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**Abstract**

Urinary lithiasis is a very common urological disease but bladder lithiasis is very uncommon and account for about 5% of urolithiasis and most frequent urolithiasis in pediatric age. It is very important to exclude lower urinary tract obstruction as the cause, but significant cases may come without obstruction. The male sex is more affected than the female sex.

This is a case of a 65-year-old male patient with complaint of suprapubic pain, dysuria and increased frequency of micturition for more than two years prior to presentation. Abdominopelvic ultrasound demonstrated a continuous bicovex-shaped echogenicity casting posterior acoustic shadow masking the posterior bladder wall posteriorly in keeping with a bladder calculus. There is associated moderate hydronephrosis with enlargement of the kidneys bilaterally. The plain abdominopelvic radiograph demonstrated a dumb-bell shaped radio-opacity of calcific density in the pelvic cavity in keeping with a bladder calculus.

The patient had extraperitoneal cystolithotomy with extraction of the entire calculus and got better.

We present a case of an obstructive calculus in a 65-year-old male patient without an obvious infravesical urinary obstruction due to its rare nature and peculiar presentation.

**Keywords:** bladder calculus, urinary tract obstruction, hematuria, infravesical

**Introduction**

Urinary lithiasis is a very frequent urological disease but bladder lithiasis is very uncommon and often associated with lower urinary tract obstruction as the etiology but significant cases may come without obstruction, with the male sex more affected than the female sex [1-4].

Bladder calculi are very rare and are often secondary to renal stones or to bladder outlet obstruction and bladder diverticulum [1-5]. Diet and amount of fluid intake are attributed to be important factors in the development of bladder stones [5,6].

Urinary stasis with causative factors which may either be urinary tract infection, benign prostatic hyperplasia, neurogenic bladder, urethral stricture, often lead to formation of calculi in the urinary bladder [7, 8].

Bladder calculi usually have varying presentation ranging from completely asymptomatic to dysuria, recurrent urinary tract infection, hematuria, inability to pass urine, azotemia and complaints of suprapubic pain or discomfort [5, 9,10,11].

Bladder stones are most often composed of calcium oxalate or magnesium ammonium phosphate and most times associated with urinary tract infection by urea splitting organisms [2, 12].

Majority of vesical calculi are radio-opaque and often detected by plain radiograph, however cystoscopy, ultrasonography and computed tomography also play vital roles in imaging of vesical calculi [5, 13].

In managing patients with bladder calculi, relieving obstruction, treating the associated urinary infection and surgical removal of the stones are the main goals [13, 14]. Surgical removal of the calculus most times follows an open lithotomy (extraperitoneal cystolithotomy) or the endourological procedures and percutaneous cystolithotripsy [5, 7, 9, 15].

**Case Report**

This is a 65-year-old male civil servant who presented with complaints of difficult micturition, supra pubic pains and hematuria. He was referred for ultrasonography and plain radiograph of the abdominopelvic region from a peripheral healthcare facility.
On examination he was found to be oriented in time, place and person, not pale nor dehydrated, no pedal edema.

The blood pressure was normal; 110/70mmHg, the pulse rate was about 72beats/minute, the respiratory rate was also normal and about 12cycles per minute.

The urine examination yielded red blood and white blood cells, pus cells, no protein nor sugar detected. The culture yielded growth of Escherichia coli.

He had a packed cell volume (PCV) of about 40%, had an elevated white count of about 13500 per microliter. The blood electrolyte, urea and creative levels were normal. The erythrocyte sedimentation rate was 8mm/hr.

Abdominopelvic ultrasound demonstrated a continuous biconvex-shaped echogenicity casting posterior acoustic shadow masking the posterior bladder wall posteriorly, this measures about 44mm x 4.2mm in mediolateral and craniocaudal dimension in keeping with a bladder calculus. There is associated bladder wall thickening of about 10mm with suspended mobile echoes in urine in keeping with cystitis (figure 1).

There is also associated moderate hydronephrosis with enlargement of the kidneys bilaterally (figure 2). The prostate is normal sized with a volume of about 22mls, had no feature to suggest prostate hyperplasia or neoplasm. The remaining abdominopelvic organs showed normal appearances.

The plain abdominopelvic radiograph demonstrated a dumb-bell shaped radio-opacity of calcific density in the pelvic cavity measuring about 50mm x 4.5 mm in mediolateral and craniocaudal dimensions in keeping with a bladder calculus. (figure 3).

A diagnosis of a bladder calculus with bilateral hydroureteronephrosis was established in this case, he however had no features of infravesical obstruction or renal calculus that has possibly migrated to the bladder.

This patient had oral antibiotic treatment followed by extraperitoneal cystolithotomy with extraction of the entire calculus; the calculus was mainly composed of calcium oxalate with no malignant features. Patient had a successful postoperative stay in the hospital, was discharged home two-weeks after for follow-up visits which were uneventful and subsequently discharged from the clinic.
Figure 2: Renal sonograms demonstrating mildly enlarged kidneys with dilated calyces (yellow up-arrows), the kidneys measure about 120mm and 111mm in bipolar length on left and right sides respectively.

Figure 3: Abdominopelvic plain radiograph (kidney, ureter and bladder view: KUB) demonstrating a dumb-bell shaped radio-opacity of calcific density in the pelvic rim in keeping with the bladder calculus (yellow right arrow). The surrounding bones show some degenerative changes. The radio-opacities noted superiorly are within the bowel loops in keeping with fecolith’s (right and left red arrows).

**Discussion**

Urinary lithiasis is a very frequent urological disease but bladder lithiasis is very uncommon and often associated with lower urinary tract obstruction as the etiology but significant cases may come without obstruction, with the male sex more affected than the female sex [1-4]. The index case happens to be a male and had history of recurrent urinary
tract infection, however no features to suggest infra-vesical obstruction is documented.

The male sex is more affected than the female sex in cases of urinary bladder calculus as reported by most literatures [1-4], the case under review is a male patient, thereby conforming to most literatures.

Bladder calculi are very rare and are often secondary to renal stones or to bladder outlet obstruction and bladder diverticulum [1-5]. Diet and amount of fluid intake are attributed to be important factors in the development of bladder stones [5, 6]. The case had no history of urethral stricture and urinary calculus documented, the dietary and fluid intake were adequate and normal with no contributory effect to the development of calculus in the index case.

Bladder calculus usually present with recurrent urinary tract infection, hematuria, inability to pass urine, azotaemia and complaints of suprapubic pain or discomfort [5, 9, 10, 11]. This case presented with history of suprapubic pains, hematuria and difficulty following micturition in conformity to these literatures.

Majority of vesical calculi are radio-opaque and often detected by plain radiograph [5]; the index case was also diagnosed following plain radiograph (KUB) and abdominal ultrasonography conforming to this literature.

Bladder stones are most often composed of calcium oxalate or magnesium ammonium phosphate and most times associated with urinary tract infection by urea splitting organisms [2, 12]. The case under review had a calculus mainly composed of calcium oxalate, he also had accompanying urinary tract infection (urine culture yielded Escherichia coli), thereby conforming to these literatures.

Most patients with vesical calculi are treated by surgical removal of the calculus [5, 9] and the index case was not an exception to this treatment modality (extraperitoneal cystolithotomy) agreeing to these documented literatures.

**Conclusion**

Radiologic examinations like ultrasonography and plain radiography should be promptly done for patients presenting with recurrent urinary infection, hematuria and other urinary tract symptoms to rule-out bladder calculus thereby reducing antecedent morbidity and mortality associated with bladder stones.

**References**


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