Case Report

Unusual Case of Bladder Stone with an Embedded Scalpel Blade

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Abstract

ME is an 84-year old man who presented with a 3-year history of storage urinary symptoms associated with strangury. He had an open radical prostatectomy and direct visual internal urethrotomy 10 years prior to presentation for early prostate cancer and partial urethral stricture, respectively. A plain abdominal X-ray revealed a bladder stone in which there was an opaque foreign body embedded within the stone. A cystolithotomy was done, and the retrieved stone was cracked open, revealing a surgical blade.The patient had an uneventful recovery postoperatively.

Keywords: *Bladder stone, foreign body, surgical blade*

Introduction

Foreign bodies in the bladder forming nidus for stone formation have been severally reported in the literature. The sources of these foreign bodies are iatrogenic, self-inserted from mentally impaired individuals, misplaced sexual gratification, sexual abuse, and migration from adjacent organs.

Iatrogenic sources have become more common with the proliferation of endoscopic, laparoscopic, and robotic minimally invasive procedures requiring clips and sometimes broken parts of this equipment left behind. These foreign bodies, if left around the urinary bladder, easily become a nidus for stone formation.

We report an unusual case of a surgical blade left behind after surgery around the bladder, forming a nidus for a large stone in which the blade was embedded within the stone.

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Case Report

Mr. ME is an 84-year old retired civil servant who presented with 3-years recurrent episodes of strangury (severe pain in the phallus with clutching of the phallus with his hand) with associated frequency, nocturia, and urgency. He had received treatment for a urinary tract infection at a peripheral hospital for each round of disturbing symptoms.

He had a suprapubic catheter placed 10 years prior to presentation. The catheter was changed every month for these 10 years.

He had a history of lower urinary tract symptoms 12 years ago and was seen in a teaching hospital in Port Harcourt, Nigeria. He had an initial evaluation,

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and the prostate specific antigen (PSA) was found to be raised. Subsequently, prostate biopsy was done, which confirmed prostate cancer. He traveled to India, where further evaluation was done, and had an open radical prostatectomy and laser urethrotomy (for a partial stricture) in 2010. The finding at evaluation was T2c NoMo with positive margins. He subsequently had adjuvant radiotherapy in Nigeria and was also placed on goserelin injections. He developed urinary retention a few months after he returned to Nigeria, and a suprapubic cystostomy was done in a peripheral hospital due to failure of urethral catheterization and urethral dilatation. He has since been on the suprapubic catheter, changed monthly, till a recent presentation.

He is neither known to be hypertensive nor diabetic. There is no family history of prostate cancer.

Examination revealed an elderly man in painful distress (clutching his phallus), not pale, afebrile, and anicteric. The blood pressure was 120/81 mmhg.

He was on a suprapubic catheter draining cloudy urine into a urine bag. A digital rectal examination revealed an empty prostatic bed.

An impression of UTI secondary to bladder stone was made in a known CaP/urethral stricture patient.

Investigations done included PSA-2.2 ng/ml, abdominopelvic, ultrasound and a large vesical stone with right caliectasis. Urine cultures yielded Escherichia coli sensitive to only meropenem.

Figure 1: Antegrade and retrograde urethrograms showing the scalpel within the stone

Antegrade and retrograde urethrograms [Figure 1] revealed. A. vesical stone (with an embedded scalpel), contracted low-volume urinary bladder with grade IV bilateral vesicoureteric reflux. B. Generalized urethral caliber narrowing with severe impassable stricture of the bulbous segment.

Kidney function was normal, and fasting blood sugar was 6.2 mmol/l.

He was commenced on IV meropenem 1000 mg 8 hourly and counseled for surgery.

Operative technique and findings: under spinal anesthesia and in a supine position, a pfannenstiel incision was made, excising the previous scar and encircling the suprapubic cystostomy site. Through sharp and blunt dissection through the dense fibrous tissue and distorted anatomy from previous surgeries, access was gained to the bladder wall. Adhering gut was separated from the bladder, and the contracted bladder, less than 100 ml in volume, was opened between stay sutures and the bladder stone retrieved. Figures 2-5. Copious irrigation was done with normal saline, and the bladder wall was closed in two layers with Vicryl 2, inserting a suprapubic catheter into the bladder and leaving a retropubic drain. The skin was closed with an interrupted nylon 2-0 suture. Urethrocystoscopy revealed pinhole urethral stenosis in the bulb membranous area. An attempt at a repeat direct visual internal urethrotomy (DVIU) will be done later.

The stone was cracked open and the scalpel blade embedded within it was exposed and retrieved as shown in Figures 6-8.

Postoperatively, the patient was commenced on oral feeding, the drain was removed after 48 hours and the patient was discharged after one week.

