



## Orthopedic screw penetration into the bladder following femoral neck internal fixation: a case report

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### ABSTRACT

Although the presence of intravesical foreign body is not a rare finding, orthopedic screw penetration into the urinary bladder as a complication of the internal fixation of femoral neck fractures is extremely rare. We describe an 83-year-old man experiencing spontaneous penetration of a cannulated screw into the urinary bladder neck, 16 years after the internal fixation surgery for his femoral neck fracture

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### Introduction

Intravesical foreign bodies are not very uncommon (1), but migration of orthopedic devices into the bladder is rare. Yadav et al. reported the migration of loose screws into the urinary bladder as an extremely uncommon complication of pubic symphyseal plating (2). The most comprehensive review on this topic was performed by van Ophoven and de Kernion, by presenting over 800 cases during the last two hundred fifty years (3). Besides, in

another article, Martinez-Valls et al. presented a bibliographic review on intravesical foreign bodies (1).

The most common urinary symptoms causing by bladder foreign bodies include dysuria, hematuria, and recurrent infections (1).

### Case Report

An 83-year-old man was evaluated for complaints of dysuria, urgency, frequency, and intermittent gross hematuria. His only two medical history were an open transvesical

prostatectomy 7 month, and an internal fixation of femoral neck fracture after a car accident, 16 years before admission.

His physical examination, complete blood count (CBC), and metabolic panel were all within normal limits. But the urine analysis revealed 30-36 red blood cells per each high-power field.

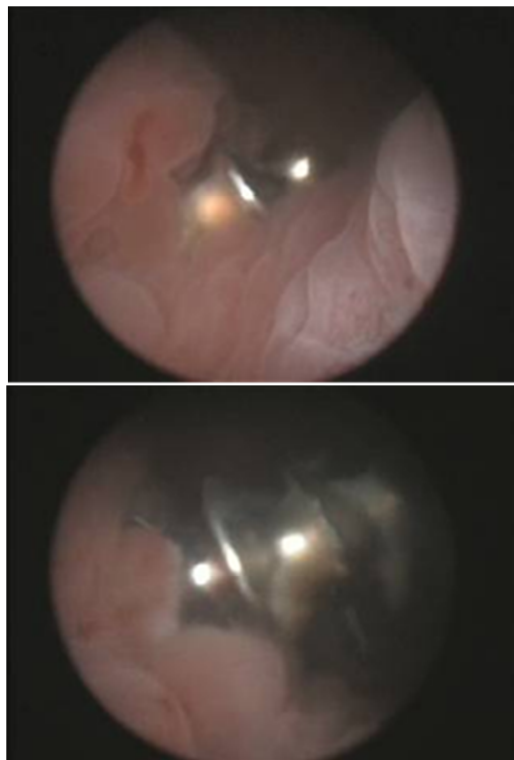
Sonographic study showed the presence of a 1-cm foreign body, likely metal piece, stuck to the right lateral bladder wall. Radiologic studies, including plain pelvic radiography and spiral abdominopelvic computed tomographic (CT) scan revealed the femoral neck orthopedic screws migration into the true pelvic cavity and penetration of one screw into the bladder (Figure 1).



**Figure 1.** Pelvic plain radiography on the left and computed tomographic cystography on the right; In cystography, the screw can be seen in the bladder.

In white light cystoscopy, the distal end of

a cannulated screw was penetrated into the right lateral aspect of the bladder neck. Moreover, the vesical mucosa around the screw was moderately edematous (Figure 2).



**Figure 2.** Cystoscopic images of the screw

Orthopedic consultation was performed and surgical removal of the screws was planned. A 24-French-foley catheter was inserted into the bladder before the surgery and removed after a month. The urinary symptoms totally vanished within the first 3 weeks.

### Discussion

Voiding symptoms following open prostatectomy has some differential diagnoses. Acute cystitis and bladder neck contracture are two major diagnoses. Two to 6% of these patients will develop a bladder neck contracture 7 to 13 weeks after an open prostatectomy. Acute cystitis is one of the late complications, too (4). The presence of foreign bodies in the bladder after surgery is one of the rare causes of postoperative voiding symptoms.

Davidov et al. reported three cases with

voiding symptoms after prostatectomy: in two of them, gauze tampon and surgical needle were left in the bladder during the operation, causing symptoms after 8 years (5). Zantvoord et al. conducted a systematic review of the transmural migration of retained surgical sponges and reported seven cases of surgical sponge migration into the urinary bladder (6).

The migration of surgical screws into the urinary bladder has been reported as an extremely uncommon event (2). So far, three relevant reports have been published in the literature. In the first report, there was spontaneous expulsion of an orthopedic screws during micturition 9 years after symphyseal plating in a patient with a history of recurrent urinary tract infections and radiological features suggestive of osteomyelitis. The authors recommended that recurrent urinary tract infections after pelvic fixation be swiftly investigated by cystography or even cystoscopy (7).

In the second report, the patient presented with dysuria and hematuria 8 years after symphyseal fixation. The patient had spontaneous voiding of a metallic implant after surgical fixation of the pubic symphysis (8).

The third report described a woman with complaint of voiding a metallic screw who had a history of pelvic fracture and extraperitoneal rupture of the urinary bladder about seven years before. At that time, she had undergone an internal fixation of her pelvic bone fracture and bladder repair (9).

Our report represents, to the best of our knowledge, the first instance of penetration of screw into the urinary bladder neck after an internal fixation of femoral neck fracture.

Although orthopedic device migration into the bladder is very uncommon, it should be considered as a differential diagnosis in patients with voiding symptoms and asking about the history of pelvic surgery and using the radiologic investigation is recommended. If device migration is suspected in radiologic

investigations, cystoscopy then is regarded as the second step.

### Conflict of Interests

Authors have no conflict of interests.

### Acknowledgments

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