

CASE REPORT

Self-Inserted Foreign Body in The Urinary Bladder Following Sounding:
Case Report and Review of the Literature

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ABSTRACT

Foreign bodies (FBs) in the urethra and bladder are a relatively uncommon event. A great variety of FBs have been described most of which were self-inflicted due to autoerotic stimulation, psychiatric disturbances, senility, substance abuse and as a result of iatrogenic causes. We present a case of a married lady with self-inserted eye brow pencil in her urinary bladder due to autoerotic stimulation. Diagnosis was confirmed by imaging studies and urethrocystoscopy and the FB was successfully removed by open cystostomy.

Keywords: Stimulation, Autoerotism, Urethrocystoscopy, Cystostomy, Pencil

INTRODUCTION

A great variety of foreign bodies (FBs) have been described in the urethra and urinary bladder of patients. These foreign bodies can be classified as inserted, migratory, and iatrogenic.¹ No age group is exempt from this

uncommon urologic dilemma.² Over the years, numerous researchers have reported interesting cases of FBs in the urinary bladder and urethra. These wide array of materials include wires, screws, pins, knitting needles (crochet), ball point pens, pencils, batteries,

magnetic balls, thermometers, sticks, wax like objects, flash light covers and ampoules.^{3,4,5,6,7,8,9} Astonishing reports of living things such as snakes and leeches in the urethra and urinary bladder exist.⁴ Other cases are missing intra uterine contraceptive devices (IUCD), pelvic drains, gauze, parts of catheters and surgical devices.⁵ Every urologist occasionally comes across such patients in his/her practice, hence the inclusion of foreign bodies in the genitourinary tract among the list of urologic diseases.

Most investigators observed that the most common aetiology associated with foreign body in the genitourinary tract is sexual or erotic stimulation.^{5,7,9,10,11} Diagnosis could be challenging when patients choose to ignore the insertion due to the embarrassment and humiliation that characterizes this problem. They often tend to avoid or delay seeking immediate medical assistance.^{5,6,7,8,9,10}

The clinical presentation ranges from asymptomatic to non-specific symptoms and to features of cystitis.^{6,7,11} Complications may arise and could be life threatening and fatal.^{12,13,,14,15} Diagnosis is usually confirmed by radiological investigations and urethrocytostcopy.^{2,9,10,} The aim of management is to provide complete extraction, that should be planned according to the nature of the foreign body ensuring minimal trauma to the bladder and urethra.^{6,16} The first choice of therapy is endoscopic removal but this depends on a number of factors related to the object characteristics, age of the patient, availability of equipment and expertise. Open surgical retrieval is considered a safe alternative if endoscopic methods fail or are not feasible.^{1,2,3,7,17}

CASE REPORT

A 48-year-old married woman was referred to the urology clinic of University of Abuja Teaching Hospital Gwagwalada, Abuja with a 22-hour history of a missing eye brow pencil during sounding as an act of masturbation following unsatisfactory sexual intercourse with her spouse. She complained of pain on micturition, urinary frequency, intermittent painful haematuria and lower abdominal discomfort. There was no fever and no vaginal bleeding or discharge. She had no history of mental illness and was in apparent good health. Her last menstrual period was 2 weeks prior to presentation. She had given birth thrice in the past with one normal vaginal delivery and two caesarian sections and all her children are healthy.

Physical examination revealed an anxious woman, with a pulse rate of 95 beats per minute and blood pressure of 125/85mmHg. The abdomen was not distended and there was a midline infra umbilical surgical scar with mild supra pubic tenderness. Vaginal examination was unremarkable and other systems were essentially normal.

Figure 1. Pelvic Ultrasound scan showing foreign body in the urinary bladder

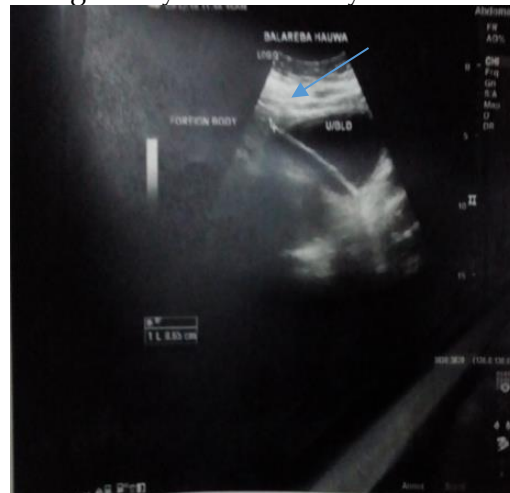


Figure 2. Plain Pelvic Radiograph with arrow pointing to the foreign body in the urinary bladder



Figure 3. Open Cystostomy with eye brow pencil in the urinary bladder



Figure 4. Retrieved Eye brow pencil



Routine urine analysis revealed microscopic haematuria (++) , proteinuria (+), nitrite (+)

and leucocytes (+), but urine culture was negative. Her complete blood count, serum electrolytes, urea and creatinine were within normal limits. Having volunteered the history of a missing eye pencil during masturbation, the suspicion of a foreign body in the genitourinary tract was strongly considered. On sonography, an abnormal hyper-dense rod-like object measuring 10cm was obvious within the urinary bladder (Figure 1), and plain pelvic radiograph revealed a radio-opaque rod like object about 10cm in length (Figure 2). She was placed on analgesia and antibiotics.

