



Spontaneous Transvesical Migration of a Foreign Body

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ABSTRACT

Spontaneous migration of foreign bodies into the bladder is rare. Patients present late with urinary symptoms. Here we report two such cases of delayed transvesical migration: a large bullet and an intrauterine device (Copper-T), with their successful retrieval by endoscope and a minimally invasive procedure.

KEY MESSAGE

Spontaneous transvesical migration of foreign bodies, though rare, may occur, leading to delayed urinary symptoms, such as in our 2 cases. Successful retrieval is possible in most cases by endoscopic or by minimally invasive techniques.

INTRODUCTION

The literature in medical journals is scattered with articles regarding foreign bodies in the lower urinary tract. In most of these cases, the foreign body was introduced through the external urinary meatus. But here we report 2 cases of spontaneous delayed migration of foreign bodies into the urinary bladder: a bullet from the pelvic cavity after a 10-month-old gunshot injury, and an intrauterine device (IUD) from the uterus after 8 years of its insertion. Silent spontaneous migration of foreign bodies is a rare occurrence, which prompted us to report these cases.

CASE REPORT

Case Number 1

A 35-year-old male patient was admitted with sudden acute urinary retention and a history of mild dysuria for 5 days prior to presentation. He had a gunshot injury 10 months before. On examination, the urinary bladder was distended, with tenderness on the suprapubic region. Catheterization relieved the retention, with mild resistance in the prostatic urethra.

An X-ray of the kidney, ureters, and bladder (KUB) region showed rounded opacity in the bladder region (Figure 1A). Ultrasonography (USG) suggested a foreign body within the bladder. An X-ray of the abdomen with contrast in the Foley's bulb showed the bullet close to the bulb (Figure 1B), suggesting the intravesical position of the bullet. Under general anesthesia, cystoscopic removal of the bullet failed due to its large size. The urinary bladder was breached through a small cystostomy incision using a cut-to-the-light approach, and the bullet was extracted under vision. The patient had an uneventful recovery.

The patient had a history of gunshot injury 10 months before. The bullet entered just above the left iliac crest without any clinical signs of bladder or bowel injury. An abdominal X-ray at that time showed the bullet overlying the shadow of the superior pubic ramus of the right pubic bone (Figure 1C) leading to a nondisplaced fracture of the lower margin of the right pubic ramus. A computed tomography (CT) scan of the pelvis and abdomen did not reveal any injury to the pelvic or abdominal organs, with a bullet in the right side of pelvis. The patient was managed conservatively as he was hemodynamically stable without any clinical or radiological signs of any visceral injury. He was discharged on the tenth day with a retained bullet in the pelvis and he was advised to perform a follow-up visit. On the second follow-up visit 2 months later, the bullet migrated medially of its initial position without any urinary symptoms (Figure 1D).

KEYWORDS: Foreign bodies, intravesical, migration, IUD

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CASE REPORT

Figure 1. a) The X-ray film showing the bullet over the pelvic region. b) The X-ray film showing the intravesical position of the bullet beside the radio-opaque Foley bulb. c) The initial X-ray film showing close proximity to the right pubic ramus. d) The X-ray film 2 months after the incident showing the bullet in the pelvis.

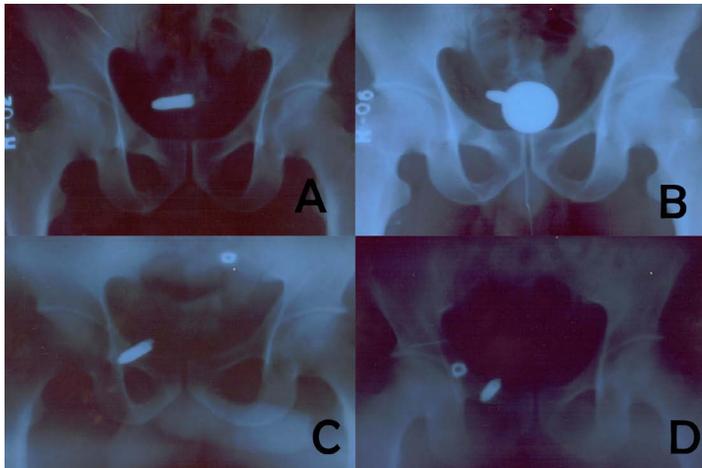
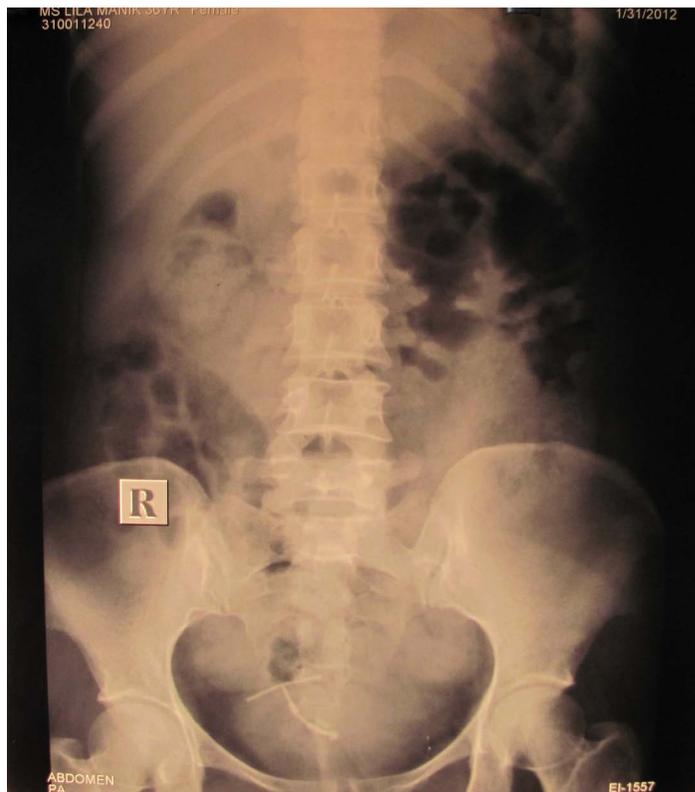


