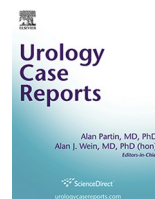




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## Trauma and Reconstruction

## An Unexpected Foreign Body (a Thermometer) in the Bladder: A Case Report

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## ABSTRACT

Foreign bodies in the bladder are rarely observed because of difficult access. These patients usually have a mental disorder, a background of intense sexual perversion, or inquisitiveness. A 48-year-old, deaf, and mentally retarded woman was referred to the nephrology clinic for severe anemia and impaired renal function. Imaging tests showed a mercury thermometer positioned in the bladder and a stone, 5 cm in diameter, around it. This had caused bilateral ureteral obstruction. The patient underwent an open cystectomy. Obstructive uropathy is one of the causes of kidney failure; therefore, foreign bodies should be included in the differential diagnosis.

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## Introduction

Foreign bodies in the bladder are rarely observed because of difficult access; however, the most unlikely items have been found. These patients usually have a mental disorder, a background of intense sexual perversion, or inquisitiveness, for example, children. Items introduced voluntarily into the bladder include electrical cables, pencils, catheters, aluminum rods, or removable parts of medical cystoscopic equipment.<sup>1</sup> Patients present either acute or chronic symptoms because of complications.

## Case presentation

A 48-year-old, deaf, and mentally retarded woman with severe debility presented to the Nephrology Clinical Laboratory testing revealed mild hypochromic anemia (Hct = 31.5%, Hb = 10 g/dL) and anisocytosis. She was given a prescription for iron per os. Three months later, the patient had deteriorated and presented severe anemia (Hct = 26%, Hb = 8.7 g/dL) and debility. Kidney function was impaired (Creat = 5.3 mg/dL, urea = 162 mg/dL). Urine analysis indicated specific gravity 1005, Hb +2, white blood cells 48–50, and red blood cells 6–8. An abdominal ultrasound revealed bilateral hydronephrosis, a stone, 5 cm in diameter, in the bladder, and increased parenchymal echotexture of both kidneys, with normal cortical thickness, indicating acute obstructive renal injury. X-rays

of kidneys and bladder indicated a mercury thermometer with a stone formed around it (Fig. 1). After subsequent discussion with the patient, it was revealed that she absorbed the instrument by mistake 3 months earlier while masturbating. The patient underwent an open cystotomy to remove the thermometer, as it was impossible to carry out endoscopic procedures.

There was a complete postoperative kidney function recovery within 10 days and an improvement in anemia. Erythrocyte sedimentation rate and reactive protein C gradually improved. The Hb electrophoresis indicated beta thalassemia, justifying the disproportionately low Hct. An IV pyelography was performed, which revealed deformation of the bilateral renal pelvic cavities, a common finding after such an obstruction.

## Discussion

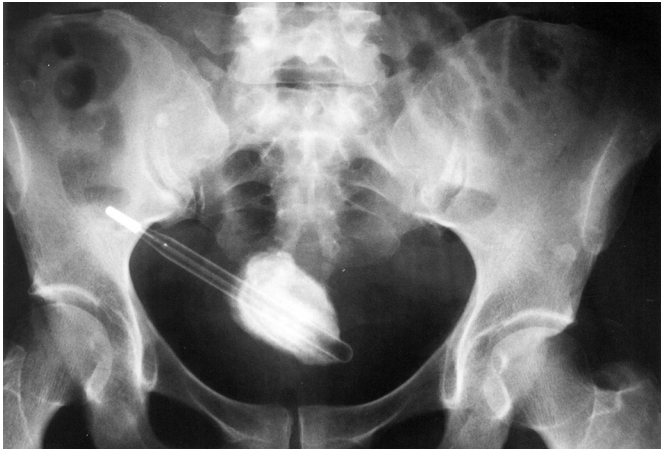
Intravesical foreign bodies are an important consideration in the differential diagnosis of lower urinary tract problems. Introduction method in the bladder includes the following: self-insertion (through the urethra), iatrogenic, migration from adjacent organs, or a result of penetrating trauma.

The most common reasons are sexual pleasure (ie, eroticism, especially masturbation or sexual gratification), inquisitiveness (particularly in children), a consequence of psychiatric or senile states, or excessive consumption of alcohol. However, hygienic behavior and attempts to relieve voiding problems have also been reported. The major route for ingress of foreign bodies is through the urethra.<sup>2</sup>

Furthermore, thermometers are frequently reported to slip into the female bladder during the patient's attempts to determine the temperature in the vulva or urethra.<sup>3</sup>

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**Figure 1.** A mercury thermometer with a stone form around it in the bladder: before the cystotomy

Patients usually present with dysuria, poor urinary stream or retention, bloody or purulent urethral discharge, upper urinary tract infection, urgency, and/or pelvic pain.<sup>1</sup> More importantly, patients occasionally have no symptoms or minimal discomfort. Foreign bodies, when left for a long time, act as a nidus for calculus formation. However, signs that should raise the physician's suspicion include undue anxiety during sexual history taking or attempts to avoid genital or rectal examination.

Complications with intravesical foreign bodies include chronic and recurrent urinary tract infections, acute urinary retention, calcification, obstructive uropathy, scrotal gangrene, vesicovaginal

fistula, squamous cell carcinoma, and even death by sepsis.<sup>4</sup> Finally, intravesical foreign body–induced bladder calculi resulting in obstructive renal failure has been reported in the literature.<sup>5</sup>

Complete removal of the foreign body should be tailored according to its nature and dimensions, while causing minimal trauma to the bladder and urethra. Most foreign bodies can be removed transurethral with cystoscopic grasping forceps. Open suprapubic cystostomy is sometimes required for large, impacted foreign body removal. Our patient underwent an open cystectomy, as it was impossible to carry out endoscopic procedures.

## Conclusion

Detection of intravesical foreign bodies should be included in the differential diagnosis of patients with chronic lower urinary tract problems, even in cases with obstructive renal failure, without history of foreign bodies insertion. The most suitable method for removal depends on the nature of the foreign body, age of the patient, adequate expertise, and equipment.

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