

## Giant Bladder Calculi: A Case Report

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### INTRODUCTION

Bladder calculi account for 5% of all urinary system calculi.<sup>(1)</sup> They are usually seen in older men and occur because of infravesical obstructions such as prostate hyperplasia, neurogenic bladder, urinary tract infection (UTI), foreign bodies, but anti-incontinence surgery in woman and rarely pregnancy can also be predisposing factors for bladder calculus.<sup>(2,3)</sup> Bladder stones could also be seen in patients who had undergone radical cystectomy for invasive bladder cancer with neo-bladder reconstruction.<sup>(4)</sup> Bladder stones may cause unilateral or bilateral hydronephrosis.<sup>(5)</sup> In this case report we present a 50 years old man who had giant bladder stone.

### CASE REPORT

A 50 years old man was admitted to the our clinic with lower abdominal pain, dysuria and pollakiuria. The patient came from mountainous rural area where the typical foods eaten by inhabitants contain high levels of oxalate and animal protein, such as sweet potatoes, mushrooms, spinach and red meat. The patient had no history of inflammatory bowel disease or surgery. He had several UTIs in his medical history. Physical examination revealed mild tenderness in the lower abdomen. On digital rectal examination prostate was normal. Routine hemogram test was normal and blood urea nitrogen and serum creatinine levels were 70 mg/dL and 2.3 mg/dL, respectively. Patient urine culture was sterile before surgery. Plain abdominal radiography showed a large and regular bladder stone measuring 10.1 × 7.5 cm (**Figure 1**). Ultrasonography revealed bilateral hydroureteronephrosis and a large bladder stone. Preoperative neurological examination was normal and there were no signs of neurogenic bladder. Therefore, videourodynamic evaluation was not performed pre- or post-operatively. Patient underwent diagnostic cystoscopy before open surgery on the same operative day. No anatomical urethral obstruction was observed and there wasn't any suspicion for bladder cancer. Then, we performed an open cystolithotomy under the diagnosis of bladder stone. During the operation, digital rectal manipulation was needed to remove the stone, which was adherent to the bladder mucosa. The stone weighed 500 gr and measured 9.9 × 8.9 × 7.1 cm in size (**Figure 2**). X-ray crystallography showed calcium oxalate monohydrate stone composition. He was evaluated in the outpatient clinic on the first month after the operation. The patient had decreased hydroureteronephrosis on follow-up ultrasonography, and blood urea and serum creatinine levels were improved. Uroflowmetry study was normal. Also metabolic evaluation protocol showed hyperoxaluria with low urine pH. The patient gave an informed consent for publishing of data.



**Figure 1.** Giant bladder calculi seen in plain radiography.



**Figure 2.** Extracted giant bladder stone by open cystolithotomy.

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## DISCUSSION

Massive or giant bladder calculus is a rare entity in the recent urological practice. Males are more affected than females. Bladder calculi are usually observed secondary to bladder outlet obstruction. These patients generally present with recurrent UTI, hematuria or urinary retention.<sup>(6)</sup> Our patient was admitted with recurrent UTIs. Bladder stones are commonly observed with renal or ureteral calculi, but in our case there wasn't any upper urinary tract calculus.<sup>(7)</sup> Although bladder cancer is associated with upper and lower urinary tract stones,<sup>(8)</sup> we did not see any suspicious lesions in terms of bladder cancer on cystoscopy. Hyperoxaluria, hypercalciuria and a low urine calcium-oxalate ratio are implicated in calcium oxalate urinary stone formation.<sup>(9)</sup> Although our patient had several UTIs history, no struvite and carbonate apatite existed in the stone analysis. In our case, dietary hyperoxaluria and low urinary pH due to high intake of animal protein may resulted in bladder stone formation. Boonstra and colleagues reported a patient with acute abdominal pain and a palpable mass in the lower abdomen. After laparotomy they found bladder rupture caused by a giant vesical calculus and small intestine and sigmoid colon perforations due to pressure necrosis.<sup>(10)</sup>

## CONCLUSION

In conclusion, this case report emphasis that, in a patient with lower abdominal pain and recurrent UTIs, a bladder stone must be considered and the patient must be evaluated with radiological investigations. As a second finding after reviewing the related literature on this topic, we believe that large bladder stones should be viewed as a different clinical presentation than small bladder stones, especially regarding the cause of their formation.

## CONFLICT OF INTEREST

None declared.

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