

Giant Urethral Calculi

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Abstract

Case Report

Though urinary calculus is a common problem but urethra is an unusual site to harbour large calculus primarily. We are reporting a case of giant primary urethral stone secondary to formation of a diverticula and urethrocutaneous fistula which was postsurgical complication of incision and drainage of urethral abscess. This 10 year old boy presented with dysuria and urine dribbling from fistula over ventral aspect of mid penile shaft with two hard nodules palpable over middle and base of shaft of penis. Retrograde urethrogram and cystoscopy demonstrated urethral calculus which was removed by open surgery with excision of fistula tract and urethroplasty.

Keywords: urinary calculus, urethra, urine, dysuria.

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INTRODUCTION

Urinary tract stones are a common disease entity in industrialized countries, with nephrolithiasis accounting for the majority of clinical presentations. Urethral stones, however, are rare and account for less than 2% of all urinary tract stones. They most commonly originate from the upper urinary tract or from the bladder, but can form in situ [1-3]. When a stone occludes the urethra, it can cause acute urinary retention, urethral injury and obstructive renal failure [4]. Diagnosing a urethral stone is challenging, as symptoms can be nonspecific, and not every imaging modality used in the evaluation of nephrolithiasis includes the lower genitourinary tract. Failure to diagnose an impacted urethral stone can lead to long term urethral damage, incontinence and renal insufficiency [1-5].

CASE REPORT

History narrated by patient's father. A 10 year old male patient presented to us with complaints of burning micturition, urine dribbling from another site on penis during micturition and passing small frequent urine since 5 years. There was no complain of fever, pain, haematuria, pyuria at time of presentation. These complaints were present when patient was 4 years old and according to his father he had abscess in penile shaft which was drained by a surgeon by incision and drainage and patient was catheterized suprapubically

and per urethrally. The per urethral catheter was accidentally pulled by the patient after around a week's time after which urinary stream was normal for a few months followed by urine leaking from mid penile fistula at incision and drainage site. Gradually patient developed nodularities (2) in penis which progressively increased in size with time. His medical history was otherwise unremarkable and he did not take any medications. On examination, his temperature was 36.3°C, pulse was 74 beats/min, respiratory rate was 18 breaths/min and blood pressure was 100/70 mm Hg. The abdominal examination was unremarkable and there were no hernias or costovertebral angle tenderness. On local examination patient had 2 two hard nodules of size around 1.5 x 1 cm each one at the base of the penis and the other at mid penile shaft that were immobile, nontender, skin overlying first nodule was normal but over second nodule urinary fistula was present with surrounding skin scarred over ventral aspect of mid penis. Rest of the genitalia was normal.

Patient was evaluated by performing urine routine and microscopy and urine culture sensitivities which showed few pus cells. Radiological study was done with plain X ray KUB including external genitalia and showed two overlapping radiopaque shadows in penile region suggestive of urethral calculus with no radiopacities proximally in renal, ureteric or bladder region.



Fig-1: For evaluation of fistula, retrograde urethrogram was performed which showed normal posterior urethra and extravasation of urine from mid penile urethra into a diverticulum



Fig-2: Patient underwent ultrasound KUB region and penis and two urethral calculi were confirmed without any proximal dilation of urinary system

Patient was posted for surgery with all preoperative preparations and with incision over mid raphe over ventral penile skin over the palpable stone, both stones were retrieved from the urethra and the diverticulum in min penile shaft was excised along with the fistula communicating to skin. Urethra was repaired primarily over a 10F catheter and wound was sutured in

two layers taking care of cosmesis. Postoperative period was uneventful and catheter was removed after 7 days and sutures after 10 days. Patient had good stream of urine and no leak from wound. Followup after 1 month showed healthy scar over penis with normal stream of urine and no presenting complaints by patient.



Fig-3: Immediate postoperative



Fig-4: Extracted stones



Fig-5: Postoperative 15 day

DISCUSSION

Urethral stones account for 0.3%-2% of all urinary tract stones[1-3]. More common among males with long tortuous urethra or with congenital or acquired diverticulum. They can form in situ secondary to urethral pathology such as strictures and diverticula (primary stones) [2,6] but more commonly originate from the kidneys or the bladder (secondary stones)[7]. Urethral stones in general, affect children more often than adults, due to the higher prevalence of bladder stones in this age group [5]. Predisposing factors for in situ development of urethral stones include the presence of urethral diverticula, urethral strictures, hypospadias, and meatal stenosis [3,6]. 30% of stones may be found in the anterior urethra [5]. The main pathology for stone formation is urine stasis followed by infection and crystallization then deposition in layers.

The most common presentation of an impacted urethral calculus is acute urinary retention [7,8]. The stones can also produce irritative and obstructive urinary symptoms, as well as severe pain[9]. Associated diverticulum or urethrocutaneous fistula may present as postvoid dribbling. Other complications may be renal failure, urethral damage, incontinence, impotence. Clinical examination may be variable ranging from just mild suprapubic tenderness to palpable stone and complications. Basic investigations like urine analysis, renal function test, ultrasound abdomen and pelvis and plain radiographic film including kidney, ureter and

bladder region including external genital region may be useful for diagnosis, though stone may be missed in routine plain KUB radiograph which does not visualize penile region. These investigations will also help to locate concomitant upper tract stones or anomaly. The investigation for urethral calculus are not well established as this area is mostly studied by urologist clinically and endoscopy. Retrograde urethrography is considered the best initial study for anterior urethral and periurethral imaging in men for the evaluation of urethral injury, stricture, and fistula formation. It is also the best imaging study to detect urethral stones, usually seen as rounded filling defects [8,10]. Voiding cystourethrogram and cross-sectional imaging modalities like CT scan MRI may also be useful.

The urethral stone can be managed endoscopically or percutaneously along with dealing with complications or concomitant upper tract stones.

CONCLUSION

Urethral stones are rare but they may present as primary stones secondary to previous surgeries complication like urethrocutaneous fistula, diverticulum, and stricture and so on. Prompt management is necessary to prevent devastating complications. They can be managed satisfactorily with percutaneous extraction.

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