A simple inexpensive snare for manipulation of intravesical foreign bodies

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Patients present with foreign bodies in the genitourinary tract of a surprising array of shapes and sizes. We present a case of a woman with a metallic pipe lodged in the bladder and a novel technique for removing it. The patient underwent cystoscopy and a prolene snare was fashioned intraoperatively which facilitated safe and rapid extraction of the metallic pipe. Foreign bodies in the genitourinary tract present the urologist with a unique challenge and we present a simple, cheap, and effective way of managing these objects using an easily constructed cystoscopic snare.

Key Words: foreign body, cystoscopy, endoscopy, surgical technique

Introduction

Foreign bodies in the bladder present a unique challenge to the urologist. A large variety of objects have been found in the bladder, either those inserted transurethrally, or objects that have migrated transvesically from another location.[1] Removing large objects can easily be performed by open cystotomy, but this involves potential for significant morbidity. Intravesical small objects can usually be removed endoscopically. The challenge arises when objects are either too large or solid to be grasped endoscopically. We present a case report of a large intravesical foreign body and the construction and utilization of a simple snare which can be used endoscopically to remove solid intravesical foreign bodies.

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Methods

Our patient was a 54-year-old woman who presented to the emergency department with complaints of suprapubic pain and the sudden onset of gross hematuria. She admitted to recently smoking illicit drugs and then losing consciousness. When she awoke developed abdominal pain and gross hematuria. Plain

Figure 1. Radiograph showed a midline metallic object.

films demonstrated a radio-opaque object in the lower abdomen, Figure 1. The object could not be palpated on rectal exam or on bimanual pelvic exam. A CT scan with three-dimensional reconstructions suggested that the object was likely intravesical, without evidence bladder perforation as noted by the lack of contrast extravasation noted on cystogram.

The patient was brought to the operating room for cystoscopy and removal of a foreign body under general anesthesia aware of the possible need for an open cystotomy.

Results

A standard 20-French cystoscope was used to inspect the urethra and bladder. Using normal saline irrigant the cystoscope was passed easily through the urethra into the bladder. The urethra was normal. The foreign body was easily visualized inside the bladder. There was some mucosal erythema on both lateral aspects of the bladder, but no evidence of perforation or transvesical injury, Figure 2. Cold cup biopsy and alligator forceps were used to attempt to grasp the metal object, however both could not get enough purchase to grasp the object securely. A larger, stone crushing forceps was then used which also was also unable to maintain hold on the metallic pipe.

The bladder was further distended with normal saline until maximal capacity was reached. The maximal distension allowed the object to move laterally within the bladder.

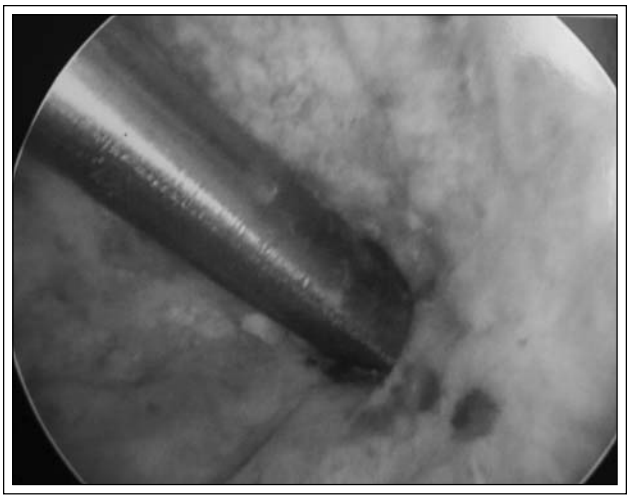

Figure 2. Cystoscopy. The metallic pipe was lodged in the bladder with the bladder partially decompressed. There was no violation of the urothelium. Filling the bladder allowed free manipulation of the pipe.

Using a 5-French open-ended ureteral catheter a snare was fashioned. A 0-prolene tie was fashioned into a loop and then passed through the ureteral catheter. This was then passed through the single working channel of the 20-French cystoscope. The snare was then used to grasp the metallic pipe and trap it against the beak of the cystoscope, Figure 3. The object could then be safely manipulated and slowly withdrawn under vision through the bladder neck and out of the urethra.

Figure 3. Using the snare. The snare was loaded through the working channel of the cystoscope and then advanced under vision. The loop was pulled tight around the pipe by withdrawing the snare back into the scope, trapping the pipe against the beak. The pipe was then gently directed out though the bladder neck.

The patient tolerated the procedure well and was discharged home. Her postoperative recovery was uneventful and the hematuria resolved by week two. Toxicology screen on presentation was positive for cocaine. Pathology confirmed the metallic object to be a pipe for smoking crack cocaine.

Discussion

We present a simple, cheap, and effective method for grasping and removing intravesical objects. Fashioning a snare from readily available surgical instruments and suture is a technique that, once learned, can enable the urologist to endoscopically retrieve large foreign bodies within the bladder obviating the need for open surgery.

A comprehensive review of foreign bodies in the genitourinary tract is provided by van Ophoven and DeKiernon[1] which illustrates the astonishing variety of objects which a urologist should be prepared to deal with. The list includes animals, plants, wires and sharp objects, as well as pens and pencils, to name a few. In each case the objects were removed either endoscopically or required open cystotomy.

Other authors have presented novel techniques for removing large, complex intravesical foreign bodies. Wire et al[2] suggested using a holmium laser to break the objects into smaller components. They report that the holmium laser can be used on a variety of materials ex-vivo and may work in-vivo for assisting with endoscopic removal to avoid open surgery. Wise et al[3] presented a technique using magnets to extract intravesical foreign bodies. Wegner et al[4] presented a technique utilizing a percutaneous nephrolithotripsy (PCNL) sheath and forceps to remove pencils.

Another approach mentioned in the literature involves a combined endoscopic and open approach, the "ship in the bottle" approach.[5] While this method of localizing the intravesical body and then performing a small cystotomy sounds intriguing, it still carries the morbidity of a midline incision and cystotomy.

The open approach may be the most effective for large, calcified objects that have been in the bladder a long while, but the snare is more appropriate for objects recently placed in the bladder. Pencils, pens, and plastic tubes, and catheters make up the majority of reported intravesical foreign bodies.[1] Our simple snare technique is ideal for grasping, reorienting, and safely removing these foreign bodies. The snare, with the flexible, extendible 5-French open ended ureteral catheter allows more maneuverability so rigid objects can be slowly turned and guided through the bladder neck and out of the urethra. The snare technique allows the natural shape of the bladder neck to safely direct such objects out of the bladder.

Conclusion

We present a simple, inexpensive technique for grasping and removing intravesical foreign bodies. The snare technique is ideal for rapidly grasping and controlling sharp and lacerating objects within the bladder and atraumatically delivering them through the urethra. □

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