

Original Article

Foreign bodies in the urinary bladder

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ABSTRACT

Objective

To determine the cause, clinical presentation and the most suitable method of treatment for retrieving foreign bodies from urinary bladder.

Patients and Methods

This descriptive study was conducted at Department of Nephro-Urology Chandka Medical College Hospital (CMCH), Larkana. Patients were divided into two groups on the basis of having known or unknown foreign bodies in urinary bladder. In group-1 the diagnosis of presence of foreign body was confirmed with the help of investigations, whereas in group-2 the foreign bodies were discovered incidentally either during cystoscopy or in the core of vesical calculus while doing intra-corporeal cystolithotripsy procedure. Patients presented with dysuria, frequency, suprapubic pain and hematuria. The foreign bodies with or without stone were approached for treatment via endoscopic or open surgical procedure.

Results

34 cases having foreign body in urinary bladder were treated from April, 1998 to October, 2008. Group-I comprised of six (17.64%) patients, whereas group-II consisted of 28(82.3%) cases. The known foreign bodies included bullet (01, 2.94%), piece of metallic urethral dilator (01, 2.94%) and piece of Foleys catheter (04, 11.76%). The unknown foreign bodies were broken piece of balloon of Foleys catheter (13. 38.2%), suture material (10, 29.4%), thermometer (01, 2.94%), gauze piece (02, 5.88%), and IUCD (02, 5.88%). All the foreign bodies were removed by endoscopic approach except two (5.88%), who required open surgery.

Conclusion

Unusual foreign bodies like bullet, broken piece of metallic urethral dilator and thermometer were seen. Majority were retrieved by endoscopic method.

Key Words

Foreign body, urinary bladder, hematuria.

INTRODUCTION

Foreign body (FB) in the urinary bladder can be iatrogenic surgical complication and most common one is the abdominal sponge called Gossypiboma, with incidence of one per 1000-1500 laparotomies.¹ The urethral foreign bodies have been reported since the earliest days of the medical literature.² The types of foreign bodies have been classified as inserted, migratory and iatrogenic.³ Self-insertion of urethral FB is a common and objects are usually inserted via urethra for the purpose of eroticism, inquisitiveness and miscarriage or due to psychiatric illness, senility or alcoholism.⁴⁻⁶ Migration of intrauterine contraceptive device (IUCD) from the uterus to the pelvic cavity and sometimes into the urinary bladder has been reported.⁷ Although migrated un-absorbable suture materials from previous pelvic surgery are not only rarely reported complications,^{8,9} more recently, migration of surgical instrument from peritoneal cavity through the urinary bladder into the vagina and surgical sponge into urinary bladder six years after an inguinal hernioplasty was reported.^{10,11} Iatrogenic FB in urinary bladder are well known complications^{12,13} because of increased use or placement of artificial material within the urinary system. Over the last 10 years we have also come across many different types of foreign bodies in urinary bladder. The aim of our study was to review its exact etiology, clinical presentation, most suitable method of treatment for retrieving FB in urinary bladder.

PATIENTS AND METHODS

This descriptive study was conducted at department of Nephro-urology, Chandka Medical College Teaching Hospital, Larkana Pakistan. Those patients diagnosed as having FB in urinary bladder during the period from April, 1998 to October, 2008 were included in this study. We classified these in two groups. Group-1 included those who had known FB in urinary bladder and it was discovered during investigations. Group-2 included unknown cases in which FB was found either during cystoscopy or incidentally in the core of urinary bladder stone during the intra-corporeal cystolithotripsy. All FB were removed successfully by endoscopically except two, who underwent open surgery. The instruments used were conventional cystoscope and resectoscope, nephroscope, and lithotrite punch. The accessory instruments used as retriever were Ellick evacuator, FB forcep, dormia basket and tri-radiator stone grasping forcep.

Small size FB like knotted calcified stitch and piece of balloon of Foleys catheter found inside the stone were easily evacuated through resectoscope sheath. Bullet was retrieved with tri-radiator grasping forcep. The gauze piece, one in old man was first caught by stone punch forcep from one end and then was pulled out through the sheath and second one in child, was removed by open surgical method. Those unknown cases in which FB was found incidentally during cystoscopy or in the core of stone during the intra-corporeal cystolithotripsy/litholapaxy were removed in the same sitting. At the end of procedure, suitable size Foley's catheter was left in all cases.

RESULTS

Our study comprises of 34 cases having foreign body in urinary bladder. Among these, 28(82.3%) were male and six(17.6%) were females. The age ranged from 2 to 60 years (mean 28 years). All the patients presented with variable lower urinary tract symptoms (Table 1).

