



Foreign Bodies in the Female Urinary Bladder: 20-Year Experience in Ramathibodi Hospital

Wachira Kochakarn and Wipaporn Pummanagura,¹ Division of Urology, Department of Surgery, and

¹Department of Nursing, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

OBJECTIVE: Foreign bodies in the female urinary bladder may occur by self-insertion or migration from adjacent organs. The most common reason for this is sexual in nature, but hygienic behaviour and attempts to relieve voiding problems have been reported. Only small case series were found in the literature devoted to foreign bodies in the urinary bladder. Therefore, we reviewed our experience regarding foreign bodies in the female urinary bladder in our hospital.

METHODS: Medical records of female patients who were diagnosed with a foreign body in the urinary bladder during 1985–2005 were reviewed. Demographics, causes, type of object found, clinical presentation, treatment and outcomes were noted.

RESULTS: Seventy-eight patients with a mean age of 38 years were identified. The major route for ingress of foreign bodies was via the urethra. The objects found self-inserted were cotton swabs, tampons, paper clips and pen casings. As most of Thailand is an agricultural environment, some small living organisms such as leeches could be found as foreign bodies in the bladder. The majority of the cases presented with haematuria associated with frequency, urgency and pelvic pain. Almost all cases could be managed by endoscopic removal with minimal complications. Four cases were treated by open surgery.

CONCLUSION: Foreign bodies in the urinary bladder represent a urological challenge that requires prompt management. The suspected history and presenting symptoms are crucial and lead to further investigations. Gentle endoscopic management is the main treatment with a high success rate. [*Asian J Surg* 2008;31(3):130–3]

Key Words: female, foreign bodies, urinary bladder

Introduction

Foreign bodies in the urinary bladder are a urological challenge in diagnosis and management. Foreign bodies may enter the bladder by ascending from the urethra, descending from the ureter or migration from adjacent organs. Due to the short urethra and proximity to genital organs, the female urinary bladder is relatively easily invaded by foreign bodies both by ascent from the urethra and by migration.^{1,2} Many objects have been reported as

foreign bodies in the female bladder such as pen casings, pencils, bamboo sticks, needles, pieces of feeding tube, pieces of latex glove and intrauterine devices (IUD).^{1,2} Some cases were reportedly caused by self-insertion during masturbation or in association with psychiatric disorders. Some were iatrogenic or accidentally retained after treatment of voiding disorders such as catheterization or endoscopic treatment of urological diseases.³ We hereby report our experience of foreign bodies in the female urinary bladder over 20 years. Causes, type of objects, clinical

Address correspondence and reprint requests to Professor Wachira Kochakarn, Division of Urology, Department of Surgery, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Rama 6 Road, Bangkok, Thailand 10400.
E-mail: ravkc@mahidol.ac.th • Date of acceptance: 8 August 2007

presentations, means of diagnosis and treatment were reviewed.

Materials and methods

The medical records of 78 female patients who were treated for foreign bodies in the urinary bladder during 1985–2005 were reviewed. Demographics, causes, types of object found in the bladder, clinical presentation, treatment and outcomes were reviewed.

Results

The mean age of the 78 patients who suffered from a foreign body in the urinary bladder was 38 years (range, 8–86 years). Almost all of the patients presented with more than one symptom related to voiding, suggesting lower urinary tract abnormalities. Most of the patients presented with haematuria (68, 87.1%) and 46 patients from this group had gross haematuria (67.6%). Sixty-three patients complained of frequency of urination and dysuria (80.7%). Sixteen patients had urge incontinence (20.5%), and nine patients had pelvic pain (11.5%). Five patients were sent to hospital immediately after insertion of a foreign body. Twenty patients presented within 1 week and 30 patients presented within 1 month. Twenty-three patients had an unknown duration of a foreign body in the bladder. All of the patients with self-inserted foreign bodies came to hospital later, believing that the object might spontaneously pass out. Regarding treatment, almost all of the cases were treated endoscopically. Cystoscopic removal could be done in 44 (56.4%) cases, and 30 cases were treated by cystolitholapaxy and removal of the foreign body. Only four cases required open surgery due to the inability to remove the foreign body using endoscopic techniques. Most patients had an uneventful hospital course. Four cases presented later with urethral stricture. The types of object and causes are listed in the Table.

