

# An Unusual and Missed Foreign Body in the Urinary Bladder

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## ABSTRACT

Foreign body in the lower urinary tract is uncommon, urinary bladder being the most common site. A variety of foreign bodies such as surgical gauze, intrauterine contraceptive device, metal wire, ball pen and thermometer have been extracted from urinary bladder. The foreign body if not removed acts as a nidus for recurrent infections, and may also cause pelvic pain, hematuria, retention and secondary stones. Depending upon the size of the foreign body, either minimally invasive procedures

such as endoscopic management or open surgical exploration are recommended. Here we present a case of a patient who, after sustaining a rubber bullet injury to the suprapubic region, was initially managed at a medical center and the bullet was missed while the patient underwent exploratory laparotomy. The patient later presented to us with inability to pass urine and his workup revealed a large circular rubber bullet in the bladder.

Keywords: Urinary Bladder; Foreign Body; Laparotomy

## INTRODUCTION

Foreign body in the lower urinary tract is uncommon with urinary bladder being the most common site. A variety of foreign bodies such as surgical gauze, intrauterine contraceptive device (IUCD), metal wire, copper wire, carrot, pencil, pen and thermometer have been extracted from urinary bladder [1]. Causes of foreign bodies in lower urinary track include psychological, iatrogenic during urological procedure, traumatic and migration from other organs like vagina, cervix, uterus or rectum [2]. The foreign body, if not removed, acts as a nidus for recurrent infections, or may cause pelvic pain, hematuria, retention and secondary stones [3]. Minimally invasive procedures such as endoscopic management are usually successful in removing the foreign body. In some cases, however, open procedures such as suprapubic cystostomy due to the nature and size of the foreign body are recommended [4, 5]. Here we present a case of a patient who, after sustaining a rubber bullet injury to the suprapubic region, was initially managed in another medical center and the bullet was missed while the patient underwent exploratory laparotomy. The patient later presented to us with inability to pass urine and his workup revealed a large circular rubber bullet in the bladder.

## CASE REPORT

A 24-year-old male presented to the emergency department after being hit by a rubber bullet in the suprapubic region during a riot. The patient was brought in a stable condition to the emergency room, having an entry wound just left to the midline in the suprapubic region. There was bruising around the entry wound. On catheterization, blood tinged urine was drained. After receiving initial management, he underwent laparotomy. During the laparotomy, clear fluid was aspirated from the peritoneal cavity, and a tear of about 1cm was found in the bladder that was closed with primary healing intention. There was a piece of rubber bullet that was stuck to the ruptured wall of the bladder and was removed. His postoperative recovery was uneventful. On the 7th postoperative day, his per-urethral catheter was removed but the patient was unable to pass urine and developed suprapubic pain. He was re-catheterized and was discharged with the hope that he might urinate when the catheter is removed on follow-up. At one week follow-up, the per-urethral catheter was removed but the patient again failed to pass urine and the catheter was inserted again. He was referred to our hospital where he underwent a thorough workup. His X-ray pelvis revealed a circular radio-opaque shadow in the pelvis (Figure 1). His ultrasound

Conflict of Interest:  
None declared

This article has been  
peer reviewed.

Article Submitted on:  
18<sup>th</sup> April 2013

Article Accepted on: 10<sup>th</sup>  
August 2013

Funding Sources: None  
declared

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Cite this article: Bangash  
K, Alam A, Anwar K. An  
unusual and missed  
foreign body in the  
urinary bladder. *J  
Pioneer Med Sci.* 2013;  
3(4):191-193

**Figure 1:** X-ray showing a rounded radio-opaque mass in the pelvis



**Figure 2:** Ultrasound demonstrating the rubber bullet in the bladder and the rubber bullet after retrieval



showed a circular mass in the urinary bladder with posterior shadowing giving the impression of a calculus (Figure 2). The patient underwent cystoscopy showing a blackish circular hard object that was difficult to remove or crush endoscopically. Suprapubic cystostomy was performed, a rubber bullet of 2×2cm was retrieved (Figure 2), and per-urethral catheter was placed. His postoperative recovery was satisfactory and per-urethral catheter was removed on the 5th postoperative day. Patient was able to pass urine and suprapubic catheter was removed afterwards.

## DISCUSSION

Although very uncommon, a wide range of foreign bodies in the bladder have been reported in the literature, such as retained urethral catheter tip, tip of ureteric catheter, and broken stent [6]. There are also reports of transvesical migration or self inserted foreign bodies like surgical suture [7], metallic hip prosthesis [8], electric wires, pebbles, pencils, thermometers [9] and IUCD [10]. The causes of foreign bodies in lower urinary track include psychological, iatrogenic (during urological or non-urological procedure), trauma and migration from mother organs like vagina, cervix, uterus or rectum [2, 11]. In psychological factors, various circumstances including exotic impulse, mental illness, personality disorder, sexual curiosity, and sexual practice while intoxicated are important causes [11]. Generally, objects are inserted through urethra which migrates further to the urethra and then to the bladder possibly by the attempt to remove or by contraction of the perineal muscles. In such scenarios, the diagnosis is sometimes missed on the history as patient may refuse to volunteer the reason due to shame or humiliation. However, diagnosis is evident on examination or radiological investigations. In iatrogenic cases or in cases with missed foreign bodies, the diagnosis still may become a dilemma.

In the case presented, there were certain points that were missed and need to be addressed. As the patient had penetrating trauma, his laparotomy had to be performed anyway. During the surgery, once the rent was found in the bladder, the bladder had to be explored via midline incision to look for injury to the posterior bladder wall and other pathologies. Unfortunately, the piece of rubber bullet that was stuck with the rent bladder wall misled the team operating upon the patient at that time. Also, the size of the rent was actually smaller than the size of the actual rubber bullet. Hence, it was hard to imagine that there might be a large circular object inside the bladder. The urological guidelines are suggestive that in penetrating bladder injuries, no matter how trivial, exploration is mandatory to look for other concealed perforations or pathologies. Management of foreign body in the urinary bladder is aimed at complete extraction depending on the nature of the foreign body with minimal trauma to the bladder and urethra [3]. However, if foreign body remains in the bladder, complications such as infection, stones, or fistula formation can occur. There have been case repo-

rts of patients who died due to sepsis and uremia caused by foreign bodies in the lower urinary tract [11]. Minimally invasive procedures such as endoscopic management to minimize bladder and urethral injuries are usually successful. But at times, it is not sure preoperatively whether the endoscopic surgery would be successful and open conversion has to be kept in mind. In the present case, the bullet was hard and large in size. As it could not be managed cystoscopically, open cystotomy had to be performed to remove the foreign body.

Foreign body in the bladder is rare but a challenging entity. It creates confusion not only in diagnosis but also in the management of the case. Rubber bullets are meant to cause pain and less damage or non-serious injuries. However, these rubber bullets may cause serious complications. While managing penetrating bladder injuries, it has to be explored thoroughly to look for any exit wall injuries and also for any foreign body.

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