ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 04 | April - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ROCK IN THE BLADDER!

Urology

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ABSTRACT

In this era of laparoscopic and robotic surgeries, there are still certain rural areas where basic medical facilities like ultrasound are not available. We report a case of a 40 years old female with a giant urinary bladder calculus. There was no known predisposing factor like bladder outlet obstruction or a foreign body there inside. Compressing on the ureters, it had also caused bilateral hydroureteronephrosis. After complete evaluation and treatment of urinary tract infection, the calculus was removed by open cystolithotomy successfully. It was an isolated bladder stone weighing 800 grams and measuring 7.5 cm X 6.5 cm. There was no evident growth on gross inspection of the bladder mucosa.

KEYWORDS

CASE REPORT

A 40 years old female presented with the complaints of a few recent intermittent episodes of hematuria. She further added that she had been having increased urinary frequency and urgency for past 15 years along with dull pain in hypogastrium for past 5 years. She used to take some indigenous herbal medicines from a nearby practitioner. In the dearth of awareness and due to ignorance, she never sought medical advice and adapted herself to her symptoms. This recent onset of hematuria worried her and she now sought medical advice. There was no history of trauma to the pelvic organs. Urinalysis revealed 10-12 RBCs per high power field, numerous leucocytes and bacteria. The urine culture reported the growth of klebsiella species. Blood counts and renal and liver function tests were normal. The neurologic examination revealed no evidence of neurogenic bladder. Cystoscopy done before the surgery revealed no bladder outlet obstruction. Roentgenogram showed a radio-opaque shadow in the pelvic region.**(Figure 1)**

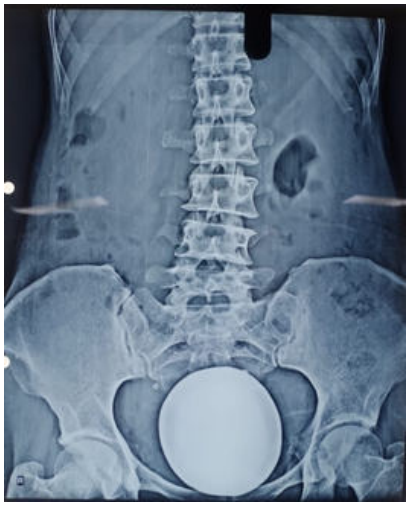

Image 1. Radiograph of kidney, ureters and bladder showing a giant radiodensity overlying the bladder.

Then abdominopelvic ultrasonography was done which described an ovoid radio-opaque shadow inside the urinary bladder measuring approximately 6 cm X 7 cm in dimensions suggestive of a giant urinary bladder calculus with bilateral moderate hydroureteronephrosis. Intravenous antibiotics were started on admission and after 5 days repeat urine culture was sterile with no pyuria or bacteriuria. The patient was then taken up for open cystolithotomy under spinal anaesthesia. A giant light brown colored vesical calculus with rough surface, measuring 7.5 cm X 6.5 cm and weighing 800 grams was removed from the urinary bladder.**(Figure 2 and 3)**

Image 2. A light brown coloured bladder stone measuring 7.5 cm X 6.5 cm.

Image 3. The bladder stone weighing 800 grams.

It was huge and compressing on both the ureteral openings but non-adherent to the bladder mucosa. Bladder was washed intra-op with normal saline flush. There was no evident growth on the bladder lining mucosa on gross inspection. She was catheterized with 18F Foley catheter. Subsequently the bladder was closed in two layers using 2-0 vicryl sutures. The rectus sheath was closed with nylon sutures. To ensure continuous bladder drainage, urethral catheter was left in situ.

The urethral catheter was removed on the 7th postoperative day, and the urinary output was normal thereafter also. The peri-operative course

was uneventful and the patient was discharged on the 7th post-operative day. Patient reviewed back after 2 and 6 weeks for follow up and was asymptomatic. Hydronephrosis had resolved at 6 weeks visit.

DISCUSSION

It is rare to find giant bladder stones in the developed world. But this entity still can be found in a developing country. Bladder stones constitute about 5% of all urinary tract stones.(1) Giant bladder stone is defined as the one weighing more than 100g.(1) It is usually formed in a scenario of bladder outlet obstruction, either mechanical or neurological. Foreign body inside the bladder for a prolonged duration may also lead to the same.(1) These lead to urinary stasis and infection which predisposes to stone formation. It is extremely rare to find a giant bladder calculus sans any predisposing factor as in our patient. Rarely in endemic areas, children may harbor bladder calculi owing to dietary factors and poor socio-economic conditions.(2) Mostly bladder calculi are secondary to and associated with renal or ureteral calculi. It is thought that giant vesical calculus develops from nidus of infected material or from single ureteric calculus with progressive layer wise deposition of calcified matrix. They rarely occur without associated upper urinary tract calculi. They are more common among adults and in men due to greater incidence of bladder outlet obstruction.(2) Small bladder stone may be an incidental finding in asymptomatic patients. If symptomatic, they present as lower abdominal pain, difficult urination, frequent urination, painful urination and blood in urine.(3)

Mostly bladder stones are composed of triple phosphate, calcium carbonate and calcium oxalate.(4) A stone analysis could not be done because of financial constraints. The majority of bladder calculi are radio opaque and detected by plain radiograph. Apart from that, ultrasound, CT scan, magnetic resonance imaging and intravenous urogram may show bladder calculi with adequate precision.

Undoubtedly, the present case report is interesting. Firstly, a review of the literature shows that giant bladder stones are uncommon, especially in women. Secondly, this is an extremely large bladder calculus occupying most of the bladder and pressing on the orifices of the ureters, leading to hydroureteronephrosis. Thirdly, it was an isolated bladder calculus with no other stone in the kidneys or the ureters. Fourthly, and the most important point was that we found no bladder outlet obstruction in the patient. The reason perhaps was that the bladder stone must have formed after an upper urinary tract calculi descending into the bladder a long time back.

Options of treatment include open cystolithotomy, transurethral cystolithotripsy, shock wave lithotripsy or percutaneous cystolithotripsy.(5) The choice of treatment modality is influenced by the age and physical status of the patient, size of the calculus and the presence or absence of coexisting lesions involving the urethra, the bladder neck, or the bladder itself. Available facility and skills of the operating team are also factors influencing the choice of treatment. Surgery has been considered the treatment of choice for managing giant vesical calculus.(6) Most literature reports recommend open suprapubic cystolithotomy as treatment of choice. But recently advanced endourological procedures have replaced an open approach to urinary tract stones. Percutaneous procedures are equally effective and safe with considerably lower morbidity than open surgery. With a greater than 90% stone-free survival rate, percutaneous cystolithotripsy has the advantage of no increased risk of developing urethral stricture as no endoscopic sheath is passed per urethra.(6) Due to the giant size of the stone, our patient was treated by open cystolithotomy with satisfactory outcome. Open surgery offered the advantage of removing this giant stone rapidly and entirely under wider field of vision. Bladder calculi cause chronic irritation and inflammation of the lining mucosa which may lead to the development of bladder cancer.(7) Fortunately, in this case , the interior of the patient bladder was normal and no neoplasm was visible to the naked eyes after the stone was removed.

In this advanced 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 patients.

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