CASE REPORT

Giant vesical calculus presenting with azotaemia and anuria

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Received: 26 January 2006 / Accepted: 27 April 2007

Abstract

Giant vesical calculus is a rare clinical entity in modern urological practice. Vesical calculi are usually secondary to bladder outlet obstruction. The usual clinical presentation is with recurrent urinary tract infection, haematuria or with retention of urine. We report an elderly male patient who presented with azotaemia and anuria as a result of bilateral obstructive uropathy due to a giant vesical calculus.

Keywords Giant vesical calculus · Azotaemia · Bilateral obstructive uropathy

Introduction

Giant vesical calculus weighing more than 100 g is a rare entity [1]. Fewer than 30 reports are available in the English literature having weight of the stone more than 100 gm [1]. There are very few reports of a giant stones leading to bilateral obstructive uropathy and anuria available in the literature [2]. We report this rare clinical presentation in an elderly male patient.

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Case Report

A 72-year-old male patient was under investigation for complaints of headache, anorexia and general ill health for the past six months in the medical OPD. Subsequently the patient presented to us with complaint of gradual decrease in urinary output culminating in inability to pass urine and pain hypogastrium since two days. There was no history of previous recurrent urinary tract infection, haematuria, lithuria, catheterisation or trauma.

On examination, the patient's – moderately built but pale – vital parameters were normal; skin was dry, lax and showed signs of chronic dehydration. On palpation, abdomen was normal and bladder not palpable. Per rectal examination revealed a hard mass anteriorly, above and separate from the prostate which was grade one and firm. Per urethral catheterization was attempted but failed. On investigations, Hemogram revealed hemoglobin of 6.5. Plain radiograph revealed a huge radio-opaque shadow in the pelvis (Fig. 1). Abdominal Ultrasonography confirmed the finding of the vesical calculus with evidence of gross bilateral hydronephrosis along with hydroureter. There was no urine output for 12 hours and the renal function tests revealed raised blood urea nitrogen of 201 gm% with serum Creatinine of 9.1gm%. Serum potassium was 7.2 meq/litre, and arterial blood gases showed acidosis. Urine culture revealed E. Coli. Emergency supra-pubic exploration was planned but could not be performed due to poor anesthetic risk. Subsequently, bilateral pre cutaneous nephrostomy (PCN) was undertaken in emergency. After the initial PCN output of 100cc per day from each side, the output increased to a total of 1100cc per day after one week and the potassium level fell below 6 meq/litre though serum urea and creatinine did not decrease significantly. Suprapubic cystolithotomy was the undertaken which revealed giant calculus of size 6.5 × 6.25 cm partially adherent to the bladder mucosa and weighing 305 grams (Fig. 2). Morphologically the stone

appeared to have resulted as a result of fusion of multiple vesical calculi as was apparent from the fracture lines and grooves on the calculus.

The patient was given two cycles of haemodialysis in the post operative period. Distal nephrostogram done through PCN catheters after two weeks, revealed distal patency (Fig. 3). Micturating cystourethrogram was done in the same sitting showed no distal obstruction, but revealed residual contrast in the bladder. Following this PCN catheters were removed. Periodic renal function tests recorded a gradual fall in the levels and at the time of discharge, blood urea was 132 gm%, serum creatinine 5.0gm% and potassium 3.9meq/litre. Per-urethra catheter was removed after four weeks following which the patient voided urine

Fig. 1 X-Ray KUB showing a giant radio opaque shadow in bladder region

Fig. 2 Giant calculus measuring 6.5 × 6.25 cm

normally. USG prostate revealed a prostate volume of 35cc, normal echo texture and a residual volume of 135cc. Patient was referred to department of nephrology for chronic renal failure and was kept on a close follow up for assessing symptoms of benign enlargement of prostate. At three months of follow up in the surgical OPD, the renal function tests had returned to normal, patient was voiding normally though found to be complaining of mild lower urinary tract symptoms (LUTS), mostly irritative. Patient was reassessed and international prostate symptom scoring done which revealed a score of 11 and urine culture again revealed E.Coli. Patient was put on tamsulosin 0.4 mg once daily. At Six months of follow up, patient reported significant relief of symptoms and was voiding normally and urine culture sterile. Thereafter the patient did not turn up for follow up.

Discussion

Calculus disease of the urinary system is known since a long time. Vesical calculi though commonly found, giant vesical calculi are rare in modern era [1]. These calculi are seen commonly in males due to benign prostatic hypertrophy or urethral stricture and are thought to develop from a slipped renal calculus or from the nidus of the infected material with a progressive layering of the calcified matrix. Pitrelli N. et al [3] described a case of giant vesical calculus of mixed composition and weighing about 380 grams in an 89 year old patient. Lewi et al [4] have reported formation of a large vesical calculus as a result of coalescence of two or more calculi. Majority compositions of the vesical calculi include triple phosphate, calcium carbonate, and

Fig. 3 Bilateral distal nephrostogram through PCN catheters revealing distal patency

calcium oxalate. Our patient had vesical calculus consisting of calcium oxalate, triple phosphate and calcium carbonate.

Patients with giant vesical calculus usually present with recurrent urinary tract infection, and retention of urine or haematuria. Very few reports of giant vesicle calculus presenting with anuria are available in literature. Nygaard et al [2] have reported a case of a 50-year-old fisherman presenting with uremia and anuria, due to a giant vesical calculus. He was treated with suprapubic lithotomy, and a calculus weighing 1640 g was removed. Similarly in India Sameer, et al [5] have reported a 45-year-old female patient who presented with azotemia due to a giant vesical calculus weighing 528 grams who recovered after surgery. Our patient presented with azotaemia and anuria as a result of bilateral obstructive uropathy from giant vesical calculus

which appeared to have resulted from fusion of multiple calculi.

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