

Foreign Bodies in the Urinary Bladder! A Single-Center Experience in Endoscopic Management

Muhammad Khalid, Muhammad Asif, Usman Aslam, Muhammad Hammad Hassan, Bashir Ahmed and Ehtisham Ali

ABSTRACT

Objective: This study was conducted to characterize the nature of foreign bodies, presentations, modes of insertion, diagnosis, and their management modalities.

Study Design: Observational / analytical study

Place and Duration of Study: This study was conducted at the Department of Urology, D.G. Khan Medical College, Dera Ghazi Khan from January 2018 to September 2022.

Materials and Methods: 41 patients with foreign bodies in their urinary bladder were treated at our centre. The records of these patients were reviewed and analysed for their symptoms, mode of insertion, diagnosis, and management.

Results: A total of 41 foreign bodies were recovered from the urinary bladders during the study period. These included Ribbon gauze, foleys balloon with stones, jj stents, contraceptive devices, prolene stitches with hanging stones, candle, wooden pieces, hairpin and electric wire. The common presenting features were painful micturition and suprapubic pain. The diagnosis was established radiologically in most of the cases. The circumstances of insertion were variable; iatrogenic in 35(85.36 percent) cases, sexual stimulation in 4 (9.75 percent), and physical torture in one (2.0 percent). 39 (95.12 percent) foreign bodies were recovered endoscopically, and cystolithotomy was required in 2 (4.87 percent) patients.

Conclusion: Endoscopic retrieval is an excellent management modality for the treatment of foreign body in urinary bladder, being a rare instance of foreign body in urinary bladder usually it's diagnosis is overlooked but patients not responding to adequate medical treatment for LUTS, should be suspected for foreign body in urinary bladder

Key Words: Foreign bodies, endoscopy, urinary bladder, DJ stents, contraceptive devices, iatrogenic, sexual stimulation.

Citation of article: Khalid M, Asif M, Aslam U, Hassan MI, Ahmed B, Ali E. Foreign Bodies in the Urinary Bladder! A Single-Center Experience in Endoscopic Management. Med Forum 2023;34(4):25-29.

INTRODUCTION

A foreign body is any object in a region it is not meant to be, where it can cause discomfort or injury by its mere presence if prompt medical attention is not sought. Foreign bodies are rarely found in genitourinary system and pose a challenge to the practitioner. The usual causes for insertion of foreign bodies in the genitourinary system include sexual gratification, autoerotic stimulation, or during invasive procedures¹. Every urologist occasionally comes across such patients in his practice like DJ stents with calculi, suture needles

with calculi, pieces of Foleys balloons, propylene sutures with calculi, hair pins and nails.²⁻³

Foreign bodies can enter the urinary bladder through the iatrogenic mechanism, migration from adjacent organs, via the urethra for erotism or traumatic route^{4,5}. Most of the patients having history of self-insertion were reluctant to tell about that, especially those who have inserted the objects for sexual gratification. Many patients do not seek advice for months due to embarrassment. Commonly, patients having foreign bodies in bladder presents with frequency of micturition, painful micturition, suprapubic discomfort, and hematuria⁶. The physical examination is almost always unremarkable, urine microscopy usually reveals pus cells and red blood cells. Radiopaque objects can easily be seen on radiographs, while others are identified by the sonologist. Cystoscopy is rarely required for diagnosis. Most of the inserted objects can be retrieved via endoscopy using the latest available equipment and open surgery is usually not required⁷. As variety of objects have been retained into urinary bladder and those presented with variable symptoms to doctors, ultimately become a challenge for urologists

Department of Urology, D.G. Khan Medical College, Dera Ghazi Khan.

Correspondence: Dr. Usman Aslam, House officer of Urology, D.G. Khan Medical College, Dera Ghazi Khan.
Contact No: 0336-4969419
Email: usman.aslam.ghazian@gmail.com

Received: December, 2022
Accepted: January, 2023
Printed: April, 2023

though it is not a fatal disease but as it can lead to different presentation that cannot be ignored.⁸

MATERIALS AND METHODS

Observational (analytical) study was conducted at Department of Urology, Teaching Hospital D.G.Khan from January, 2018 to September, 2022. The study has been approved by ethical review board of D.G.Khan Medical College, Dera Ghazi Khan. A total number of 41 patients treated by endoscopy for intravesical foreign bodies were included in this study. Our patients belongs to both sexes with age range 18-45 years those treated for management of foreign bodies. Our 21 patients presented with painful micturition and suprapubic pain, 4 patients with pelvic pain, 4 patients with frequency of micturition, 3 patients with retention of urine, 2 patients presented voluntarily without any symptoms just to avoid the consequences of foreign bodies and 7 patients were diagnosed incidentally. Their records were analyzed to determine the nature of foreign bodies, presentation, mode of insertion and their management, it was found that these patients were admitted through OPD and after complete pre-operative assessment/work up were treated by endoscopy. In 39 patients endoscopic management was successful while in 2 cases when endoscopy failed to help, those were converted to conventional surgery. 32 patients were operated under spinal anesthesia while remaining 9 patients were operated under general anesthesia. Among the patients those were operated with endoscopy, five of them required dual procedures. Three of them required PCNL and Litholapexy. Two of them required ESWL for renal stones on proximal end of DJ stents followed by Litholapexy. 1 month follow up on weekly basis for patients was considered.

