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CASE REPORT

Foreign bodies in the urinary bladder – report on two cases in Kumasi, Ghana

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Purpose: Foreign bodies (FBs) in the urinary bladder can pose major diagnostic and treatment challenges. They usually present as persistent or recurrent urinary tract infections which do not respond to antibiotics. FBs in the urinary bladder may be self-inflicted for autoerotic, psychiatric or therapeutic reasons by the patient. It may also be as a result of migration from adjacent organs or from penetrating trauma. The aim is to highlight the need for thorough urological evaluation in patients presenting with persistent or recurrent urinary tract infections post-abdominal or groin surgery.

Results: We present a 28-year-old man with nylon suture in the bladder and a 53-year-old woman with gauze in the bladder who presented at seven months post-hernia repair and one year post-abdominal hysterectomy respectively and were successfully managed at our centre. They had similar clinical presentations of lower urinary tract symptoms, dysuria and recurrent gross haematuria following their respective surgeries.

Conclusion: Foreign body in the urinary bladder should be considered a differential diagnosis in any patient with persistent or recurrent urinary tract infections following any abdominal/groin surgical procedure.

Keywords: foreign bodies, urinary bladder, urinary tract infections, case report

Introduction

Foreign bodies (FBs) in the urinary bladder can pose major diagnostic and treatment challenges.[1] They usually present as persistent or recurrent urinary tract infections which do not respond to antibiotics.[2]

FBs in the urinary bladder may be self-inflicted for autoerotic, psychiatric or therapeutic reasons by the patient. It may also be as a result of migration from adjacent organs or from penetrating trauma.[3-5]

The diagnosis of FB in the bladder involves a detailed clinical history and physical examination with appropriate investigations. Patients usually present with both storage and voiding lower urinary tract symptoms, haematuria, dysuria and chronic pelvic pain.[6]

Plain abdominal X-ray will identify most radio-opaque FBs but ultrasonography will identify both radiopaque and radiolucent FBs in the bladder and is also useful for evaluating the upper tract for any abnormalities.[7] Computer tomography (CT) scan is even more sensitive in identifying FBs in the bladder. However, cystoscopy is the gold standard investigation as it confirms the presence of FB in the bladder, identifies the type and exact location of the FB and can be used in the same setting to retrieve most FBs.[8]

The treatment of FB in the bladder mostly depends on the size, nature and location of the offending object. Small sized FBs can be retrieved at cystoscopy without traumatising the urethra. Bigger FBs which cannot be broken down into smaller fragments are best removed via cystotomy incisions.[9]

We report on two cases of FBs in the urinary bladder which were successfully managed at the Komfo Anokye Teaching Hospital (KATH), in Kumasi, Ghana and review the literature.

Case presentation

Case 1

A 28-year-old male had a left groin hernia repair seven months prior to presentation. Patient experienced the discharge of clear fluid from the incisional wound postoperatively which became profuse any time he passed urine. He required daily wound dressing for three continuous months before the wound finally healed. He did not only have to contend with urinary leakage but also complained of dysuria, frequency and recurrent gross haematuria which persisted despite several antibiotic regimen at the peripheral hospital. He was thus referred to the urology clinic for further management.

An ultrasound scan revealed an echogenic, mobile thread-like structure (3.6 mm in diameter) in the area of the scar with extension into the urinary bladder. His post-void residual urine volume was 41 ml.

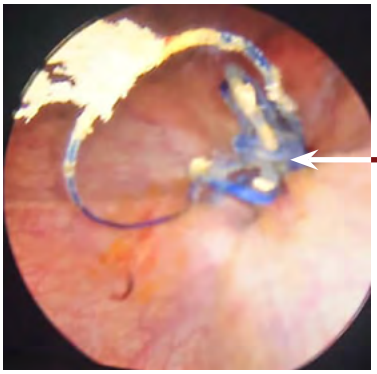

Figure 1: Nylon suture (arrowed) in the bladder at cystoscopy

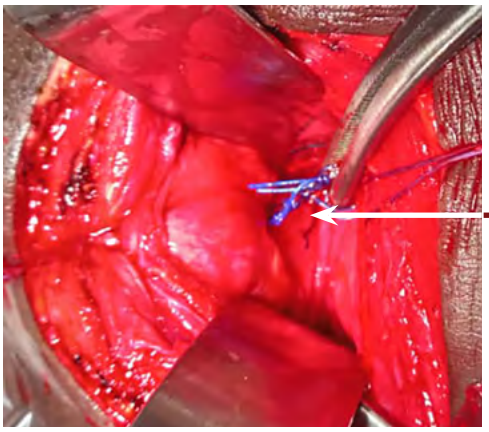

Figure 2: Opened urinary bladder showing the nylon suture material (arrowed) in the bladder