Discussion

Foreign bodies may exist in the bladder by self-insertion via the urethra, descending from the ureter or migration from adjacent organs. Most of the cases of self-insertion are associated with psychiatric disorders, autoerotic stimulation or desire to get relief from urinary symptoms.⁴ Migration of foreign bodies from adjacent organs are

mostly iatrogenic or traumatic in origin. Abdominal swabs, gauze, IUD, bone cement and suture materials have been reported as foreign bodies in the bladder.⁵ Some case reports were related to treatment of urinary disorders such as self-catheterization, where pubic hairs were accidentally incorporated with the catheter into the bladder and left as foreign bodies, or were because of incomplete removal of Foley's balloon catheter. Spontaneous knotting of the catheter or feeding tube used as a catheter were also reported.⁶ In this study, we found that some patients used a feeding tube for self-catheterization because of its smaller size. Spontaneous knotting was found in two cases. However, organisms or parts of animals were reported, including leeches, snails and squirrels.⁷ In underdeveloped communities, some foreign bodies were reported after illegal abortion. Pieces of bamboo, grass, leaves or sharp objects were reportedly present in the bladder after accidental migration to the urethra. Because of poor understanding of the anatomy, foreign bodies used to dilate the cervix or destroy the fetus can accidentally go into the urethra.⁸

Ascending migration or self-insertion of a foreign body via the urethra into the bladder was the main mechanism in several reports.³ In this study, we also found this mechanism to be the main route of entry of foreign bodies into the bladder. Due to the shorter urethra and its straight alignment, females are more susceptible to ascending migration of foreign bodies than males.³ Most self-inserted objects and small organisms can easily go through the urethra into the bladder. Because the position of the urethra is not visible, a foreign body can accidentally be inserted into the urethra during masturbation. To provide autoerotic stimulation, many objects were reportedly inserted into the urethra and presented as a foreign body in the bladder.⁴ Some hard objects such as pencils, ballpoint pens, pen casings, and paper clips have been reported.³ Surprisingly, we found cotton swabs more commonly than other objects. The cotton swabs were used for hygienic cleaning or self-dilatation after a feeling of dysuria.

The majority of our cases were diagnosed by cystoscopy. Almost all of the cases came with confirmation of a history of insertion of foreign bodies into the bladder and they suffered from urinary symptoms. Some patients were reported to believe that the foreign body might spontaneously exit via the urethra. Therefore, they waited for a time before coming to hospital. Nabi et al reported a technique of radiological localization of the foreign body in the urinary bladder, but only opaque materials could be diagnosed as

Table. Types and causes of objects found as foreign bodies in the urinary bladder

Object	Cases, <i>n</i>	Causes
Cotton swab	8	Self-inserted: masturbation, 3 Hygienic clean-up, 2 Self-dilatation for dysuria, 3
Tampon	4	Self-inserted
Knotted feeding tube	2	Intermittent catheterization
Paper clip	4	Self-inserted
Fragment of double J ureteric catheter	5	Incomplete removal: proximal part, 4; distal part, 1
Intrauterine device	3	Migration from uterus
Pieces of rubber gloves	2	Unknown
Pen cover	3	Self-inserted
Fragment of Foley's balloon catheter	5	Incomplete removal
Ballpoint pen	2	Self-inserted
Pencil	2	Self-inserted
Grass leaves	4	Self-inserted, 2 Illegal abortion, 2
Bamboo stick	2	Illegal abortion
Needle	2	Self-inserted
Hair	3	Self-catheterization
String	1	Self-inserted
Screw	2	Self-inserted (psychosis)
Rubber	2	Self-inserted
Suture material for pubovaginal sling	3	Iatrogenic
Tape for stress incontinence procedure	2	Iatrogenic
Rifle bullet	1	Assault
Leech	3	Standing in river
Plastic bean	5	Self-inserted
Gauze	1	Iatrogenic, migration
Swab	1	Iatrogenic, migration
Bone cement	2	Iatrogenic, migration
Pessaries	2	Self-inserted, accidental insertion
Small battery	2	Sexual abuse, 1 Self-inserted, 1