Presenting symptoms	No. of cases
Painful micturition & Suprapubic Pain	21
Pelvic Pain	04
Retention of urine	03
Before symptoms(voluntarily)	02
Frequency of micturition	04
Incidentally diagnosed	07

RESULTS

The mean age of the patients was 25.2 ± 10.0 years. The nature of the foreign bodies in the urinary bladder, modes of insertion and management are recorded in Tables I and II. Dysuria and haematuria were found to be common symptoms among the patients. The diagnosis was made by plain radiography in 35(85.36%) patients with radiopaque foreign bodies. Six (14.63%) patients required ultrasonography for diagnosis.

The circumstances of insertion were iatrogenic in 35 patients and per urethral insertion was found in 6 patients.

The foreign bodies were retrieved via endoscopy in 36 (87.8%) patients without any complications. 39 patients with foreign bodies were managed amicably with endoscopy while in 2 patients were converted to open vesicolithotomy after failure of endoscopic attempts.

Table No.1: Iatrogenic foreign bodies found in our study (n =35).

Type of foreign body	Mode of removal	No. of cases
Ribbon gauze	Endoscopy	03
Foleys balloon with stone	Endoscopy	01
DJ stents	Endoscopy	23
Contraceptive devices	Endoscopy	06
Prolene stitches with hanging stone	Endoscopy converted to open	02



Figure No. 1: Photograph shows the JJ stent with a calculus after removal

Table No.2: Foreign bodies via urethral insertion found in our study (n = 6)

Type of foreign body	Mode of removal	No. of Cases
Candle	Endoscopy	1
Wooden pieces	Endoscopy converted to open	2
Hair pin	Endoscopy converted to open	2
Electric wire	Endoscopy	1



Figure No.2: Photograph shows the copper



Figure No.4: Removed stones from DJ Stent

Table No.3: Gender distribution of foreign bodies in our study (n = 41)

Type of foreign bodies	Males	Females
Ribbon gauze	03	00
Foleys balloon with stone	00	01
DJ Stent	11	12
Contraception devices(IUCDs)	00	06
Prolene stitches with hanging stone	00	02
Candle	00	01
Wooden pieces	01	01
Hair pins	00	02
Electric wire	01	00
Total	16	25



Figure No.3: Plain radiograph shows DJ Stent with stones at proximal and distal ends



Figure No. 5: DJ Stent removed with calculi on Both ends

DISCUSSION

Foreign bodies may reach the urinary bladder by one of the following modes: iatrogenic, perforation/ migration from adjacent organs or by per urethral route. The incidence of iatrogenic foreign bodies in the urinary bladder as a result of the large number of surgical procedures being conducted all over the world in urology where disposables are used frequently that are DJ stents and foleys catheters. The tips of Foley catheters and pieces of balloon have been found in the bladder on many occasions.⁹



Figure No. 6. DJ Stent removed with stone on distal part

In our study, piece of Foley catheter was found in one patient. Forgotten urological stents may present with encrustations or stone formation, making their removal difficult. (Fig. 1,3,4,5,6). Many iatrogenic foreign bodies have also been reported in our study, following open bladder surgery. These include ribbon gauze,³ and sutures with stones². In our study, most of the cases (87.80%) were iatrogenic in nature. Foreign bodies can perforate the urinary bladder from the GI tract or female genital tract. Although IUCDs are widely used, only five cases were reported in which they perforated the bladder. They can perforate either at the time of insertion or by slow migration across the bladder and uterine walls.¹⁰ Most of the perforations take place at the time of insertion and go unnoticed. IUCD migration into the urinary bladder that became symptomatic after many years of insertion.¹¹ Encrustations and stone formation over a migrated IUCD are common. However, the duration is variable. In our study, we recovered three IUCDs with stones by endoscopy from the urinary bladder. (Fig.2) Urethral insertion is encountered in both male and female patients; however, it is more common in the latter due to the presence of a short urethra. A variety of objects can be introduced via the urethral route into the bladder. Some of the common aetiologies for urethral insertion include psychiatric disorder, autoerotic stimulation and sexual gratification.¹² In our study, we retrieved a large candle and a hair pin from two young girls, which had been inserted for sexual gratification. It is rare, however, for foreign bodies to be forcibly pushed into the urethra by another person. In our study, one patient presented with the forced electrical cable insertion by a foe. Similar cases have been reported by others. In rare instances, living foreign bodies can also reach the urinary bladder by the urethral route. Suicidal attempts have also been reported among mentally retarded persons through the self-insertion of foreign bodies into the urinary bladder.