Cystoscopy revealed intravesical extension of the nylon suture material used for the herniorrhaphy which was multiply-knotted and penetrating the left lateral wall of the bladder towards the incisional scar (Figure 1). The suture could not be removed with a grasper at cystoscopy. The suture was seen to tear through the wall anytime we attempted to pull it out. We had to adopt the open removal approach to forestall a vesico-cutaneous fistula from developing again (Figure 2). Patient had an uneventful recovery and his urethral catheter was removed ten days after surgery. He had complete resolution of his symptoms postoperatively.

Case 2

A 53-year-old woman presented to the urology clinic with a one year history of severe lower urinary tract symptoms of frequency, urgency, nocturia, poor urine stream and incomplete bladder emptying. She also experienced recurrent episodes of gross haematuria, dysuria and lower abdominal pains. These symptoms began three months after she underwent a total abdominal hysterectomy at a private hospital. Several visits to her gynaecologist did not resolve her symptoms and she was therefore referred to the urology clinic for further evaluation and management.

Ultrasound evaluation revealed bilateral severe hydronephroureters, a large hyperechoic lesion with posterior acoustic shadowing and thickened bladder walls. She was anaemic (Hb 5.6g/dl) with mild renal insufficiency. She was optimised for surgery. At open cystotomy, a huge piece of gauze with fibrinous exudates was retrieved from the bladder (Figure 3).

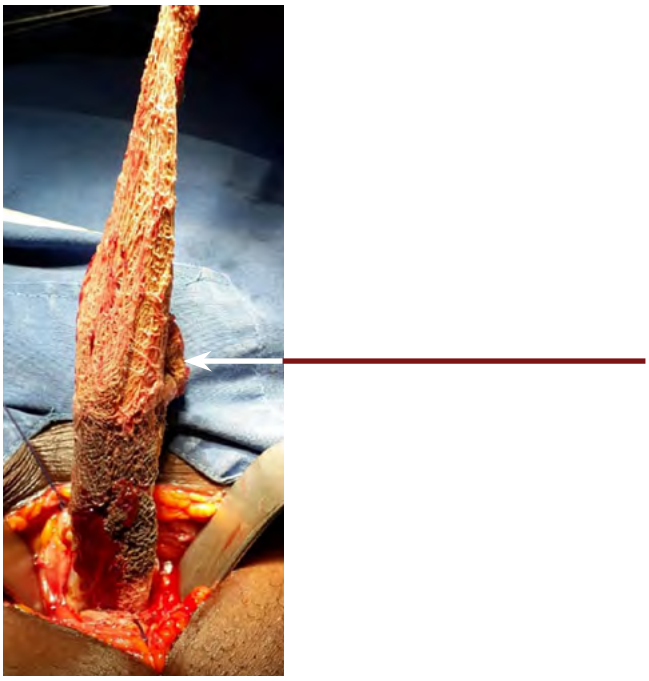

Figure 3: Huge gauze (arrowed) with fibrinous exudates being removed from bladder showing discoloured areas

Patient had a gradual resolution of her symptoms postoperatively and by six months, was free of all symptoms.

Discussion

FBs in the bladder are mostly either self-inflicted or put there accidentally by a surgeon. They have been classified either as migratory, iatrogenic or inserted.[4] Migration of FBs from adjacent organs are mostly iatrogenic or traumatic in origin. A wide variety of objects, including abdominal swabs, gauze, intrauterine contraceptive device (IUCD), bone cement and suture materials, have been reported as FBs in the bladder.[6] Gyasi-Sarpong et al. reported on a case of a calcified IUCD in the urinary bladder which had migrated from the cervix at the Komfo Anokye Teaching Hospital.[2]

There have been reports of gauze and non-absorbable suture materials migrating into the urinary bladder following hernia repairs.[10] Iatrogenic FBs in the urinary bladder are well-known complications of urological procedures.[3] Catheter tips, parts of catheter balloon, bougies, and beaks of resectoscope sheath are some of the reported iatrogenic FBs recovered from the bladder.[11] However, reports of direct unrecognised injury to the urinary bladder with a non-absorbable suture material during hernia repair are rare.