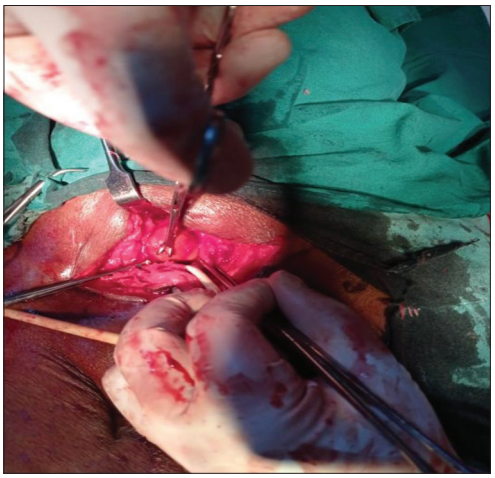

Figure 2: Stone visualized

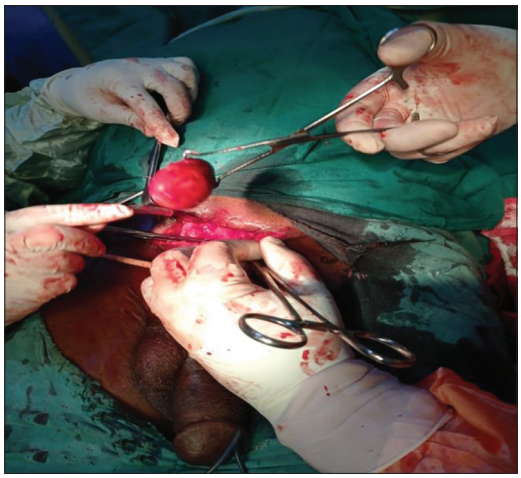

Figure 3: Stone retrieved from the bladder

Figure 4: Stone length depicted

Figure 5: Stone width depicted

Figure 6: Crushed stone showing part of a scalpel within the stone

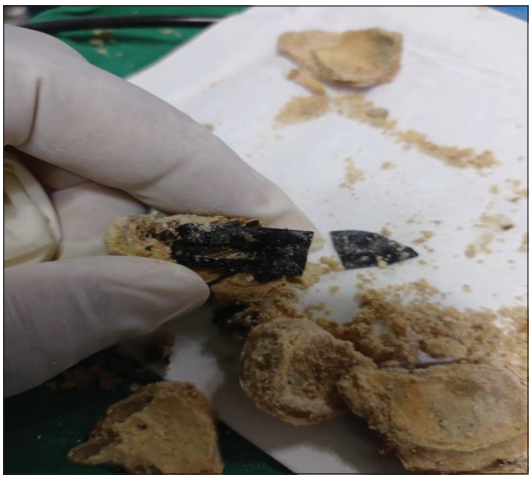

Figure 7: Full length of stone shown with stone

Figure 8: Scalpel retrieved from stone

Discussion

Foreign bodies in the bladder are not rare phenomena. Bansal A *et al.*[1] in their study in North India reported a finding of over 15 different foreign materials found in the bladder. These included electrical wires, chicken bones, wooden sticks, thermometers, bullets, intrauterine contraceptive devices, encrusted sutures, surgical staples with stones, needles, pencils, household batteries, gauze,

screws, pessaries, ribbon gauze, parts of Foley catheters, broken parts of endoscopic instruments, and knotted suprapubic catheters.[1] They found that iatrogenic causes accounted for most circumstances of insertion. Several studies reported similar foreign bodies in the bladder.[2-6] Other ways of insertion include self-insertion, sexual abuse, assault, and rarely migration from other organs.[1] We believe that the source of the scalpel in our own case was iatrogenic, most likely during the open radical prostatectomy offered him for early cancer of the prostate.

Apart from causing irritative bladder symptoms, foreign bodies may become a nidus for stone formation in the bladder if they stay long enough.[7-10]

A surgical blade as a foreign body leading to the formation of a stone in the bladder has not yet been reported in the literature. This finding is extremely unusual because the surgical blade is usually firmly held on the scalpel holder, and one would expect a broken part rather than a whole blade as found embedded in the stone. It beats the imagination to imagine how this happened. Ideally, a routine count of instruments/materials used is done before abdominal wound closure in surgical operations. This may have prevented this situation.

The disturbing symptom of strangury in this patient should always raise suspicion of a large stone causing intense irritation of the trigone of the bladder. This patient was seen from a distance clutching his phallus in agony.

The treatment of this patient was an open cystolithotomy. This was appropriate for the patient considering that he was on a suprapubic catheter for years for a yet-to-be-treated urethral stricture and also dense fibrosis of the anterior lower abdominal wall from radical prostatectomy and later suprapubic cystostomy. Endoscopic or minimally invasive treatment would have been extremely challenging for this patient.

We hope to subsequently manage the urethral stricture after the infection has been completely controlled.

Conclusion

A surgical scalpel can inadvertently be forgotten in surgical wounds and can lead to bladder stones in the urinary bladder. We must bear this possibility in mind, and while performing routine counts of instruments/material used postoperatively, we should not forget the surgical scalpel. This case report highlights the fact that this complication is a possibility and should be avoided.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In this form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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