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Case Report

Delayed Diagnosis of an Intraurethral Foreign Body Causing Urosepsis and Penile Necrosis

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Cases of self-inserted foreign bodies in the male urethra and urinary bladder are unusual. In most cases, the type of foreign body can be identified by taking a history or from radiological findings; sometimes, however, it is difficult to identify the foreign body because of decreased mental capacity of the patient or unknown radiological characteristics of the foreign body. We experienced a chronic alcoholic patient with septicemia and penile necrosis in whom a fragment of mirror glass had passed through the urethra into the bladder. The glass, 2 cm in length and 0.7 cm in diameter, was detected by cystoscopy and was removed by using a resectosope.

Key Words: *Foreign bodies; Urinary bladder; Urethra; Sepsis*

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We report a case of urosepsis due to a glass particle that had passed into the bladder after being self-inserted into the urethra. We present the evaluation, imaging, and management of the condition and the unique complications subsequent to the self-insertion of an intraurethral foreign body. Our case was unique in that this is the first reported case of urosepsis induced by an intraurethral foreign body that resulted in a retroperitoneal abscess and penile glans necrosis.

CASE REPORT

A 57-year-old male visited the emergency room because of worsening fever, right flank pain, and gross hematuria lasting 3 days. A review of his medical history determined that he underwent an operation 7 years previously because of an abdominal stab wound. He was a chronic alcoholic and was mentally challenged. Before visiting our hospital, he had been admitted to another hospital for complaints of voiding difficulty and abdominal discomfort; he was exam-

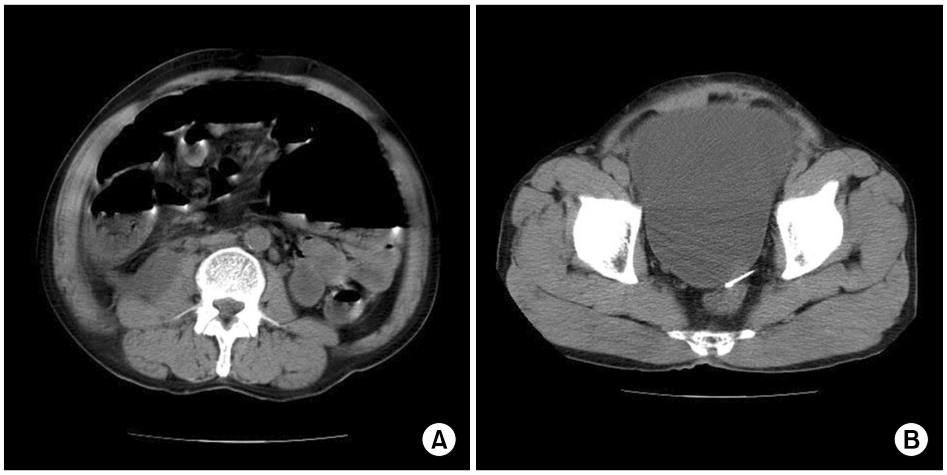

FIG. 1. Abdominal computerized tomography (CT). (A) CT was suggestive of a right retroperitoneal abscess, and (B) a needle-like radiopaque lesion between the rectum and bladder.

ined by computerized tomography (CT) and received a urethral catheterization. The CT demonstrated a distended bladder, suggestive of a right retroperitoneal abscess, and a needle-like radiopaque lesion between the rectum and the bladder (Fig. 1). A physical examination revealed right costovertebral angle tenderness and gross hematuria through the urethral catheter. His vital signs were as follows: blood pressure, 90/60 mmHg; heart rate, 102 bpm; body temperature, 38.2°C; and respiratory rate, 22/min. Laboratory tests gave the following results: white blood cell (WBC) count, 9,500; hemoglobin, 13.0 mg/dl; platelet count, 29,000/μl; blood urea nitrogen, 122.7 mg/dl; creatinine, 7.9 mg/dl; aspartate aminotransferase, 181 U/l; alanine aminotransferase, 47 U/l; C-reactive protein, 35.7 mg/dl; and urinalysis, WBC 5-9/HPF and RBC 100/HPF. Early urine and blood cultures showed methicillin-sensitive *Staphylococcus aureus* (MSSA). Ceftriaxone (2 g/day) was initiated for the sepsis, and hemodialysis was started for the acute renal failure.