Figure 3. The retrieved specimen of Copper-T with stone on it.



Figure 2. An X-ray of the abdomen showing the Copper-T with stone in the pelvis.



Case Number 2

A 31-year-old female patient presented with recurrent urinary tract infection that has lasted 3 years. She received several courses of antibiotics elsewhere without any long-term improvement. Her urinalysis showed plenty of pus cells with red blood cells 15-20/HPF. Her urine culture showed *E. coli* growth $> 10^5$ CFU/ml. An intrauterine device (Copper-T) with stone was found in the pelvic area upon X-ray of the abdomen (Figure 2). Ultrasonography revealed a foreign body in the urinary bladder. On further inquiry, she admitted the insertion of a Copper-T device 8 years back. During the initial period, she used to palpate the thread on the vagina, but later on she forgot its existence. She was treated with antibiotics as per her urine culture sensitivity. The Copper-T and stone (Figure 3) were removed with a cystoscope. The patient had an uneventful recovery.

DISCUSSION

Foreign bodies introduced through the external urethral meatus are not uncommon [1]. These include objects such as a

wooden stick, electrical wire, a chicken bone, a thermometer, intrauterine devices (IUD), pieces of Foley catheter, broken pieces of endoscopic instruments, a lead pencil, a ball-point pen, a hair pin, screws, pellets, metal rods, etc. [1-3]. Most of these cases are associated with psychiatric disorders, senility, intoxication, autoerotic stimulation, or iatrogenics [2,3]. Foreign bodies may sometimes reach the urinary bladder directly via the traumatic route, and these are bullets, pieces of shells, and splinters [2].

Spontaneous migrations of foreign bodies to the urinary tract are extremely rare [2]. Foreign bodies can migrate into the urinary bladder from the gastrointestinal or female genital tract [2]. The spontaneous migration of foreign bodies, such as a surgical sponge, surgical mesh, and even a prosthetic acetabulum, has been reported [4]. Two cases have been reported where a bullet entered the renal parenchyma and subsequently entered the collecting system before advancing through the ureter to the bladder [5,6]. Even delayed spontaneous migration of multiple short gun pellets into the ureter from the retroperitoneum and then to the bladder with spontaneous voiding has been reported [7]. A rare complication of IUD is its migration to adjoining structures or the peritoneal cavity. In a review of 165 migrated IUDs, 23 migrated into the urinary bladder [8].

The penetration of an IUD into the bladder is painless and slow, and the patient presents with recurrent cystitis, hematuria, and pelvic pain [9]. The physical examination is usually unremarkable [2]. We believe that in our first case, the bullet was outside the bladder at the time of injury, as there were no urinary symptoms, and in the second case, the IUD was properly placed in the uterus as the patient palpated the thread in the proper position initially. But later on in both cases, foreign bodies eroded into the bladder lumen by compression of the bladder wall from outside, causing focal ischemia and necrosis, which led to the erosion of the bladder wall.

Ultrasonography or an X-ray of the abdomen almost gives a clue to the diagnosis. Cystoscopy is the confirmatory procedure. Endoscopic retrieval is usually successful, but sometimes, large foreign bodies may be removed with endoscopic and minimally invasive procedures, as described by DeLair et al. [10], as in our first case. Transvesical migration is an important possibility when urinary or pelvic symptoms may be attributed to a forgotten trauma or IUD insertion. A strong index of suspicion helps us to diagnose the erosion of the bladder wall by a foreign body that presented with late urinary symptoms.

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