

Unusual cause of bladder and urethral stones in a child

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DESCRIPTION

A 12-year-old child presented to our hospital with dysuria for the past 4 years. He had a history of difficulty in voiding and multiple episodes of urinary retention needing catheterisation for the past 3 months. Parents denied any history of haematuria, pyuria or graveluria. He had undergone open cystolithotomy at the age of 4 years for bladder stones. Further details are not known of the procedure. He remained well for the next 8 years.

On examination, he was malnourished with body mass index of 12.5 kg/m². He was haemodynamically stable and afebrile. Abdominal examination was unremarkable except for the presence of scar from previous surgery. On blood investigations his haemoglobin was 10.6 g/L, total leucocyte count was 5×10^9 /L and platelet count was 340×10^9 /L. His sodium was 142 mmol/L; calcium was 9.6 mmol/L and potassium 4.4 mmol/L. His kidney function test was normal. Urine routine microscopy showed 8–10 pus cells, urine pH was 6.2 and culture showed growth of *Escherichia coli*. The patient received preoperative intravenous piperacillin tazobactam according to the culture report. Ultrasonography of the abdomen showed multiple echogenic lesions in the prostatic urethra

with a calculus of size 3.5 cm in urinary bladder with mild increase in bladder wall thickness suggestive of cystitis. There was no stone in the kidney. Plain X-ray abdomen and pelvis showed a single radio-opaque shadow in bladder and multiple radio-opaque shadows in the prostatic urethra (figure 1). He underwent percutaneous cystolithotomy and intravesical access obtained using 30F amplatz sheath. Intraoperatively on cystoscopy, multiple calculi were noted in the prostatic urethra attached to a suture and a single

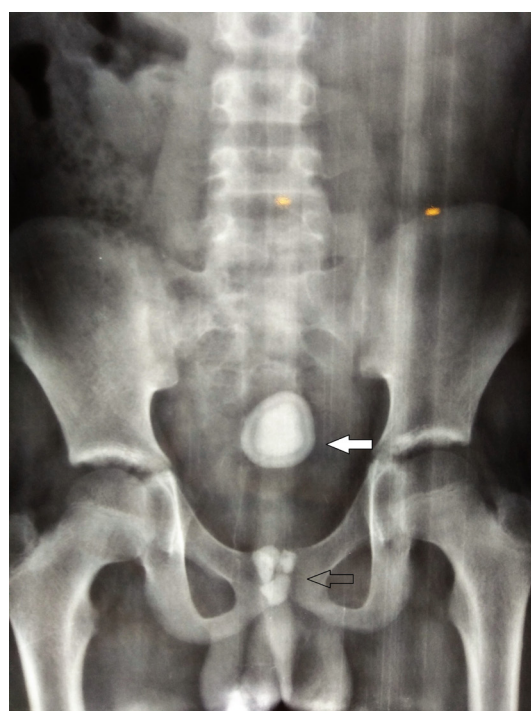


Figure 1 Plain X-ray film showing single bladder stone with 'skin of onion appearance' (solid white arrow) and multiple urethral stones (black arrow).

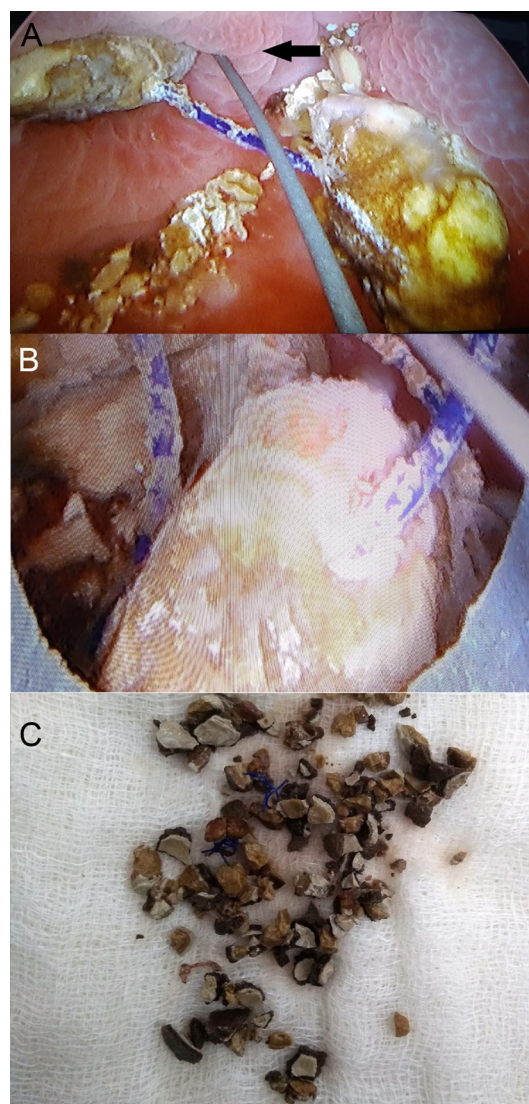


Figure 2 (A) Percutaneous cystoscopy showing multiple stones being pulled out of urethra through bladder neck (solid black arrow) into the bladder. (B) Multiple urethral stones around a suture. (C) Depicts the final amount of stones retrieved after the surgery.



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large calculus was noted in bladder attached to suture (figure 2). There was no stricture in the urethra. Urethral stones were pulled back into the bladder to facilitate lithotripsy. All the stones were fragmented and extracted using 24F nephroscope with help of lithoclast and grasper. Complete clearance of stones was achieved and all the non-absorbable sutures were also removed. A per-urethral and suprapubic catheter was left in situ. Suprapubic catheter was removed on postoperative day 4 and per-urethral catheter on day 6. Postoperative period was uneventful. The patient was discharged on postoperative day 7. Stone analysis revealed ammonium urate and calcium oxalate stones. We plan to do metabolic workup of the patient 4–6 weeks later.

Bladder calculi occur rarely in children, and mostly occur due to migration of stone from kidney or due to various conditions leading to stasis of urine in bladder.¹ There have been previous reports of bladder stones formation around non-absorbable used for *herniorrhaphy*, exstrophy repair, caesarian section, hysterectomy, prostatectomy and migration of meshes used in urinary stress incontinence surgery.² The non-absorbable sutures retrieved from the stone in this case could have been used to close the bladder or anterior abdominal wall. This foreign body in the bladder resulted in the recurrent episodes of dysuria due to urinary tract infection and finally culminating into formation of calculi around it. Clinical diagnosis of bladder stones can be made by plain X-ray film as in this case, but for aetiological diagnosis high index of suspicion and careful history taking is required. Surgery remains the treatment of choice with complete clearance being the goal.

Learning points

- ▶ Primary vesicle calculi are rare in children and most of the times they are associated with some underlying pathologic process.
- ▶ Diagnosis can be made with plain X-ray films showing internal laminations (skin of onion appearance).
- ▶ Use of non-absorbable sutures should be discouraged for bladder repair and when used for other surgeries around bladder utmost care should be taken to avoid erosion into bladder wall.

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