Urology Case Reports, Giant Bladder Stone With History of Recurrence Urinary Tract Infections: A Rare Case

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Giant bladder stone with history of recurrence urinary tract infections: A rare case

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ABSTRACT

Giant bladder stone more than 100 g is a rare finding and commonly associated with urinary tract infection. 32-year-old male came with history of lower abdominal pain, dysuria for 2 years. Patient had history of recurrence urinary tract infections for past 1 year and also complaint pollakiuria, incomplete emptying and hematuria. Abdominal radiograph and ultrasound revealed round calcified pelvic calculi. Patient received antibiotic and underwent open cystolithotomy. Extirpated calculi measured 12.6x9.8 × 7.5cm, 832 g. Postoperative follow-up showed no signs of complications. Complete stone removal and eradication associated urinary tract infections are the main objective of the treatment.

Introduction

Bladder stones constitute approximately 5% of all urinary tract stones.[1] A giant bladder stone which weighing more than 100 g and more than 4 cm in diameter is a rare finding. The prevalence of bladder stones is most commonly associated with voiding dysfunction, chronic infection or the presence of an intravesical foreign body.[2]

The relationship between urinary stones and urinary tract infections is well known and shows two different clinical pictures, first stones that develop following urinary tract infections (infections stones) which play a key role in stone pathogenesis and second, stones complicated by urinary tract infection/ UTI.[3] We reported a giant bladder stone in 32-year-old man with predisposing factor of recurrence history of urinary tract infection.

Case report

A 32-year-old male came to urology clinic with history of lower abdominal pain and dysuria. These symptoms had been felt for the past 2 years and progressive. Patient frequently complaint urinary urgency, pollakiuria, incomplete emptying and sometimes hematuria. No history of any injury. Patient had received some antibiotics and painkillers for recurrence UTI for the past 1 year.

On physical examination, vital signs were normal and abdomen was soft. Digital rectal examination revealed normal prostate. Likewise, blood counts, kidney and liver function were in normal limit. The results of urinalysis showed that pH 5.2, in urine sediments there were 10 cells erythrocytes per field of view and presence of calcium oxalate crystals. Leucocyte and nitrite were negative on urinalysis. Plain abdominal radiograph revealed round calcified pelvic calculi measuring 12.4 × 7.8 cm (Fig. 1.). Abdominal ultrasound confirmed the presence of pelvic calculi and there was no hydronephrosis.

Patient received intravenous ciprofloxacin and underwent open cystolithotomy with general anesthesia for calculi removal. Although the bladder calculi size was relatively large, it was removed easily and completely without adhesion to the bladder wall. The extirpated calculi measured 12.6 x 9.8 × 7.5 cm (Fig. 2.), 832 g. Both cystotomy catheter and urethral folley catheter was inserted. The result of the stone analysis was calcium oxalate.

Patient was discharged on day 6 and did not show any sign of complications. Post-operative wound remained well, no significant infection or inflammation was observed (Fig. 3.). During follow-up, patient remained symptom-free and has experienced no further stone formation.

Discussion

Bladder stones constitute approximately 5% of all urinary tract stones, yet are responsible for 8% of urolithiasis-related mortalities in developed nations. The incidence is higher in developing countries.[1] Giant urinary bladder calculi are a rare clinical entity in today's modern urological practice.[2]

Abbreviations: UTI, Urinary Tract Infection

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Fig. 1. Plain abdominal radiograph showed a large, round calcified pelvic calculi.

Fig. 2. Gross picture of removed bladder calculi, measured 12.6 x 9.8 × 7.5 cm.

In this case, patient is a middle-age man with history of recurrence urinary tract infection as an underlying factor of bladder calculi development. It is known as infections stone because stone that develop following urinary tract infections.[3] Infection-induced stones probably form solely as a consequence of urea hydrolysis, which is catalyzed by urease from bacteria. Ammonia and carbon dioxide are generated as reaction products. A new hydrolysis process forms ammonium ions and bicarbonate, with urine alkalization as the direct consequence.[3] The results of urinalysis showed that, pH 5,2, in urine sediments there were 10 cells erythrocytes per field of view and presence of calcium oxalate

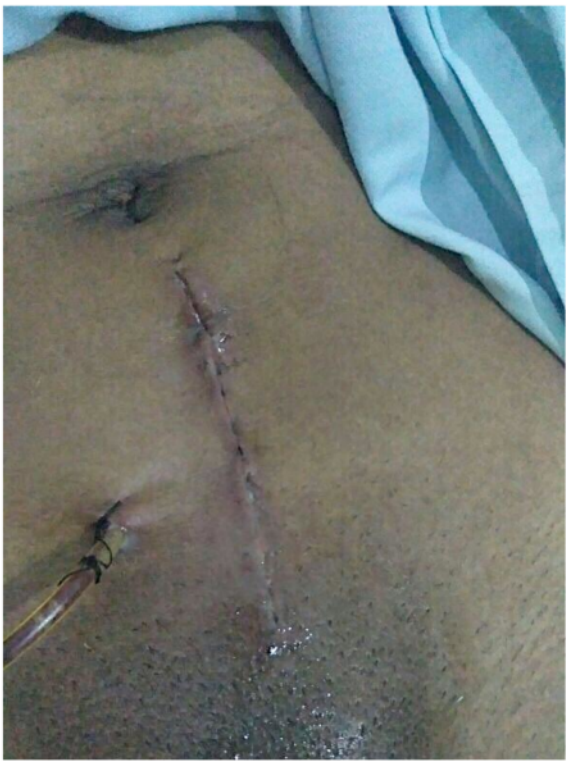

Fig. 3. Day 2 post-operative wound follow up.

crystals. Leucocyte and nitrite were negative on urinalysis. The patient had received long term antibiotics from local physician that might eradicate the bacteria in urinary tract infection.

Plain abdominal x-rays and abdominal ultrasound are the modalities in diagnosing the presence of bladder stones in this patient. Abdominal radiograph revealed round calcified pelvic calculi measuring 12.4 × 7.8 cm (Fig. 1.). Renal ultrasound showed no hydronephrosis. Ultrasound scan of the bladder has a reported sensitivity and specificity for detecting bladder stones between 20-83% and 98–100%, respectively.[1]

There are a number of techniques and modalities available for removing bladder stones such as open cystolithotomy and endoscopic cystolithotripsy.[4] Relieving the obstruction, eliminating the infection, meticulous surgical technique, and accurate diagnosis are essential in their treatment.[5] Considering of large calculi size, patient underwent open cystolithotomy for bladder calculi removal. Antibiotic was used as prophylactic and therapeutic. Although the bladder calculi size was relatively large, it was removed easily and completely without adhesion to the bladder wall. The extirpated calculi measured 12.6 x 9.8 × 7.5 cm (Fig. 2.), 832 g. Both a cystotomy catheter and urethral folley catheter was inserted. On third day postoperative, the cystotomy catheter was removed. The result of the stone analysis was calcium oxalate. Patient was discharged on day 6 and did not show any signs of complications.

Complete stone removal is the main objective of treatment.[4] Elimination of urinary obstruction, if present, is also essential. Eradication of the associated urinary tract infection is only possible after the stone has been completely removed, since stones contain bacteria and the number of bacteria on the stone surface will increase despite antibiotic therapy.[3]

Conclusion

Giant bladder stone is a rare case today. The association between urinary stone disease and urinary tract infection extends into adulthood. Appropriate management of giant bladder stones and risk factors needs to be carried out to prevent further complications and recurrent emergence of the bladder stone.

Declarations of interest

The Authors have no conflicts of interest to declare.

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