a plain anterior-posterior combination with lateral film.⁹ An iatrogenic origin is another cause that was mentioned in the literature. Retained ureteric catheters or Foley's balloon catheter were reported.³ Migration from adjacent organs was also common among iatrogenic causes: an IUD can migrate from the uterus via an abnormal fistulous tract, and suture materials or bone cement from orthopaedic procedures can migrate and erode the surrounding tissue into the bladder or from the bladder into the retroperitoneal space. Gauze and abdominal swabs that were accidentally left in the abdominal cavity were reported to migrate into the urinary bladder.¹⁰ Another iatrogenic foreign body was an incompletely-removed double J ureteric catheter. Almost

all of our cases were found to have the proximal part of the double J catheter. Incomplete removal and spontaneous descent from the ureter might be the problem.

Almost all of the reported cases presented with recurrent urinary tract infection, haematuria, urolithiasis and pelvic pain. In our study, we found that haematuria was the main presenting symptom and gross haematuria was found more commonly than microscopic haematuria. Frequency, urgency, urge incontinence and pelvic pain were found in the majority of cases. In our experience, most of the cases presented soon after insertion of the foreign body due to the severity of their symptoms. Therefore, we found minimal stone formation over the foreign body in almost all cases.

Because of easy access into the bladder via the urethra, foreign bodies in the female bladder are easy to remove endoscopically.¹¹ Most cases reported were successfully removed by endoscopic techniques. Only sharp objects or bigger objects that were associated with migration out of the bladder wall were removed using open surgery. Complications and adverse consequences were seldom reported and we found only four (5.1%) cases with later urethral stricture. All of them were reported to have had a large, sharp object in the bladder. Recurrent introduction of foreign bodies into the bladder is an important issue, especially in patients with underlying psychiatric disorders. Recurrent haematuria in psychiatric cases will need urological investigation and foreign bodies should be ruled out.¹²

A foreign body in the urinary bladder is not an uncommon occurrence. Female patients were found to easily perceive the presence of a foreign body, mostly because of self-insertion via the urethra. Suspected cases need further investigation and almost all of the cases need cystoscopy. Endoscopic removal can be used in almost all patients with minimal complications and consequences.

Acknowledgements

The authors thank Professor Dr Amnuay Thithapandha for revision of the manuscript.

References

1. Eckford SD, Persad RA, Brewster SF, et al. Intravesical foreign bodies: five-year review. *Br J Urol* 1992;69:41-5.
2. Robinson D. Foreign body in the bladder. *J Emerg Med* 2005; 29:215.
3. Van Ophoven A, de Kernion JB. Clinical management of foreign bodies of the genitourinary tract. *J Urol* 2000;164:274-87.
4. Pal DK, Bag AK. Intravesical wire as foreign body in urinary bladder. *Int Braz J Urol* 2005;31:472-4.
5. De Gier RP, Feitz WF. Surgical instrument migration from the abdominal cavity through the bladder into the vagina; a rare long-term complication. *Urology* 2002;60:165.
6. Amar AD. Intravesical knotting of a plastic tube introduced per urethra. *Can Med Assoc J* 1969;18:101-22.
7. Mukherjee G. Unusual foreign body causing haematuria. *J Indian Med Assoc* 1974;63:284-5.
8. Bernstein GS, Futoran RJ, Wall DM. Foreign body in urinary bladder from attempted abortion. *Obstet Gynecol* 1970;36: 475-8.
9. Nabi G, Somani BK, Steven LC, et al. Technique of radiological localisation and endoscopic retrieval of unusual foreign body from urinary bladder. *Int Urol Nephrol* 2006;38:251-4.
10. Cury J, Coelho F, Srougi M. Retroperitoneal migration of self-inflated ballpoint pen via the urethra. *Int Braz J Urol* 2006; 32:193-5.
11. Nabi G, Hemal AK, Khaitan A. Endoscopic management of an unusual foreign body in the urinary bladder leading to intractable symptoms. *Int Urol Nephrol* 2001;33:351-2.
12. Medeb R, Dockery KF, Whaley K, et al. Paraffinoma of the urinary bladder. *Int J Urol* 2006;13:299.