

A Giant Ureteral Calculus (Nephrolithiasis): A Case Report

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Abstract:

Urethral calculi, which are uncommon, account for one to two percent of all renal stone illnesses. Rarely, urethral calculi reach huge sizes and are referred to as "giant urethral calculi". Giant ureteral calculi are ureteral calculi more significant than 5 cm in length or circumference. If not treated promptly, these massive calculi can induce ureter obstruction, renal dilatation, and impaired kidney function. A 22 years old female patient was admitted in the urology ward with presenting complaints of High grade intermittent fever, pain in bilateral flank region along with urinary urgency, frequency, and intermittent dysuria. The patient also developed, decreased urine volume, intermittent hematuria, a sense of incomplete voiding, Nausea, vomiting and dribbling that progressively worsened. After undergoing certain specific investigation, like CT scan, abdominal ultrasonography, blood investigation, patient was diagnosed with a giant ureteral calculi. The primary therapeutic intervention was done to the patient and she was treated with Antibiotics, penicillin, Analgesic, Antacid, antiemetic and intravenous fluid during hospitalization.

Keywords: ureteric calculus, ureteral calculi, ureterolithiasis, renal calculus, nephrolithureterolithotomy, transurethral lithotripsy, ureteral stones.

Introduction:

In primary care settings, ureteral stones are a prevalent complaint. The conventional signs of ureteral stones include atypical symptoms, abdominal or flank discomfort, Urinary urgency, Nausea, frequent and painful urination, and penile or testicular pain. These are all symptoms of a urinary tract infection. (1) Calcium oxalate or calcium phosphate makes up about 80% of the stones. Struvite (magnesium) could be another. (2) The size of the stone and its location (proximal, mid, and distal ureter) are related to the likelihood of ureteral stones passing spontaneously. Ureteric calculi are typically tiny; however they can gradually develop larger (3). Stone impaction and crystal aggregation are the first two causes of increased stone diameters, while distal ureteral obstruction is the second. If stones grow 3 mm or larger, they can cause ureter obstruction, the most common cause of clinical symptoms. (4) Ureter obstruction can also cause renal dilatation and dysfunction. Ureteric stones that are more than 5 centimeters in length, circumference, or weight more significant than 50 grams are referred to as enormous ureteric calculi. (5) According to previous research, The spontaneous passing rate was 87 percent 1 mm in diameter stones, 76 percent, stones 2–4 mm, 60 percent, stones 5–7 mm, 48 percent 25%, stones 7–9 mm, and 25%, stones greater than that greater than 9 mm. (6) Stones in the distal ureter and the ureterovesical junction were also more likely to pass spontaneously. The proximal or mid-ureter is more likely to have stones than the distal ureter. (7)

Case presentation:

A 22 years-old-female client presented in the urology ward with presenting complaints of High grade intermittent fever upto 102°F, bilateral episodic pain in flank region along with urinary urgency, decrease frequency, and intermittent dysuria. The patient also developed, decreased urine volume, intermittent hematuria, a sense of incomplete voiding, Nausea, vomiting and dribbling that progressively worsened.

Initial assessment and investigations revealed that, the count of blood report showed increased WBC (21,000/ μ l) and C-reactive-protein levels (8.64 mg/dl), whereas her serum creatinine concentration was normal (0.44 mg/dL), HB 12.4gm % and other blood counts in normal range. Urinalysis showed many urinary WBCs and hematuria. An X-ray of the kidney-ureter-bladder (KUB) revealed a significant bifurcation. CT scan impression shows there is presence of a calculus of size 5.6 x 4.7 mm (413 HU) in the left vesical- ureteric junction causing mild hydroureteral – nephrosis as well as bilateral ureteral stones 12 cm in length and 104 g in weight on the left-side and 1.5 cm longitudinal diameter on the right-side.

These findings led to a clinical diagnosis of the patient's a giant ureteral calculus and further, the patient was treated with Inj. ceftriaxone 500mg (Intravenous twice a day), tablet paracetamol 500 mg per oral (once a day), tablet aqua zone 40 mg orally (twice a day), inj. Pantoprazole 40 mg (intravenously once a day), inj. Tramadol (intravenously when required), Intravenous Fluid (Ringer lactate 500 ml), Normal saline 500 ml. The patient was further suggested for surgical management and definitive method in consideration that it is a clinically effective and safe intervention. It was performed with no complaints during the 2-3 months of follow-up. Over the period, patient reported improvement of his symptoms on subsequent follow-up visits and patient prognosis was good.

Discussion:

In large urethral openings, the presence of large urethral stones is uncommonly detected. A few examples have been recorded in the literature, all of which have resulted in clinical problems. (8) In most cases, standard minimally invasive medical treatments, such as CT scans, abdomen ultrasonography, and blood tests, are used. In general, open surgery is recommended, but it is done with supportive care (monitoring for changes or improvement, increasing fluid intake and intravenous fluid, Nonsteroid-anti-inflammatory drug, and By CT procedures left vesicoureteric, a diuretic successfully treated a patient with a urethral stone measuring 5.64.7 mm.(9-15)

Ureteric calculi are uncommon ureteric stones with a diameter greater than 5 cm. Mayer's calculus was the largest, measuring 11 cm 5.5 cm 5 cm and weighing 286 g, while 4Taylor's stone was the longest, measuring 21.5 centimeters. The largest ureteric stone found in India was 13 cm long and weighed 90 g. The procedure for ureterolithotomy can be done laparoscopically.(16-21)

The most common treatments are extracorporeal shock wave lithotripsy and open surgery. Laparoscopic uretero lithotomy, a minimally invasive alternative to open surgery for treating large ureteral stones has recently been reported. Urinary stone removal needed open surgery in 2.7 percent of cases. Compared to open surgery, there is more minor postoperative discomfort, a shorter hospital stay, and a quicker recovery time. (21) During dissection, it is not required to reach the stone's distal end. A small ureterotomy incision is made can be given at the stone's the proximal end, and the stone can then be extracted with minimal manipulation. (22-25)

Conclusion:

Urethral calculi are a rare case. Following a correct diagnosis based essentially on radiologic imaging including the lower urinary tract, a prompt and adequate treatment is indicated to provide analgesia to the patient. The patient may experience long- lasting and burdensome consequences as a result of the large ureter stone. When confronted with a condition like this, it is important to take into account the possibility of renal dysfunction and bladder cancer caused by prolonged blockage and mucosal damage. In this case, the patient was treated with the initial course of care in the starting phases, which included Antibiotics, penicillin, Analgesic, Antacid, antiemetic and intravenous fluid during hospitalization. The patient's prognosis remains good.

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