Under subarachnoid block anesthesia, cystoscopy was performed and an eye brow pencil with the sharp end abutting the bladder mucosa was visualized. Attempts at its removal using a stone removing forceps during urethrocystoscopy failed due to potential urethral tear from the open jaws of the forceps upon grasping the pencil. Other challenges encountered were the high mobility of the pencil within the fluid-filled bladder and difficulty in aligning its longitudinal axis with the internal meatal opening. To avoid the risk of urethral injury, open suprapubic cystostomy via a midline incision on the bladder was done (Figure 3). An eyebrow pencil 10cm in length (Figure 4) was seen and removed; and the bladder closed in 2 layers using non absorbable polyglactin (vicryl 0) suture. The skin was closed using interrupted nylon 2/0 after excising the previous lower abdominal surgical scar.

The post operation period was unremarkable and she was discharged home on the third day with a retained urethral catheter for continuous bladder drainage. The catheter was removed on the 7th post-operative day at

the outpatient clinic. While on admission she had psychiatric evaluation by a mental physician and no psychiatric problem was detected. At 3 months follow up visit, she had no complaints and a pelvic ultrasound carried out was normal.

DISCUSSION

Documented cases self-inflicted foreign bodies in the urinary bladder and urethra have been on the rise lately. There are however, few reports on foreign bodies in the genitourinary tract emanating from sub-Saharan Africa when compared to the rest of the world.^{9,18,19,20} A review of the literature on this subject revealed that a wide variety of substances has been found in the urethra and urinary bladder of patients.^{1,2,3,7,11,14,17,21,22,23,24,25} More cases of urethral and intra-vesical FBs are seen in men than in women with a ratio of 1.7:1.^{2,6,7} This was however not the case in Pakistan where in a series of 20 patients, Mannan *et al.* noted a higher occurrence of urethral insertion and intra-vesical foreign bodies in women. They attributed this to the shorter nature of the female urethra and the ease with which objects could migrate into the urinary bladder.^{10,20} The mean age of the 20 patients in their study was 35.8 ± 20 years.¹⁰ It is understandable that this falls within the active sexual age group. Nevertheless, all age groups including children have been implicated in self-inflicted foreign bodies of the bladder and urethra.²

Our patient resorted to using an eye brow pencil to stimulate herself via the urethra following unsatisfactory sexual intercourse with her husband and she accidentally lost the eye brow pencil into the bladder. This could be a form of urethralism where a person derives sexual stimulation of the urethra by the insertion of foreign objects.⁶

In one of the largest series of over 800 cases, Opheven *et al.* noted that the most common motive for self-insertion of a foreign body into the urethra and urinary bladder is for autoerotic and sexual gratification especially during masturbation and sounding.^{5,9,13,16,25} Psychiatric disorders, intoxication, attempt to procure abortion or prevent conception and curiosity in children are other reasons for this behavior.^{2,26,27}

Similar to our case, autoeroticism and sexual gratification have been widely reported in literature as the most common reasons for self-insertion of FB into the urethra during masturbation.^{1,7,16,20,25} Often times the patients have psychiatric problems even though in our patient there was no such documentation following a psychiatric consultation.¹¹ Even though controversial, recommending psychiatric consultations in all patients will help in unraveling an underlying psychiatric pathology and also reduce the chances of recurrence. Hence many authors advocate a psychiatric evaluation of all these patients. However, many of these patients have turned out to be psychologically normal.⁷

Only few authors have documented iatrogenic reasons as being the commonest reason for self-inflicted intra-vesical FB.^{1,10} In children the likely reason for FB insertion is inquisitiveness.²⁵

FB may enter the bladder by migration during masturbation, iatrogenic or migration from surrounding structures. The transurethral approach of introduction of FB accounts for 60% of cases whereas the trans-bladder approach is reported in 30% of cases. In greater than 80% of FBs inserted through the transurethral route, sexual gratification was the reason, whereas in all the cases of trans-

bladder migration iatrogenic causes were implicated.^{1,2,5,6,8,9,18,19,23}

It is commendable that our patient presented to the hospital early and volunteered the history of inserting a foreign body through her urethra by herself. The reason for the early presentation of our patient was not clear but the fact that she had all her previous obstetric experiences successfully in the same facility may have given her confidence to seek for help in the hospital. This is contrary to numerous reports where delay in presentation is the order of the day as patients are embarrassed and feel humiliated to seek medical help.^{7,8}

