

# Congenital urethral diverticulum in a young male patient with multiple stones

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## Abstract

urethral stone in adults are rare and usually encountered with urethral stricture or diverticulum. We report a 14 years old male patient who presented with recurrent urinary tract infection and urinary retention due to large urethral calculus impacted in bulbar urethra with urethral diverticulum. On examination a hard swelling of size 5.5 cm x 3.5 cm was palpable at anterior perineum. On retrograde urethrogram a large urethral calculus with bulbar diverticulum was seen. Patient managed by extraction of calculus with bulbar urethral diverticulectomy with primary urethral reconstruction.

**Keywords:** Urethral calculus, urethral diverticula, retrograde urethrogram, urethral diverticulectomy.

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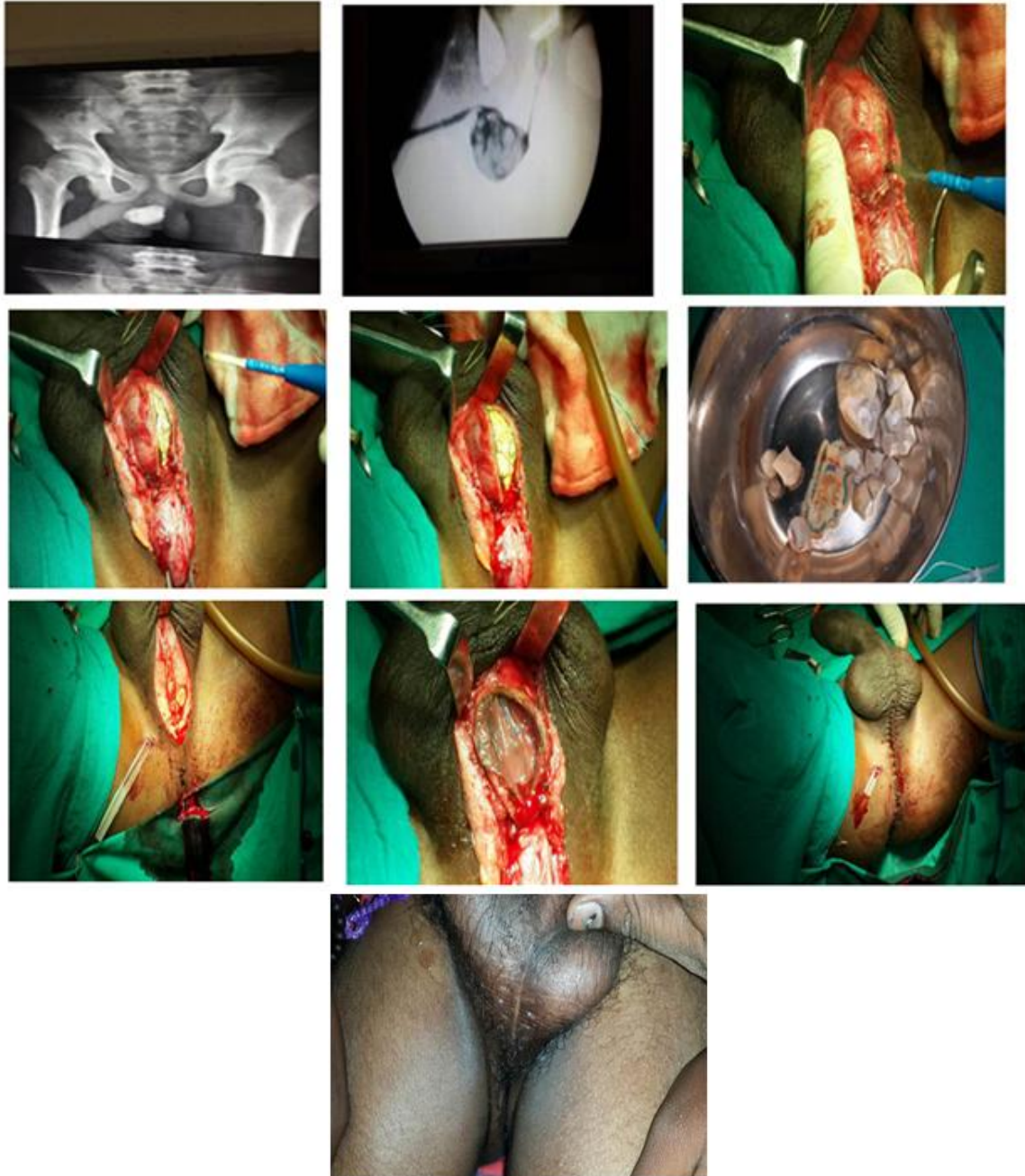
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## INTRODUCTION

