

Vesical Jack Stone: A Rare Entity

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Introduction

A 'Jackstone' is a sub-type of vesical calculus. It rarely occurs in the upper urinary tract [1]. It is so-called for its semblance to the stuffs used in the kids' game 'Jacks' (Figure 1). It has a spiculate, near-spiked view with an impenetrable dominant base [2]. It is theorized that jackstones constantly get interaction with the bladder wall mostly at the boundaries of its spikes, rubbing off the soft recently triggered adherent mucoprotein and apatite, while permitting deposition of additional calcium oxalate. Due to this, the stone develops only at the tips, making the spiculate jackstones figure from an formerly mamillated stone [3]. Only 1 case of silica jackstones was reported to have established in an individual who had been eating an oral magnesium tri-silicate complex [4].

Case Report

We received a male patient of 55 years of age through outpatient department with complain of deteriorating, mainly voiding lower urinary tract symptoms from last one year. He had hesitancy and frequency. He had practiced only one episode of evident, aching hematuria lacking clots at the end of micturition. It settled with one-week medications.

There were no other signs such as dysuria, fever, acute or chronic retaining of urine, nocturia, urgency, night-time enuresis or passage of calculi. There was no record of aggressive events such as catheterization or Lower tract surgeries. His previous medical record was unremarkable. His general physical examination was unremarkable but had enlarged prostate on examination.

On ultrasonography he was found to have 38 g prostate with a large stone in the urinary bladder. X-Ray KUB showed a large radio-opaque shadow in the pelvic region (Figure 2). He was diagnosed as a very rare kind of urinary bladder stone. After preoperative workup open vesicolithotomy was planned, stone removed successfully with un-eventful recovery of the patient. Intraoperative findings revealed 6x6 cm black colored stone having appearance of radiating spicules (Figure 3).

Post operatively, patient remain fit. He was discharged on Alpha 1a blockers and antibiotics. Foley's was removed at 11th postoperative day. After 4 weeks of follow up, patient's symptoms were settled and he was in good health.

Discussion

Jackstones are rare urinary bladder stones, having light brown color, spiculated surface resembling toy jacks and usually found in urinary bladder [5]. Jackstones are usually made of

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Figure 1: Jack-toy.



Figure 2: X-Ray KUB of the patient.



Figure 3: Retrieved Jackstone from patient's urinary bladder.

calcium oxalate dehydrate crystals and crystallization resulting in spiked stones. It is hypothesized due to repeated contact with urinary bladder wall there is continuous deposition of calcium oxalate at tips thus producing maximum growth at tips and giving spiculated appearance [2]. The common causes of jack stone formation are bladder outlet obstruction, urinary tract infection, previous urological intervention and urinary diversion [6].

These stone are usually symptomatic, due to repeated contact with urothelial they can give rise to hematuria and rarely malignancy. Common symptoms usually due to primary disease are hesitancy, intermittency, dysuria or suprapubic pain, urinary retention, nocturia or increase frequency [1]. Due to their typical appearance they are easily picked up on X-rays, Ultrasound can be used for size of stone and evaluation of prostate. Urine routine examination may show hematuria of presence of infection. Cystoscopy can be diagnostic as well as therapeutic. CT scan is the investigation of choice for precise size and structure of stone guiding the clinician for further management plan [7].

There are many modalities of treatment to deal with urinary bladder stone s depending on availability of modern resources, starting from dealing with the primary cause to simple remove of the stone. These stones due to their composition are susceptible to fragmentation with the help of lithotripsy or litholopaxy if resources are available. However, cystolithotomy is recommended for removing giant bladder stone [8].

Our patient was also having lower urinary tract symptoms suggesting of a bladder outlet obstruction due to benign prostate as primary cause resulting in jackstone formation. Ultrasound was enough to confirm the presence of stone in bladder and benign prostate hyperplasia. X-ray showed typical appearance of stone. As different treatment modalities are available for the treatment of jackstone and its primary cause. We managed benign prostate hyperplasia with tamsulosin which is alpha receptor blocker initially for two weeks and the stone removal through open cystolithomy considering the large size of stone, the resources available and informed consent from patient. However further discussion and more cases are needed to compare minimal invasive vs open technique in management of jackstones and accurate diagnosis is essential for management of bladder stone, relieving the bladder outlet obstruction and eliminating the urinary tract infection [9].

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