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Case Report
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Vesical Jackstone: A Rare Case Report

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Abstract

Jackstones are a rare type of urinary bladder stone which resembles the toy 'Jack'. Calcium oxalate dihydrate is the main crystal forming them. A jack stone has a dense central core and its spicules are radiating. Literature stats that spikes of jackstones constantly get interaction with the bladder wall at the boundaries which leads to rubbing off the soft adherent mucoprotein and apatite, while additional calcium oxalate is deposited.

Introduction

Thus, the stone develops only at the tips [1-3]. Their usual color is light brown with dark patches. They mainly occur in the urinary bladder and the upper urinary tract is a rare site [1]. One case of silica jackstones was reported to have established in an individual who had been eating an oral magnesium tri-silicate complex [4].

Case Presentation

A 65-year-old male patient came to outpatient department with complains of burning micturition, occasional hematuria, pain in lower abdomen, thinning of urinary stream, frequency and nocturia. Patient had no history of other urinary symptoms like dysuria, fever suggestive of urinary sepsis, urgency, nocturia, episodes of urinary incontinence or passage of calculi. There was no surgical or medical history or invasive procedures such as catheterization. His physical examination was normal. Ultrasonography suggested 63 g prostate with thickened bladder wall (5 mm to 6 mm) with few mobile stones (largest 27 mm) in the urinary bladder. He had a significant post-voidal volume (96 ml) in the presence of 250 ml of prevoidal volume of urine. Upper parts of the urinary tracts were normal. X-Ray KUB (Kidney, Ureter, and Bladder) showed a large irregular shaped radio-opaque shadow in the pelvic region (Figure 1). Uroflowmetry showed a significant limitation of maximum flow rate (Qmax =4.6 ml/s). Pre-op blood investigations were normal with normal PSA. We operated the patient for TURP (Transurethral Resection of Prostate) and open cystolithotomy. Intraoperative findings revealed 3 jack stones of around 2 cm × 3 cm light brown with dark patched colored having appearance of radiating spicules (Figure 2). Patient had an uneventful post-operative period. Alpha-1A blockers and antibiotics in the postoperative period were given and Foley's catheter was removed on the 21st postoperative day. Four weeks after the surgery, the patient had a good voiding stream [5-11].

Figure 1: Showed a large irregular shaped radio-opaque shadow in the pelvic region.

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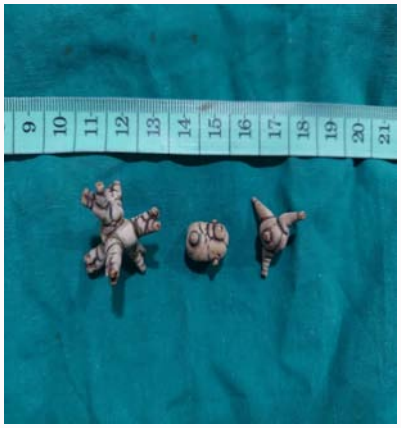

Figure 2: Intraoperative findings revealed 3 jack stones of around 2 cm × 3 cm light brown with dark patched colored having appearance of radiating spicules.

Discussion

Only few cases of jackstones had been reported previously [1,10,11]. Jackstones are rare urinary bladder stones, having light brown color, speculated surface resembling toy jacks and usually found in urinary bladder [5]. Jackstones are usually made of 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 speculated 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]. 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]. 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 [9-11].

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