Urethral calculi are commonly migratory in nature and are associated with underlying diverticulum or stricture urethra.<sup>1</sup> Urethral calculi represent less than 1% of all urinary stone diseases. Giant urethral calculi are extremely rare<sup>2</sup> and the majority of urethral calculi occur in males and rarely in females.<sup>3</sup> We are reporting a interesting case of a giant urethral calculus impacted in bulbar urethra with urethral diverticulum.

## CASE REPORT

A 14 years old male patient presented with dysuria, frequency, post void dribbling of urine. There was no past history of any operation in perineal urethra or genitalia. On physical examination a hard swelling of size 5.5 cm x 3.5 cm was palpable in perineal (bulbar) urethra. Urinary bladder was grossly distended with dribbling of urine from external urethral meatus was noted. General examination did not reveal any abnormality. Routine blood investigations and kidney function test were normal. For metabolic work up, serum parathormone and serum calcium level were done which were within normal limits. Urine culture did not show any growth of organism. Plain CT showed a large calculus of 5.5cm x 3.5cm in bulbar urethra with bulbar urethral diverticulum. Ultrasonography of abdomen and pelvis showed bilateral mild hydroureter with hydronephrosis. Under spinal anaesthesia perineal urethrolithotomy, diverticulectomy was done. Stone impacted in diverticulum was removed in pieces. The stone was 5.5 cm x 3.5 cm which weighted 60 grams. Urethra was tapered and repaired over silicon catheter 12F which was removed after 4 weeks. Patient made rapid and full recovery without any complication.



## DISCUSSION

Urethral stones are rare form of urolithiasis accounting for less than 1% of urinary calculi, but have greater prevalence in developing countries. Urethral stones in general affect children more often than adults due to higher prevalence of bladder stone in this age group<sup>5</sup>. Predisposing factors for in situ development of urethral stone includes the presence of urethral diverticulum, urethral stricture, hypospadias or meatal stenosis.<sup>6,7</sup> They are exceedingly rare in females because of low incidence of vesical calculi and shorter urethra.<sup>8</sup>

Depending upon site of origin, urethral stones are classified as primary, secondary or migrating.<sup>2</sup> Primary calculi are associated with urethral abnormalities such as stricture, diverticulum, and foreign bodies. Secondary stones are more common than primary stone and have migrated from upper urinary tract. Urethral calculi are mainly composed of struvite,<sup>9</sup> calcium phosphate, or calcium carbonate. Primary stones do not cause acute symptoms, while migrant stones may present as acute retention of urine, dysuria, postvoid dribbling or sometimes sepsis in the presence of infection.<sup>2</sup> Plain

roentgenogram of KUB (kidney, ureter and bladder) area is useful to document the presence of calculi in urethra. Demonstration of the urethral diverticulum is facilitated by ascending urethrogram, micturating cystourethrogram and urethrosonography. Management of urethral calculus varies according to size, site and associated urethral disease. Endoscopic de-roofing of the diverticular sac, fulguration of the associated anterior urethral valve and stone fragmentation by pneumatic or laser lithotripter is an attractive options; however, only a limited number of patients qualify for this treatment modality. Patient with large diverticulum with large stone burden, with thick and fibrotic diverticular wall, and unhealthy adjacent supportive tissue are candidates for open reconstructive surgery. Open urethral diverticulectomy with extraction of calculi followed by primary urethral reconstruction allows satisfactory recovery in most of the patients. Primary reconstruction is considered unsafe in compromised blood supply to the cut ends, tension on suture line, unhealthy urethral mucosa and bacterial contamination of urine<sup>11</sup> Reinforcement of repair with second layer of dartos, tunica vaginalis and buccal mucosa graft may help to reduce the postoperative complication rates, the most common being the urethrocutaneous fistula.

## CONCLUSION

In conclusion, young male individuals presenting with voiding disturbances should be thoroughly investigated for the presence of congenital urethral diverticulum with

stones. Open surgical urethral reconstruction, with or without reinforcement of repair, often results in best outcome in patient with giant calculi with urethral diverticulum.

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