CASE REPORT OF A RARE PRESENTATION OF MULTIPLE GIANT BLADDER STONES

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Abstract

Bladder stones can be classified as primary, secondary or migratory and the etiology can be multifactorial. Unlike kidney or ureter stones, bladder stones only constitute around 5% of all urinary tract stones. Generally, bladder stones occur in conditions such as bladder outlet obstruction, neurogenic bladder, chronic infection and presence of a foreign body. The prevalence is higher in males with a reported ratio of male to female of 4:1.

Giant bladder stone is a rare condition, even more so, of a case of multiple huge stones. There are numerous case reports about a single giant bladder stone but not so in the case of multiple calculi. We report a case of a lady presented with a sudden onset of acute renal impairment with multiple huge bladder stones detected from imaging. Open cystolithotomy was done, and a few huge bladder stones were extracted. This case report is to illustrate a rare presentation of multiple giant bladder stones.

Keywords: Bladder Stone, Huge, Multiple, Cystolithotomy

Introduction

Genitourinary stone disease is one of the most common conditions encountered in urology practice worldwide. Its incidence and prevalence vary globally due to differences in culture and lifestyle in society. Based on the location of the stone, they can be divided into upper or lower urinary tract calculi.

Bladder stone constitutes around 5% of all urinary stone disease and it can occur as primary, where the stone develops in absence of any known functional, anatomical or infectious cause, or secondarily, in the case of lower urinary tract obstruction (1). The stones can develop originally within the bladder or may result from the maturation of the calculi that migrate from the upper urinary tract.

A bladder stone (cystolith) that weighs more than 100 grams is rare, and even more so, a case of multiple giant bladder stones. This case report illustrates a female with a sudden onset of haematuria and acute renal impairment diagnosed with multiple giant bladder stones detected from imaging. Open cystolithotomy was done, and a few huge bladder stones were extracted. This case has been reported in line with the SCARE Criteria (2).

Case Report

We report a case of a 68-year-old lady with no medical illness, who presented to the emergency department with a history of visible haematuria and dysuria for the duration of one week. In addition, she mentioned having a sensation of incomplete voiding for the past 2 years prior to the onset of symptoms. Otherwise, there was no history of abdominal pain, fever or constitutional symptoms. Clinically, the patient was haemodynamically stable and not septic looking. Examination of the abdomen revealed mild tenderness over the suprapubic region on palpation. A urethra catheter was inserted and drained around 500 ml of clear urine.

Blood investigations done during that time showed renal impairment, evidenced by elevated urea (8.5 mmol/L) and creatinine (173 umol/L) with low eGFR (26 mL/min). Urinalysis detected the presence of leukocyte esterase and haemoglobin with microscopic examination of epithelial cells and erythrocytes. The other serum electrolyte levels, complete blood count and blood gasses were within normal limits. There were multiple radiopaque stones seen in the bladder on abdominal radiography, which subsequently

proceeded with computed tomography urography (CTU) showing bilateral moderate hydronephrosis and multiple huge bladder stones measuring around 6 cm. Bilateral nephrostomy was inserted during admission in view of significant obstructive uropathy and the patient was started with intravenous antibiotics and fluid replacement therapy. Post nephrostomy, renal function was improving with gradual reduction of creatinine and improvement in eGFR value.

She underwent open vesicolithotomy as elective surgery and intraoperative findings noted there were multiple huge bladder stones with no obvious or gross bladder mucosa lesion. Cystotomy was repaired with double layer continuous suture; methylene blue test showed no evidence of leak. The patient was well when discharged after two days post-surgery with no complications, and bilateral nephrostomy was removed subsequently.

Urodynamic Study (UDS) was done on an outpatient basis and showed findings suggestive of detrusor underactivity and the patient was advised on clean intermittent self-catheterization. Repeated renal function during clinic follow-up showed that the creatinine and eGFR were within normal limits.

