



Intravesical gossypiboma mimicking bladder stone: a case report and review of the literature

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ABSTRACT

Gossypiboma means a retained surgical sponge (RSS) or gauze piece, a nightmare for both the surgeon and the patient. Intravesical foreign bodies are rarely encountered in the surgical practice. They are the exception rather than the rule. It is a rare but ubiquitous medical error. It presents only the tip of the iceberg as retained surgical sponge (RSS) is seldom reported due to medico-legal implications. They are usually found in the abdomen and pelvic cavities. Gossypiboma of the urinary bladder poses a diagnostic dilemma to clinicians with significant patient morbidity probably due to its delayed non-specific presentation and inconclusive imaging results. It should be thought of in patients with persistent lower urinary tract symptoms and recurrent urinary tract infections following open bladder or prostate surgical intervention. Radiological imaging plays an important role in the diagnosis and management as it helps to determine the size, shape, and number of foreign bodies as well as the possible complications. Treatment should aim to the removal of the foreign body and avoid complications whether by endoscopic or open approaches. Herein, I present a case of an 85 years old man with longstanding lower urinary tract symptoms who had open prostatectomy a year ago, found to have intravesical retained surgical gauze with encrustation mimicking bladder stone.

KEY WORDS: Gossypiboma, Intravesical, Surgical gauze.

Introduction

A variety of foreign bodies have been reported to be lodged in the urinary bladder and the causes included self-insertion through the urethra or iatrogenic insertions or as complications of surgical procedures (1). Surgical gauze is the most common type of retained foreign body in different body cavities. The condition is sometimes called gossypiboma, derived from the Latin gossypium (cotton) and the Swahili boma (place of concealment) (1-3). Hence gossypiboma denotes a foreign body made of cotton (sponge) that is retained inside the patient's body cavities during surgery (1). Although it is an uncommon condition, it is the dread of every surgeon. It has been reported to occur following surgical procedures in all body cavities including urological operations (1-5). Two usual responses lead to the detection of a retained sponge (gauze). The first type is an exudative inflammatory reaction with the formation of an abscess, usually leads to an early detection and surgical removal. The second type is aseptic and fibrotic reaction to the cotton material and development of a mass of gossypiboma (5).

Intravesical foreign body is a real challenge to the clinicians as it may be due to variety of causes in different age groups (3, 4). Meanwhile, foreign bodies forgotten in the urinary bladder following surgical procedures retained for long duration can be a diagnostic dilemma (4, 5). Presentation in such cases is often delayed and confusing. Pre-operative diagnosis may be difficult due to nonspecific symptoms and inconclusive imaging finding (3, 6). High index of suspicion should be maintained and imaging plays an important role in the diagnosis especially in patients with unexplained longstanding lower urinary tract symptoms.

Case Description

An 85 years old man presented to Mekelle Hospital with a history of recurrent urinary retention of one year and 2 months duration for which a urinary catheter was repeatedly placed. He had undergone an open prostatectomy for symptomatic benign prostate hyperplasia (BPH) a year previously in a regional hospital. During this post-operative course, the patient started to experience persistent lower abdominal pain while he was already on urinary catheter. On the 5th day, the urinary

catheter was removed to try him to void but he subsequently failed and urinary catheter was again reinserted and discharged home. For the unremitting and recurrent complaints the patient was repeatedly seen as an out-patient and treated with various antibiotics for urinary tract infection (UTI) and cystitis with no benefits.

On examination, his vitals were stable and had lower midline surgical scar with a Foley catheter in situ and mild supra-pubic tenderness. A urine analysis exhibited pyurea and hematuria; other baseline hematology, renal functions including serum albumin were within the acceptable standard normal limits. Abdomino-pelvic ultrasound showed bilateral mild hydronephrosis with 5cm hyper echoic bladder mass and pelvic X-ray was in favor of radio-opaque shadow in the bladder area (Fig 1) for which bladder stone was entertained. The patient was admitted and surgical exploration carried out on October 18 / 2022; upon finger inspection a piece of cotton thread (surgical gauze) gossypiboma or textiloma with stone encrustation measuring 16cm x 6cm was removed (Fig 2). The bladder was thick wall,



Fig 1: Intravesical gossypiboma (surgical gauze) mimicking bladder stone on imaging

contracted and infected. Liberal saline irrigation followed by surgical wound closure with catheter in situ was employed. His post-operative recovery was unremarkable with resolved symptoms.



