

Urethral Calculus in an Operated Case of Exstrophy Bladder Repair: A Case Report

Dr. Prashant S Patil, Dr. Rahul Gupta, Dr. Paras Kothari, Dr. Abhaya Gupta, Dr. Geeta Kekre, Dr. K Vishesh Dikshit, Dr. Ravi Kamble

Department of Paediatric Surgery, L.T.M.G. Hospital, Sion, Mumbai, Maharashtra, India

*Corresponding author

Dr. Prashant Sadashiv Patil

Email: docprashant2010@gmail.com

Abstract: Formation of bladder stone in repaired case of bladderexstrophy is reported to be around 15%. Formation of stone in urethra is rare accounting for less than 0.3% of cases. We report one such case of penile urethral stone presenting 7 years after bladderexstrophy repair. Stone was removed by urethrotomy and urethroplasty was done over Foley's catheter. Patient developed urethro-cutaneous fistula which was managed conservatively. To our knowledge, development of penile urethral stone after bladder exstrophy repair has not been reported.

Keywords: exstrophybladder, penile, urethra, stone.

INTRODUCTION

Urethral calculi can be classified as either originating within the urethra itself (de novo) as a result of an anatomical abnormality, or from distal stone migration from the bladder or upper urinary tracts[1]. Presence of strictures, previous manipulation, or congenital abnormalities decrease urethral diameter and allow trapping of stones [2]. Urethral calculi originating de novo are most commonly associated with urethral diverticuli, strictures, schistosomiasis, or neurogenic bladder, the latter of which predisposes patients to urinary stasis and infection [3].

Primary urethral stone formation accounts for less than 0.3% of urinary stone, they occur more commonly in males. Urethral stones in general occur more commonly in children than adults, due to higher prevalence of bladder stones in this age group. The most common site of urethral calculi is the posterior urethra, but calculi have been reported along the entire urethra[1].

CASE REPORT

Patient was operated at age of 8 months of life for exstrophy bladder-epispadias complex. Single stage anatomical repair with bladder neck reconstruction was done. Patient lost follow up after that and presented at 7 years of age. He started complaining of poor stream of urine and dribbling of urine since 2 years which gradually progressed. There was no history of fever, burning micturition, and hematuria. Patient was averagely built. There was scar mark of previous operative procedure over lower abdominal wall in suprapubicregion. Patient had continuous dribbling of

urine per urethrally. He had small penis for his age. Right testis was palpable in scrotum, left testis was absent. There was a hard structure palpable in midline in shaft of penis for which patient had no complaints(Fig.1). Its size was 3x2 cm and it was nontender. Infant feeding tube and Foley's catheter could not be negotiated per urethrally.



Fig. 1:A hard structure palpable in midline in shaft of penis

His routine blood investigations, renal profile, serum electrolytes, serum Calcium, serum parathyroid hormone levels were normal. His urine was normal on routine and microscopic examination and no growth was found on culture.

X-ray PBH was suggestive of wide pubic diastasis and a radio-opaque mass in midline in penile shaft suggestive of calculus. (Fig.2)



Fig. 2: X-ray PBH was suggestive of a radio-opaque mass in midline in penile shaft suggestive of calculus. Wide pubic diastasis also seen

Vertical incision made over penile urethra over area of swelling, stone was found in urethra, it was delivered out(Fig.3,4).Fibrotic tissue along with excess urethral mucosa was excised. Urethra was repaired over Foley's catheter using Vicryl 5-0.



Fig. 3: Vertical incision over penile urethra over area of swelling showing stone in urethra



Fig. 4: Urethral stone

Patient was kept cauterized for two weeks post-op days. He was on Tab. Oxybutynine 5 mg BD. On removal of Foley's catheter, he could pass urine with good stream. Patient developed urethra-cutaneous

fistula and complained of leaking of urine from undersurface of penis in 3rd post-op week. It was managed conservatively.

Biochemical analysis of stone was positive for carbonate, calcium, magnesium, oxalate, uric acid. Histopathological evaluation of the excised urethral tissue came out as benign urethral and periurethral tissue. Patient was advised diet as per dietician opinion. The patient is on regular follow-up for past 6 months and is well.

DISCUSSION

Diagnostic evaluations of urethral calculi include imaging, such as X-rays, ultrasound, CT scan. Plain X-rays of the abdomen, pelvis, and entire course of the urethra can be used to identify and measure radio-opaque stones. Direct visualization modalities such as cystourethroscopy used for confirmation. Ultrasonography is a non-invasive diagnostic tool that may be useful for the screening of non-opaque posterior urethral calculi[4] or to demonstrate an echogenic area with acoustic shadowing representing the calculi.

Treatment And Management

Management of urethral stones depends on their size, location, and elucidation of relevant anatomic abnormality which predisposed their formation. Occasionally non-invasive measures are attempted first in patients without urethral obstruction or spiked calculi, including spontaneous expulsion and milking. Instillation of 2% lidocaine jelly in the urethra has been reported to aid spontaneous passage of stones, and has been associated with success rates ranging from 14.8% to 77.7%[5,6]. Posterior urethral calculi have been managed with retrograde manipulation of the stone into the bladder either by external physical manipulation, Foley catheterization, or endoscopic guidance. Subsequently, litholopaxy is achieved using transurethral fragmentation with mechanical, ultrasonic, hydraulic, or laser energy. There is high success rate using this combination of retrograde stone manipulation into the bladder and holmium lithotripsy[7]. Stones within the anterior urethra naturally tend to be treated in a different fashion based on anatomy. For example, a meatotomy can be used for impacted stones within the fossa navicularis. For impacted urethral calculi, as in the present case, successful extraction of urethral calculus using open urethrotomy resulted in successful removal of the stones and ultimate resolution of urinary symptoms.

CONCLUSION

In conclusion, this case is unusual in that a patient presented with urethral calculi that manifested as a palpable mass associated with symptoms of urinary obstruction and infection. Formation of bladder calculi has been described after successful repair of bladder exstrophy, however urethral calculi in operated patient

of bladder exstrophy has not been reported yet. Treatment options are based on stone size, shape, location, and associated urethral anatomical pathology. After surgical removal and correction, our patient had a favorable outcome on follow-up with correction of voiding symptoms and without recurrence of calculi to date.

Post-op complication of U-C fistula managed with conservative treatment.

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