

# Giant Vesical Calculus: A Rare Case Report

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## Abstract

A vesical calculus weighing more than 100 g is considered to be a giant vesical calculus. Male preponderance for vesical calculi is well-known. Here, we report a 48-year-old male patient who presented to us with a giant vesical calculus of 700 g, which is quite rare. The stone was removed by open cystolithotomy. Although vesical stones are not rare but finding such a large vesical stone causing bladder outlet obstruction is extremely rare and causes a diagnostic dilemma. The purpose of presenting this case is that there are still rural places in India where basic medical facilities like ultrasound are not available leading to a delay in diagnosis and treatment of the patient.

**Key words:** Cystolithotomy, Urinary bladder, Vesical calculus

## INTRODUCTION

Bladder stones are the most common manifestation of lower urinary tract lithiasis, currently accounting for 5% of all urinary stone disease and approximately 1.5% of urologic hospital admissions. Bladder calculi in non-endemic areas are typically found in adults and almost always in association with other disease processes resulting in urinary stasis or the introduction of a foreign body. Primary bladder calculi are more common in children exposed to low protein, low phosphate diets. Primary bladder calculi rarely recur after treatment. Secondary bladder calculi are generally associated with bladder outlet obstruction.

## CASE REPORT

A 48-year-old male patient residing at Karjat presented with complaints of dull aching pain in hypogastrium, with obstructive voiding symptoms such as poor stream, poor caliber of micturition, hesitancy and sense of incomplete evacuation, storage symptoms such as severe dysuria, urgency and frequency since 1 year, terminal painful

hematuria with clots on and off since 6 months, and fever with chills since 2 days. The patient was investigated at a nursing home in the periphery, where ultrasonography (USG) abdomen revealed prostatomegaly likely to be a prostatic malignancy. So, the patient was referred from there to Tata Memorial Cancer Hospital. There on transrectal ultrasound revealed a large pelvic lesion with hyperechoic lesion measuring 10 cm × 8 cm, which was pushing urinary bladder anteriorly and with echoes within the bladder suggestive of cystitis, prostate appeared normal without any hypoechoic lesion of 26 g. Grayscale USG abdomen showed a 10 cm × 7 cm calculus in the bladder with changes of cystitis with left renal staghorn calculus (4.7 cm × 0.8 cm) with bilateral moderate hydronephrosis. MRI pelvis showed a large intravesical calculus measuring 12 cm × 9 cm × 7 cm with mildly thickened bladder wall, with compression of the bilateral vesicoureteric junction and bilateral hydronephrosis. Prostate and seminal vesicle were normal. So, the patient came to MGM Hospital, Kamothe where on examination there was an 11 cm × 7 cm hard fixed immobile lump palpable in hypogastrium. On per rectal examination, there was hard nodular mass above prostate with firm grade 2 prostate. On routine investigation, hemoglobin - 12; thin layer chromatography - 11,740, urine routine showed occult blood 3+, protein 1+, 10-12 red blood cells, and 2-4 pus cells; creatinine - 1.8, sodium - 137; potassium - 5.2, serum calcium of 8 mg/dl. Urine culture was sterile. X-ray kidney, ureter, and bladder (KUB) (Figure 1)

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**Figure 1: X-ray kidney ureter bladder showing giant vesical calculus**



**Figure 2: Vesical calculus gross view**

revealed a large bladder stone with left renal staghorn calculus. Computed tomography-KUB was suggestive of 11 cm × 7 cm vesical calculus with left renal 4.8 cm staghorn calculus with bilateral moderate hydronephrosis with grade 2 prostatomegaly.

The patient was catheterized to relieve his symptoms and was started on IV broad spectrum antibiotics as he had a fever with chills before surgery. In view of giant vesical calculus, suprapubic cystolithotomy was planned. A combined intra- and extra-peritoneal approach was taken as there were gross adhesions of the fundus with peritoneum due to repeated attacks of cystitis, through lower midline vertical incision. On exploration bladder was inflamed, stretched, and thin walled with gross adhesions to surrounding structures. After doing anterior cystostomy, there was a 13 cm × 10 cm × 8 cm yellowish-white hard bladder stone. Bladder stone was removed (Figure 2), wash given and bladder was closed in two layers after putting a 22 F suprapubic, 18 F per urethral catheter and a pelvic drain. Weight of the stone



**Figure 3: Vesical stone weighing 700 g**

was 700 gms. (Figure 3) Post-operative period was uneventful, and the patient was discharged on 7<sup>th</sup> post-operative day. Per urethral catheter was removed on the 10<sup>th</sup> day, suprapubic catheter was clamped and removed on the 12<sup>th</sup> day after checking his urine flow rate. Stone analysis revealed uric acid, triple phosphate, and calcium oxalate indicative of primary stone formation.

## DISCUSSION

A giant vesical calculus more than 100 g is an unusual finding in urological practice.<sup>1-4</sup> Giant vesical calculus are universally uncommon, and there are only a few case reports of stone weighing more than 500 g.<sup>2</sup> Urinary bladder stone can be either primary or secondary. Most common causes include urinary tract infection due to bladder outlet obstruction leading to stasis, encrustation around a foreign body, neurogenic bladder, bladder diverticulum, and long-term catheterization.<sup>3</sup> Urinary bladder stone constitute of 5% of all urolithiasis. Bladder stone are more common in males. Most vesical calculus is composed of triple phosphate, calcium carbonate, and calcium oxalate. It is thought that a giant vesical calculus develops from a nidus of infection or a single ureteric stone with progressive layerwise deposition of calcified matrix. Bladder stones are often multilayered. Studies have shown that the bladder stone nucleus often does not contain struvite or calcium phosphate; however, subsequent concentric layers contain these substances only in large amount. Schwartz and Stoller indicated that infection may not be the inciting factor in stone formation but may also play a major role in further stone crystallization.<sup>3</sup> In the era of laparoscopic and robotic surgery, the purpose of presenting this case is that there are still rural places in India where basic medical facilities such as ultrasound are not available leading to a delay in diagnosis and treatment of the patient.

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