They tend to present to the hospital only when complications have set in.² These complications caused by FB include repeated urinary tract infection, bladder perforation, squamous cell carcinoma of the bladder, vesicovaginal fistula (VVF), calcification of the foreign body, stone formation, sepsis, upper tract obstruction and renal failure.^{8,13,14,18} Cury *et al.* have reported an interesting but rare complication of retroperitoneal migration of a self-inserted ball point pen via the urethra.²¹

Psychoanalytical theories have been postulated to account for the self-infliction of objects for sexual gratification. Kenny's theory states that "the initiating event is an accidentally discovered pleasurable stimulation of the urethra which is followed by repetition of this action using objects of unknown danger driven by a particular psychological predisposition to sexual gratification". Another theory by Wise notes that "urethral manipulation is a paraphilia combining sadomasochistic and fetishist elements where the orgasm of the individual

depends on the presence of the fetish." His understanding is that it depicts a regression to a urethral stage of eroticism due to a strong libido or an unpleasant life event.^{16,26}

Our patient presented with complaints of urinary frequency, dysuria and hematuria which are the commonest symptoms of intra-vesical FB and was consistent with the findings of other researchers.^{1,2,10}

Radiological investigation tools were instrumental in making a correct diagnosis and in planning treatment for our patient. Plain abdominal radiographs reveal radiopaque FB and together with ultrasonography and urethrocystoscopy, these would suffice in making a diagnosis. Intravenous urography (IVU) though rarely required, and cystogram may be indicated in cases of radiolucent objects.^{2,7} Occasionally it is also necessary to have a computerized tomography scan (CT) and magnetic resonance imaging.²¹

The definitive treatment of intra-vesical FB involves their removal by either cystoscopy or open surgery.² Mannan *et al.* were able to treat 85% of their patients by endoscopic techniques and only 15% required cystolithotomy.¹⁰

The goal of management should be to provide complete removal of the FB. This should be guided by the nature of the FB and must ensure minimal trauma to the bladder and urethra.^{6,16} The best method for removal of the FB depends largely on their nature, location, patient's size, age as well as surgical expertise and the availability of equipment.^{1,2,3,7,17} We attempted transurethral extraction of the eyebrow pencil using a *Karl Storz* stone forceps at cystoscopy but this failed due to

some challenges encountered intra-operatively. The risk of urethral tear from the open jaws of the stone punch forceps upon grasping the pencil and the difficulty in aligning the pencil in the same axis as the urethra were the difficulties we encountered. A late complication of urethral stricture following endoscopic removal of FB could arise if iatrogenic urethral injury is inflicted. There are reports where the transurethral approach was used successfully with more sophisticated endo-urology equipment in removing similar FBs.

Challenges encountered in a bid to remove intra-vesical FB endoscopically are not new and some investigators have resorted to the use of *Amplatz* renal dilators to protect the urethra from damage.¹ Grasping forceps, snares and retrieval baskets are amongst other endoscopic instruments that have been employed in removing intravesical FBs. There are several modifications of these instruments developed for removing FBs.⁷ Even Nephroscopes have been used trans-urethrally to remove FBs.⁷ Other investigators have used specially designed magnetic retrievers to remove metallic FBs such as hair pins.⁷

Where endoscopic techniques are unsuitable or unsuccessful like in our case, open surgical removal is needed. A suprapubic cystostomy is the procedure of choice where endoscopic maneuvers failed. Solvents such as xylol, benzene and kerosene were used to try and dissolve paraffin and wax like objects such as candles found in the bladder. However, since these solvents are known to be carcinogenic their use is no longer advisable. Some investigators documented the use of CO₂ insufflation cystoscopy of the bladder and removal of wax-like FBs which have a

tendency to float in fluid filled bladder. In order to cut FB such as weed trimmer lines, holmium-yttrium-aluminum garnet (Ho-YAG) laser has been utilized.²⁸

Percutaneous instruments have been used in removing long and stiff intra-vesical FBs as well as fragile FBs such as lignocaine ampoule from the bladder. There are reports of performing intra-vesical laparoscopy to facilitate removal of certain FB. One such report highlighted the role of laparoscopy to untie a complete knot of electric wire before its removal.²⁹

CONCLUSION

The report of urethral and bladder FBs is increasing, although uncommon. Autoerotism is an established common etiology and the clinical features are usually those of cystitis. A detailed history, clinical examination and radiological investigations are necessary to confirm the diagnosis and as well as determine the exact size, number and nature of the foreign object.

The best method for removal of the foreign objects depends greatly on their nature, location, size, age of patient as well as surgical expertise and availability of equipment. However, from the literature, it is clear that minimally-invasive endoscopic techniques are used in extricating most foreign bodies. Open surgical removal is usually a safe alternative for those in whom minimally-invasive techniques are unsuitable or have failed. We successfully used open cystostomy after a failed endoscopic attempt to remove an eye brow pencil considering the limitations we had with endoscopic method of retrieval.

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