

A huge bladder calculus causing acute renal failure

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Abstract We present a 39-year-old man with repeated urinary tract infection and lower abdominal pain. Kidney–ureter–bladder (KUB) and IVU film showed a huge 450-g elliptical pelvic calculus that was surgically removed with excellent results. Surgical intervention by cystolithotomy or endoscopic cystolithotripsy can achieve satisfactory results. Bladder outlet obstruction should be treated simultaneously. Bladder stone is a common disease, but it is rare for such a calculus to be so large as to cause bilateral hydronephrosis. Close follow-up, however, is mandatory because the recurrence of urolithiasis is high in those patients with voiding problems and recurrent urinary infection. To the best of our knowledge, this is the largest bladder stone in a human male.

Keywords Bladder · Calculus · Renal failure

A 39-year-old man presented to the emergency service with fever, nausea, vomiting, lower abdominal pain and tenesmus. He has had urinary frequency, urgency, voiding difficulty, small caliber of urinary stream, lower abdominal pain and urinary intermittency for 10 years without any medication or medical consultation. Chronic constipation was also a complaint. Physical examination revealed a distended abdomen with mild tenderness, whereas digital rectal examination did not find any uncommon condition. At that time, blood urea nitrogen and serum creatinine levels were 95 and 8.1 mg/dL, respectively. Hemogram showed leukocytosis. Renal ultrasound showed bilateral

moderate-to-severe hydronephrosis. KUB+IVU film revealed a huge pelvic calculus and bilateral moderate-to-severe hydronephrosis (Fig. 1). Other examinations were not done because of his poor personal economic condition. A large bladder stone resulting in acute renal failure, obstructive uropathy, and urinary tract infection was diagnosed. A 16-Fr urethral catheter was indwelled to drain the turbid urine. *Escherichia coli* growth was confirmed by urine culture. Broad-spectrum parenteral antibiotics were given according to culture sensitivity. After the urinary



Fig. 1 A huge pelvic calculus with hydronephrosis

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Fig. 2 Elliptical bladder calculus

tract infection was put under control, a cystolithotomy was done subsequently. A 450-g elliptical bladder stone mainly composed of magnesium ammonium phosphate was delivered smoothly. The diameter is 11 cm (Fig. 2). Fortunately Bladder biopsy did not reveal any malignancy. Serum creatinine and bilateral hydronephrosis recovered to

a normal level within a week. The voiding dysfunction had disappeared at 3-month follow-up.

Bladder stone is a common disease, but it is rare for such a calculus to be so large as to cause bilateral hydronephrosis [1]. Bladder stones may be single or multiple, small or large enough to occupy the entire bladder. However, most stones are mobile within the bladder, as they are ovoid like pebble stones. The content of his bladder stone was mainly magnesium ammonium phosphate, a component of infectious stone, which is different from the common composition of uric acid in older men. Surgical intervention by cystolithotomy can achieve satisfactory results [2]. Bladder outlet obstruction should be treated simultaneously. Early diagnosis and early treatment are necessary. To the best of our knowledge, this is the largest bladder stone in a human male.

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