Table 1. Clinical presentation (n=34)		
SYMPTOMS	NO OF CASES	PERCENTAGE
Dysuria	34	100
Frequency	25	73
Urgency	7	20
Pyuria	6	17
Suprapubic pain	12	35
Haematuria	1	03

The group-I comprised of 06(17.64%) patients who had known foreign bodies in their urinary bladder, whereas group-II consisted of 28(82.35%) cases of unknown foreign bodies and presented with superimposed vesical calculus.



Fig No1: Piece of Metallic Urethral Dilator

Fig No2: Gauze Pieces

The known foreign bodies included bullet in one (2.94%), piece of metallic urethral dilator in one (2.94%) (Fig. 1) and piece of broken Foleys catheter in four (11.76%) cases (Fig. 3).The unknown foreign bodies were gauze pieces in two (5.88%) (Fig: 2), broken pieces of balloon of Foleys catheters in 13(38.2%) (Fig:4), suture material in 10(29.4%) (Fig5), thermometer in one (2.94%)(Fig:6), and IUCD in two (5.88%) cases.



Fig 3: Piece of Foleys Catheter



Fig 4: Pieces of Balloon of Foleys Catheter

Foreign bodies (with or without stone) were removed successfully in all cases by endoscopic approach except 02(5.88%) cases who underwent open surgery. Hospital stay was one day in all cases except two cases that underwent open surgery and stayed for a 04-07 days. During the follow-up transient voiding disturbance was observed in 8 (23.5%) cases, which was resolved with the conservative treatment and reassurance.



Fig 5: Pieces of Chromic Catgut



Fig 6: Thermometer

DISCUSSION

Whenever possible, the endoscopic removal of bladder FB is considered as the treatment of choice^{14,15} but sometimes cystostomy and laparoscopic procedure or multidisciplinary approach is required for large objects.^{16,17} In our series, we removed all FB successfully by endourological method except two cases. In most of the cases the FB were found incidentally in the core of vesical calculus during intra-corporeal cystolithotripsy/litholapaxy procedure. FB acts as the nidus for the formation of stone and in fact, has frequently been described.¹⁸ Only two decade ago these FB were missed; thanks to modern lithotripters which helped us discover these inside the stone. These were usually smaller in size like knotted calcified stitch or suture material and broken piece of balloon of catheter and did not pose any problem during treatment and were easily removed with Alligator or with foreign body forcep along with stone fragments. These patients had previous history of surgery and catheterization.

Surgical forcep,¹⁹ cloth material,¹² needle,²⁰ and IUD²¹ and calcium encrusted FB including pencils, ballpoint pens and its refills, paper clips and hair pins²² have been recovered from bladder. In our series, obviously looking difficult objects like bullet, gauze pieces, piece of broken metallic dilator in child and thermometer were unique. To our knowledge, these FB may be first reported cases in Pakistan. Preoperatively, we were not sure about endoscopic success and we were prepared for possible conversion into open procedure. We have used nephroscope instead of cystoscope for bullet retrieval because of rather larger working channel.

One of our two interesting cases had broken piece of metallic urethral dilator in urinary bladder and was a child of nine years age and other was a young unmarried girl whom had thermometer with vesical calculus. In former case, there had history of urethral dilatation one day earlier. The proximal seven cm end of metallic urethral dilator of had been broken during the attempt of urethral dilatation by his family physician. X-ray KUB confirmed its presence in urinary bladder. This linear FB was easily removed with dormia basket. Recently, it was also used for extraction of a large metal screw.²³ In our other case, the placement of thermometer may have been due to sexual curiosity, however, she denied its insertion by herself. On further query, she at last confessed that rather it was inserted by her female cousin somehow in childhood. Although endoscopic retrieval of thermometer has been reported,²⁴ we retrieved it by open surgical cystolithotomy because we did not know its presence as it was encrusted by large vesical calculus.

We dealt majority (94%) of FB in urinary bladder endoscopically gauze pieces in a child and thermometer in young lady. From our results and worldwide reports of distinguished scholars about safe removal of F.B from lower urinary tract via the endoscopic approach, we can say confidently that endoscopic method is the most appropriate method of treatment.²⁵ The clinicians should expect to encounter foreign bodies during their career. Therefore, it may require several modifications of endoscopic instrument and innovation of a device that is appropriate to retrieve foreign bodies of different sizes and shape.

CONCLUSION

Commonest foreign bodies we found in the urinary bladder were broken pieces of balloon of Foleys catheters and suture material. Unusual FB as bullet, broken piece of metallic dilator and thermometer were also seen. With slight endeavor, these were removed safely endoscopically. The recurrent or chronic unexplained lower urinary tract symptoms after catheterization or some surgical and endoscopic procedures should raise a high index of suspicion of presence of FB in the urinary bladder. An interesting difference was noted that the commonest cause of FB in our series was iatrogenic in contrast to erotic or sexual reasons, as in western countries.

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