In the first case, the nylon suture material was introduced into the bladder at the time of the surgery leading to the immediate vesico-cutaneous fistula which took up to three months to heal. This complication is very possible in a case of sliding hernia involving the urinary bladder which can pose a major challenge for a novice hernia surgeon.

In the second case, the patient developed symptoms of an FB in the bladder three months after undergoing a total abdominal hysterectomy. Any FB lying in the vicinity of the urinary bladder has the potential to migrate into it.[12] Odoemene and Onuh reported a case of a surgical gauze in the urinary bladder which was attributable to migration from the peritoneal cavity.[13] A piece of gauze inadvertently left in a body cavity following surgery is referred to as gossypiboma.[14] It is derived from the Latin word 'gossypium' meaning textile or cotton and the Swahili word 'boma' which stands for a place of concealment. Other synonyms include textiboma and gauzoma.[15]

The embarrassment, humiliation, job loss and medicolegal issues surrounding gossypibomas engenders underreporting, especially in developing countries, and the true incidence may therefore never be known.[16] It is estimated that a gossypiboma may occur in one out of 1 000–1 500 intra-abdominal operations and one out of 300–1 000 of all operations.[17] The incidence is likely to be higher for long surgeries due to fatigue and loss of concentration by the operating team. However, the following situations have been documented to cause gossypibomas: emergency surgery, change in plan of an operation on the table, high body index, inadequate attention to sponge count and profuse bleeding in which gauze swabs are employed to achieve haemostasis.[18]

Migration into a hollow viscus has been postulated to result from chronic inflammation of its walls from the irritation of the FB leading to erosion and eventual migration into its cavity. This should usually be followed by a fistula which in most instances heals spontaneously due to the high vascularity of the urinary bladder and dense fibrosis caused by the gauze.[4,12]

The aim of management in cases of FBs in the bladder is complete removal with the least possible complications.[12] Cystoscopic removal with or without the use of lithotripsy is the least invasive management option in resource-endowed centres.[11,19] However, open removal also guarantees good success with minimal morbidities in resource-limited centres.[7,13,15]

We performed open removal for the first patient because the suture material was firmly attached beyond the bladder wall and could not be removed with the grasper cystoscopically. In the second case, the large size of the FB on ultrasound with features consistent with a stone made removal at open cystotomy a preferred option.

Both patients had complete resolution of the symptoms after the FBs were removed via the open approach with no complications.

These two cases of iatrogenic FBs in the bladder have serious medicolegal consequences and surgeons need to adopt measures to reduce the occurrence of such cases. Counting of gauze and surgical instruments, systematically inspecting the surgical field before closing up of surgical incisions, tagging surgical gauze and sponge to the patient drapes and detecting bladder injuries and repairing primarily with absorbable sutures could have prevented the development of FBs in the bladder of these patients.

In 2015, The Association of Operating Room Nurses (AORN) in the United States published guidelines for prevention of retained surgical items. The AORN guidelines recommend that counts should be performed at the following time points during the surgical procedure: before the procedure begins (initial count); when new additional items are used during the surgery; before the surgeon closes the body cavity; when the surgeon begins to close the wound; and when the surgeon closes the skin (final count). It is the responsibility of the nurses to count the surgical materials used during the surgical procedure under the direction of the operating surgeon.[20]

Conclusion

FB in the urinary bladder should be considered a differential diagnosis in any patient with persistent or recurrent urinary tract infections following any abdominal/groin surgical procedure. Cystoscopy is the gold standard investigation modality in the evaluation of these patients. Under circumstances where cystoscopic removal is a challenge, open removal via cystostomy is an option and offers favourable outcomes.

Conflict of interest

The authors declare that they have no conflict of interests.

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