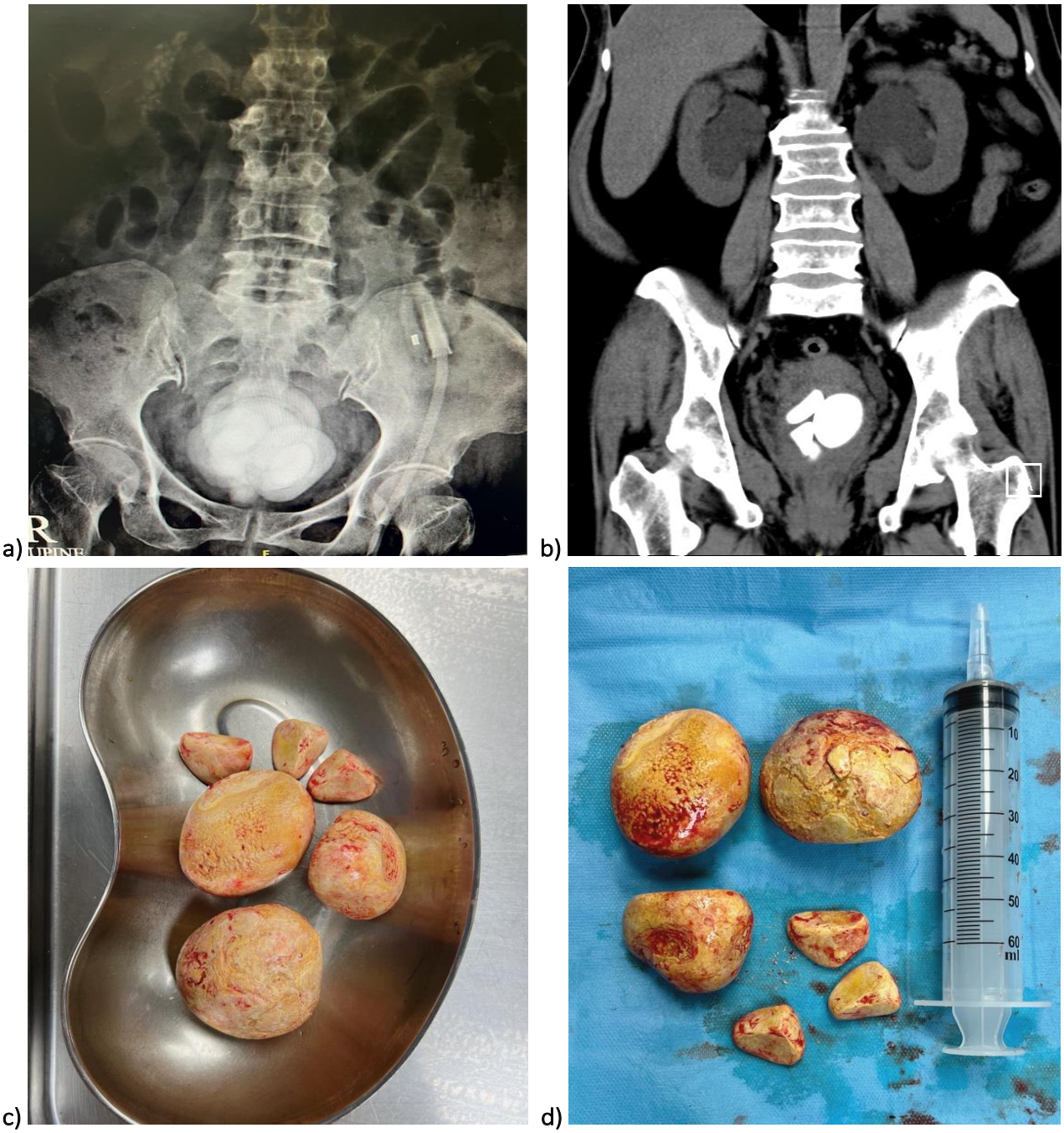

Figure 1

Figure 1 shows (a) kidney ureter bladder (KUB) radiograph with multiple huge radiopaque bladder calculi; (b) Computed tomography urography (CTU) revealed bilateral moderate hydroureteronephrosis with obstructive uropathy; (c) Post open vesicolithotomy showed multiple huge bladder stones extracted with comparison of the size of the stone with a 60 ml syringe (d).

Discussion

Giant bladder stones are defined as calculi weighing more than 100 gm and they are not common; furthermore, multiple huge bladder calculi are even rarer conditions (3). These conditions account for around 5% of all urinary stones and the causes include bladder outlet obstruction, neurogenic bladder disorder, foreign bodies, or urinary tract infection.

Some stones are migratory; they originate from the kidney and are small enough to pass through the ureters into the bladder but are not voided spontaneously. Uric acid is the most common component found in bladder calculi, which accounts for about 50% of all cases (4). On the other hand, the bladder calculi that are mainly composed of calcium phosphate or calcium oxalate are typically migrated from the upper tract.

The most common presenting symptoms of bladder stones are visible haematuria and lower abdominal pain. Occasionally patients may present with other urinary symptoms such as intermittency, dysuria, incontinence or are even asymptomatic.

A plain Xray or KUB are the most common modalities used to diagnose bladder calculi. However, stones that are composed of uric acid are radiolucent, so other reliable modalities, such as CT scan or ultrasound KUB, are used to look for possible cystolithiasis. Stones will typically show up on ultrasound as hyperechoic areas with posterior shadowing. A metabolic evaluation is indicated in patients with bladder calculi composed of uric acid, bladder stones without any identifiable outlet obstruction or nidus, recurrent bladder stones, and in individuals with a strong family history of urinary lithiasis.

The size of the bladder calculi is the most important factor to consider when deciding a treatment method. Various options of management are available from open surgery to an endoscopic approach in dealing with bladder stones. Open cystolithotomy is one of the conventional methods in dealing with bladder stone and is associated with prolonged catheterization, longer hospital stays and poor cosmesis from the abdominal incision. Furthermore, urinary leak and postoperative haematuria are the known complications from this surgery. This has led to an improvised method of the percutaneous technique, by creation and dilatation of the suprapubic tract in a distended bladder, and usage of a combination of ultrasonic or pneumatic energy to fragment the stone into smaller particles which are subsequently extracted out from the bladder.

Another option for bladder stone surgery is through use of the natural orifice for access by transurethral approach (5). Usage of holmium laser, electrohydraulic lithotripter and lithoclast energy in dealing with the bladder stone resulted in higher stone-free rate and shorter operative time. The complications reported were bladder perforation and potential traumatic injury to the urethra, such as stricture. A transurethral cystolitholapaxy is the most common procedure used to treat adults with small bladder stones, while an open vesicolithotomy is more suitable when dealing with large or multiple bladder calculi.

Conclusion

A multiple giant bladder stone is a rare occurrence; they are mainly due to bladder outlet obstruction, neurogenic bladder, chronic infection, and foreign body. This case report is to illustrate the striking discovery of multiple giant bladder stones in a patient presented with obstructive uropathy, which required further investigation.

Acknowledgement

Nil

Competing Interests

The authors declare that they have no competing interests.

Informed consent

Verbal and written informed consent were obtained from the patient for inclusion in this case report.

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