A novel technique to remove a urinary bladder foreign body endoscopically using an Endoloop

Mohammed Al-Zubaidi a,*, Stephen McCombie a, b, Haider Bangash a, Dickon Hayne a, b

a Fiona Stanley Hospital, Australia
b School of Medicine, University of Western Australia, Australia

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ABSTRACT

The urinary bladder is the most common site of foreign bodies in the genitourinary tract. The incidence of admissions related to this appears to be increasing, which may be partly due to an increase in the practice of urethral sounding for sexual gratification. Herein, a 29 year-old lady who was using a urethral sound for sexual arousal when it slipped and migrated into the bladder. We describe a technique that can be used to retrieve cylindrical foreign bodies from the bladder using an Endoloop through a rigid cystoscope, which has been found to be relativelyatraumatic and easy to perform.

1. Background

Foreign bodies in the urinary bladder are a challenge to urologists from a variety of perspectives. Firstly, foreign bodies come in different shapes and sizes, which makes it difficult to predict the complexity of the procedure and what instruments may be best suited to removing the foreign body in question. Equally, foreign bodies in the urinary bladder are uncommon, therefore building up experience with their removal is a challenge. In our experience standard endourological equipment, such as graspers and baskets, do not always lend themselves to removal of foreign bodies as purchase on the object is often not able to be achieved. If foreign bodies are not able to removed endoscopically then they may require open cystotomy and removal, leading to a prolonged period of recovery, increased risk of complications, and the need for a period of an indwelling catheter to allow bladder healing. In this case, we are presenting a novel technique of removal of urinary bladder foreign bodies that can be implemented for many of these foreign bodies. The technique entails using an Endoloop through a rigid cystoscope to snare the broader end of the object and pull it out via the urethra. Endoloops are readily available in most hospitals as they are commonly used in performing a laparoscopic appendicectomy.

This procedure is highly successful and can be used as the first-line option for bladder foreign body retrieval due to its simplicity and ease to perform.

2. Case presentation

A twenty-nine-year-old lady presented to the emergency department with dysuria and lower abdominal discomfort after self-inflicted urethral sound into the bladder accidently. She was using a straight 10-cm urethral sound for sexual arousal when it accidently slipped into the urinary bladder. After six-hours of trials to expel the urethral sound out by urination, she decided to seek medical attention.

Upon presentation to emergency department, she was well apart from suprapubic discomfort. Physical examination was unremarkable, and a bedside ultrasound confirmed a 10-centimetre long, 5-mm wide cylindrical foreign body lying transversely inside the urinary bladder with no urinary retention. It had one pointed end and the other end was rounded with an adjacent neck.

2.1. She was therefore taken to theatre for a cystoscopy and foreign body removal

Given the configuration of the foreign body did not lend itself to removal with a grasper, we utilised a technique of using an Endoloop to remove it. A 22Fr rigid cystoscope was inserted and the urethral sound was found to be lying transversely in the bladder.

In vitro, the Endoloop end was broken and the string was cut as long as possible, then the loop was reduced to 2–3cm diameter by tightening the knot. A JJ stent pusher was used as an Endoloop applicator through the cystoscopy sheath. The string of the Endoloop® was backloaded into
the pusher which was shortened by 12 cm to accommodate the length of the string (Image 1). Once the string is out from the other end, an artery forceps used to secure it in place. Then the pusher (loaded with the Endoloop string) inserted in the rigid cystoscopy sheath from one of the ports.

In vivo, the knot loop was moved forward to the rounded end of the foreign body, encircled with it and the knot was tightened at the neck using the pusher (pushing pusher forward while pulling the artery forceps).

Once the foreign body was secured with the string, the rigid cystoscope was removed leaving the string protruding out from the urethra. Then pulling the string gently and progressively to deliver the foreign body end to the urethra and subsequently fully retrieved with no injuries (Image 2). No indwelling catheter was left, and the patient was discharged home on the same day without further issues.

3. Discussion

Foreign bodies in the urinary bladder are rare and extracting them may be challenging. Generally, the aetiology of bladder foreign bodies may be iatrogenic, urethral self-insertion, penetrating trauma or migration from adjacent organs. However, the most common of these causes is the self-insertion of objects for sexual gratification or due to psychological conditions. It is usually associated with lower urinary tract symptoms of mainly frequency, dysuria, haematuria, truma to the external genitalia or urinary retention.

Different imaging modalities can be utilised to confirm the presence of a foreign body in the urinary bladder, such as ultrasound or x-ray. X-ray is useful for radio-opaque objects only, while ultrasound is useful for both radio-opaque and radio-lucent foreign bodies. Direct visualization with cystoscopy is the accurate modality to confirm the presence of bladder foreign bodies.

Retrieval of foreign bodies from the bladder can be performed through a variety of different methods including open cystostomy, cystoscopic removal, or combined open and cystoscopic removal. Most of the reported bladder foreign bodies were introduced transurethrally, however, not all of them can be retrieved cystoscopically due to numerous challenges relating to the nature of the object, its lie, the availability of equipment and surgeon experience. In this case, a novel approach to remove a bladder foreign body was performed that can be used in many different scenarios, but particularly lends itself to cylindrical foreign bodies. The wide availability of Endoloop® and ureteric stents makes the procedure very affordable with a high success rate and may avoid the unnecessary need to perform an open cystotomy with the various issues associated with this.

Declaration of competing interest

Authors has no conflict of interest, and no funding.

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