bladder is lethal”, and part of the Hippocratic oath includes, “I will not cut for stone, even for the patients in whom the disease is manifest; I will leave this operation to be performed by practitioners”. With this background of our history, the science has made progressive advancements in all the fields, especially in the urinary calculus disease. The trend and concept of open surgical procedures are now being replaced by minimally invasive surgery. But still there are situations where open procedures remain the gold standard all the time. Urolithiasis in children is an ever growing field. The male children are predominantly affected than the female. The stones formed in children, are associated with a variety of factors, including identifiable metabolic and genetic disorders, geographic and socioeconomic boundaries and exposure to medication and other environmental influences.<sup>2</sup> The endemic bladder stones are common in parts of Asia and some areas of Africa. The oedema and inflammatory changes from the vesical calculus and infection can cause reflux in children. The reflux is eradicated by simple removal of stone. The surgical treatment of bladder stones in children ranges from open vesicolithotomy<sup>3</sup> to percutaneous cystolithotripsy (PCCL). Open surgery remains the main treatment of

bladder calculus in children.<sup>3,4</sup> It has the inherent problems of a long scar, prolonged catheterization, extended hospitalization and risk of infection.<sup>5</sup> Catheterless and drainless open suprapubic cystolithotomy in children is also being considered as a safe option with lesser morbidity.<sup>6</sup> In children because of the size limitation secondary to the small urethra and concerns about iatrogenic urethral stricture, transurethral endoscopic removal may be more difficult and fraught with danger. With advancements in endourological instrumentation, percutaneous cystolithotripsy (PCCL) is established as a safe and effective method for treating endemic bladder stones in children.<sup>7-9</sup> Stones even up to 5 cm in size have been removed successfully in children by this method.<sup>8</sup> The extracorporeal shock wave lithotripsy (ESWL) has limitations in the urinary tract calculi in children.

Urethral calculus is a rare form of urolithiasis with an incidence lower than 0.3%. In children nearly all occur in males with a few in females. The majority of stones impacted in urethra require open urethrotomy. It is especially indicated for stones lying in the penile urethra between bulbous urethra and fossa navicularis. Even recommendations have been made that while repairing, the urethra should not be closed and its edges should fall together and heal naturally. However in our case we repaired the urethra and periurethral tissue separately. Urethral calculi, especially ones lying in the posterior urethra can be managed by retrograde manipulation into the bladder. Transurethral Holmium laser ablation is also effective in impacted urethral stones. Stones at the external meatus or fossa navicularis can be milked out as well.

Considering the diverse options of treatment of vesical/ urethral stones, the open surgery is still well recognized but the developing endourology seems to be safer and effective in children. It appears that the indications for urological treatment in children emulate those of adults.<sup>10</sup> However in our case we resorted to open treatment due to the fact that we were working in a peripheral hospital and lacking advanced paediatric endourological facilities.

## REFERENCES

1. Salah MA, Holman E, Toth C. Percutaneous suprapubic cystolithotripsy for pediatric bladder stones in a developing country. *Eur Urol* 2001;39:466–70.
2. Menon M, Resnick MI. Urinary lithiasis: etiology, diagnosis and medical treatment. In: Walsh PC, Retik AB, Vaughan ED Jr, et al, editors. *Campbell's urology*, 8<sup>th</sup> ed. Philadelphia: WB Saunders; 2002. p. 3289–92.
3. Mahran MR, Dawaba MS. Cystolitholapaxy versus cystolithotomy in children. *J Endourol* 2000;14(5):423–5.
4. Papatsoris AG, Varkarakis I, Dellis A, Deliveliotis C. Bladder lithiasis: from open surgery to lithotripsy. *Urol Research* 2006;34(3):163–7.
5. Maheshwari PN, Oswal AT, Bansal M. Percutaneous cystolithotomy for vesical calculi: a better approach. *Tech Urol* 1999;5:40–2.
6. Rattan KN, Bhatia V, Ratan SK, Sharma M, Rohilla S. Catheterless and drainless open suprapubic cystolithotomy

- in children: a safe procedure. *Pediatr Surg Int* 2006;22(3):255–8.
7. Salah MA, Holman E, Khan AM, Toth C. Percutaneous cystolithotomy for pediatric endemic bladder stone: experience with 155 cases from two developing countries. *J Pediatr Surg* 2005;40(10):1628–31.
  8. Ahmadnia H, Rostami MY, Yarmohammadi AA, Parizadeh SMJ, Esmaili M, Movarekh M. Calculi in children: 5 years experience. *Urol J* 2006;3(1):20–2.
  9. Salah MA, Holman E, Toth C. Percutaneous suprapubic cystolithotripsy for pediatric bladder stones in a developing country. *Eur Urol* 2001;39(4):466–70.
  10. Sofer M, Keren-Paz G, Beniamyni J, Bar-Yosef Y, Matzkin H, Ben-Chaim J. Pediatric endourology. *Harefuah* 2007;146(3):187–90.
- 

**Address for Correspondence:**

**Dr. Badar Murtaza**, Classified Surgical Specialist, Combined Military Hospital, Bahawalnagar Cantonment, Pakistan.

**Email:** badar\_murtaza@yahoo.com