On day 5, he had not improved and had developed respiratory failure, so he was intubated for mechanical ventilation. On day 6, a cystostomy was made because of an ulcerative skin lesion on the penile glans (Fig. 2). Follow-up cultures taken from the lesion and from the blood were positive for methicillin-resistant *Staphylococcus aureus* (MRSA). Treatment was administered with meropenem (2 g/day) and teicoplanin (400 mg/day). A follow-up CT showed a retroperitoneal abscess extending to the pelvic cavity and a newly detected hyperdense lesion inside the bladder. The foreign body in the urethra was probably propelled into the bladder during the urethral catheterization (Fig. 3A). On day 14, the patient's vital signs normalized, and he underwent a cystoscopy. The cystoscopy revealed a bladder wall injury and a 2x0.7 cm mirror-glass particle that was removed by using a resectoscope with a cutting loop by vertically repositioning the foreign body (Fig. 3B).

After removal of the foreign body, the gross hematuria gradually improved. On day 24, hemodialysis was stopped because the serum creatinine had normalized. On day 30, the penile glans lesion was necrotized and then dropped out spontaneously. The patient stabilized after drainage of the percutaneous retroperitoneal abscess, and he was discharged. After 9 months, the patient is being treated for periodic urethral dilation because a urethral stricture developed in the penile urethra.

FIG. 2. A necrotic lesion of the penile glans.

DISCUSSION

Most foreign bodies in the urethra are self-inserted for masturbation, but a mental illness, impulsive self-assaultive acts, or drug intoxication may also be the cause [1,2]. Patients are often embarrassed to seek medical care and may make several attempts to remove the object, resulting in further migration of the object into the bladder and injury. Symptoms induced by urethral foreign bodies are varied. In an acute situation, pain with urination, gross hematuria, and urgency may develop; in a chronic situation, there may be a recurrent urinary tract infection and dysuria [3]. Antibiotic therapy has no effect on the infection, because the underlying factor has not been removed. A diagnosis is most easily made by clinical history, physical examinations, and plain x-rays; if the object is radiolucent, ultrasonography or CT is useful.

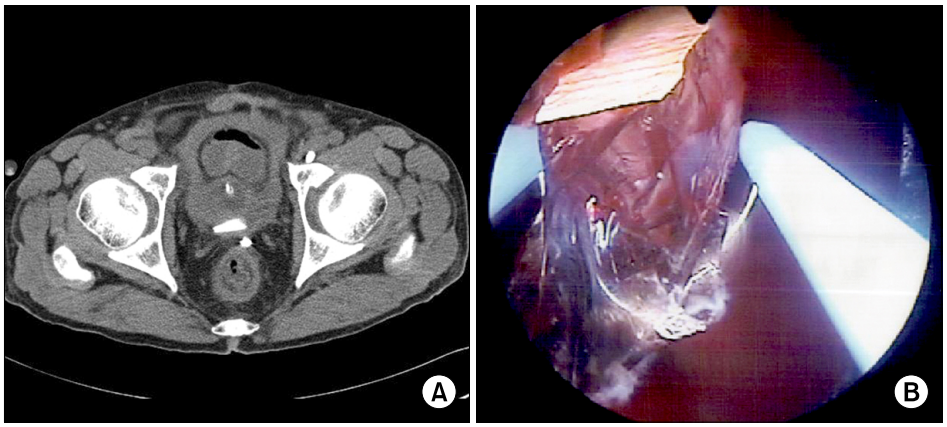

FIG. 3. (A) Follow-up CT shows a newly detected hyperdense lesion inside the bladder. (B) Cystoscopy shows an intravesical 2x0.7 cm glass particle.

Sometimes it is difficult to differentially diagnose a foreign body from other lower urinary tract diseases when patients do not admit that a foreign body was self-inserted, when patients with diminished mental capacity forget that they inserted a foreign body, or when patients are ignored because there has been no preceding incident [3]. In our case, because the patient was mentally challenged and intoxicated with alcohol, an accurate diagnosis was delayed, and we did not identify the needle-like object between the rectum and the bladder.

Extraction of the foreign object should minimize bladder and urethral injury. Most objects are removed by endoscopic or minimally invasive techniques; however, manipulation of the foreign body and urethral catheterization should be avoided until the exact type, shape, size, mobility, and location of the object are determined.

Longstanding foreign bodies may cause urinary retention, ascendant urinary tract infection, sepsis, and uremia [3,4], but penile necrosis is a rare complication associated with long-term hemodialysis in patients with diabetic renal failure [5,6]. It is also associated with pseudomonas sepsis [7]. In our case, urethral catheterization was performed based on the initial diagnosis of acute renal failure secondary to alcohol-induced urinary retention, which might have caused a delay in the removal of the foreign body and more aggravated sepsis. We presumed that the vascular insufficiency was attributable to sepsis, and the short-term hemodialysis might have led to the penile necrosis.

In conclusion, although the current case is an extremely rare example, in this situation, history taking and patient conditions are most important for early diagnosis and proper management.

Conflicts of Interest

The authors have nothing to disclose.

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