These patients require psychiatric evaluation. Self-insertion among children is rare.

In rare cases, foreign bodies can erode the GIT tract and produce enterovesical fistulae. Many such cases have been reported in the literature. These include a chicken bone,¹³ pen cap¹⁴ thermometer¹⁵ and a piece of gauze.¹⁶ Foreign bodies may sometimes reach the urinary bladder by the traumatic route. These include bullets, pieces of shells and splinters. Bullets are able to stay in the bladder without significant symptoms being reported.¹⁷ While in our study most of the foreign bodies in the urinary bladder can be successfully pulled out with endoscopic techniques using grasping forceps, stone punch, glass syringe, basket or cutting loop. Smaller foreign bodies can be retrieved intact, whereas larger ones require fragmentation. In our study, a stone punch was used to crush the foreign bodies or their associated calculi on six occasions. A resectoscope loop may sometimes be used to remove foreign bodies from the urinary bladder. Care must be taken to avoid bladder mucosal injury during removal. Endoscopic removal is associated with minimal morbidity and hospital stay. With the advent of a variety of modern endoscopic instruments, open surgery is rarely required. Since laparoscopy has become a popular technique, innovations have been made to use its instruments in the urinary bladder. Recently, some studies have showed the use of laparoscopic techniques to retrieve foreign bodies from the urinary bladder but we didn't use this modality in our department.¹⁸

CONCLUSION

Endoscopic retrieval is an excellent management modality for the treatment of foreign body in urinary bladder, being a rare instance of foreign body in urinary bladder usually it's diagnosis is overlooked but patients not responding to adequate medical treatment for LUTS, should be suspected for foreign body in urinary bladder.

Author's Contribution:

Concept & Design of Study: Muhammad Khalid

Drafting: Muhammad Asif,
Usman Aslam

Data Analysis: Muhammad Hammad
Hassan, Bashir Ahmed,
Ehtisham Ali

Revisiting Critically: Muhammad Khalid,
Muhammad Asif

Final Approval of version: Muhammad Khalid

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Bansal A, et al. Unusual intravesical foreign body in young female migrated from vagina due to autoerotism. *Int Braz J Urol* 2017;43:556-560.

2. Sungur M, et al. Bladder stone secondary to prolene suture after gynecologic surgery. *Urologiia* (Moscow, Russia: 1999) 2018;(5):92-93.
3. Habibullah T, Rahman MS. Unusual Foreign Bodies in the Lower Genitourinary Tract. *J Enam Med Coll* 2018; 8(2):105-107.
4. Bansal A, et al. Foreign bodies in the urinary bladder and their management: a single-centre experience from North India. *Int Neurourol J* 2016;20(3):260-269.
5. Mak CW, et al. Per urethral insertion of foreign body for erotism. *Hong Kong Med J* 2019;25(4):320-2.
6. Mannan A, et al. Foreign bodies in the urinary bladder and their management: a Pakistani experience. *Singapore Med J* 2011;52(1):24.
7. Malik M, et al. Endoscopic management of foreign body in urethra and urinary bladder. *Nephro-Urol Monthly* 2009;1(1):56-60.
8. Ahmed MHS, et al. Foreign body in urinary bladder: our experience and review of literature. *Int Surg J* 2019; 6(12): 4327-4331.
9. Li Y, et al. Rare foreign body in bladder: a case report. *Medicine* 2018;97(17):e0519.
10. Jain N, et al. Lost IUCD since 14 years: Found in urinary bladder. *J Gynecol Res* 2019;5(1):101.
11. Srirambhatla A, Narayanam S, Kannepalli PL. Silent perforation and migration of IUCD: A diagnostic challenge in patients with pain abdomen: A case report. *Ind J Case Reports* 2021;330-332.
12. Khoo J, Wu GT, Yeung BK. Re: Per urethral insertion of foreign body for erotism. *Hong Kong Med J* 2019;25(6):498.
13. Jones J, Aboumarzouk OM. Fistulae and Sinuses. *Blandy's Urol* 2019:499-508.
14. Demilow TL, et al. Pen cap in the urinary bladder: A rare type foreign body in the urinary bladder in a 16 years old female. *GSC Advanced Research Reviews* 2021;6(3):175-180.
15. Yang G, et al. Transurethral cystoscopic removal foreign body (thermometer) with a stone extractor: A case. *Urology Case Reports* 2019; 26:100959.
16. Enebe J, et al. Gossypiboma: Spontaneous trans-urethral migration of a forgotten surgical gauze sponge 5 years post hysterectomy in grand multiparous post-menopausal woman. *Int J Surg Case Reports* 2020;71:168-171.
17. Marantidis J, Biggs G. Migrated bullet in the bladder presenting 18 years after a gunshot wound. *Urol Case Reports* 2020;28: 101016.
18. Binh NT, et al. Use of Mini-Percutaneous Nephrolithotomy Technique to Remove Extra-Peritoneal Foreign Bodies. *Am J Case Reports* 2021;22:e929731-1.