Fig 2: Intravesical gossypiboma (surgical gauze) removed by supra-pubic cystostomy

DISCUSSION

Gossypiboma is also called Textiloma or cottonoid refers to a foreign object such as a mass of cotton matrix or surgical gauze that is left in a body cavity during an operation. Gossypiboma (retained surgical gauze) is rarely seen in clinical practice (1). Intravesical gossypiboma is infrequently reported in the literature (1) probably in part due to the legal implications, setting up a vicious cycle of non-anticipation and miss-diagnosis like in this case. There have also been reports of calcified retained vesical surgical gauze mimicking bladder stones (3, 4) which is in contrast to our case. Unusual objects like surgical gauze which are usually large may cause significant symptoms and these symptoms are usually due to bladder irritation, reduced bladder capacity or related to complication which vary from acute to chronic and include acute cystitis, chronic lower urinary tract symptoms, recurrent unremitting UTIs, urine retention with encrustation of the foreign body which is consistent to the case presented (1-5).

The preoperative diagnosis of retained gauze may be

difficult; especially if radio-opaque marker is not placed as it was in this case (4). The presence of foreign body in the bladder should be considered in the differential for patients who present with recurrent unexplained infections and chronic lower urinary symptoms. Radiologic imaging plays an important role in the identification and management of such cases as it helps to determine the size, shape and number of foreign bodies as well as to anticipate the possible complications. Radiology like KUB (kidney, ureter and bladder) helps detect radio-opaque objects or foreign body with encrustation like in our case. Ultrasonography and computed tomography imaging might help detect radio lucent objects but sometimes could be confusing (6). Consequently intravesical foreign bodies can pose a diagnostic dilemma in the emergency setting but radiological imaging is vital in diagnosis -: however, it may fail to distinguish calcified foreign body from a true bladder calculus as the case presented (6- 8).

Urethrocystoscopy is usually used for confirmation and in some studies has been considered the most accurate method for diagnosing foreign body in the urinary bladder (1, 7). Treatment should aim to the removal of the gossypiboma once identified and avoid complications. Surgery has been the mainstay in the removal of foreign bodies for many years. However, various techniques have been applied for the removal of retained surgical gauze with the help of cystoscopic guidance and open surgery, depending on the clinical presentations and facilities available (7, 8).

Clearly, prevention of this condition is preferable; this can be achieved by a meticulous count of theatre swabs and surgical materials before closing up and thorough exploration of the surgical site at the conclusion of the surgery (9). Although textiles impregnated with radio opaque markers are widely used by surgeons in the developed world, it is not yet widely practiced in our part of the world and thus diagnosis still remains difficult (10-12). Gossypiboma is a surgical mishap which can be avoided if guidelines for operative theatre record keeping are carefully followed.

Conclusion

Intravesical grossypiboma are rare and can mimic a bladder stone. It should be considered in

the differential for patients who present with recurrent unexplained lower urinary tract symptoms. Management strategies vary; however, they are broadly categorized into endoscopic and open removal

RECOMMENDATIONS

A surgical safety protocol such as the WHO (World health organization) check list is a simple and effective method which promotes communication among team members, can be part of the institutional policies to improve safety and patient care and prevent events like gossypiboma

DECLARATION

Ethical clearance and consent to participate

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

List of Abbreviations and Acronyms

BPH:-Benign Prostate Hyperplasia; KUB:-Kidney, Ureter and Bladder; UTI: Urinary Tract Infection,

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Data availability

All data are available on the document

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No competing or conflict of interest

Author contribution

MK design the study, and writing the manuscript

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