An unusual case of hematuria caused by a foreign body in the bladder: US and radiologic findings

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KEYWORDS

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Abstract The presence of a foreign body in the bladder or urethra is generally the result of autoerotic acts, psychiatric problems, or therapeutic interventions. It can cause hematuria, pain, and abscess formation, which may lead the patient to seek medical care, but the diagnosis is not always easy. This report describes a man who presented with several months' history of hematuria. Ultrasonography revealed a foreign body in the bladder, and the diagnosis was confirmed by abdominal radiography. The object, which was endoscopically removed, proved to be the ceramic sheath of an endoscopic resector that had been used 2 years earlier for transurethral resection of the prostate.

Sommario La presenza di corpi estranei in vescica o nell'uretra è dovuta principalmente a pratiche autoerotiche, psichiatriche, terapeutiche. L'ematuria, il dolore, la formazione di ascessi può portare il paziente a consultare il medico, ma non sempre la diagnosi è semplice. Riportiamo un caso di ematuria della durata di alcuni mesi in cui un esame ecografico ha posto il sospetto di corpo estraneo in vescica, confermato dalla successiva radiografia e che alla rimozione endoscopica si dimostrava essere la copertura in ceramica del resettore endoscopico in paziente sottoposto a TURP due anni prima.

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Introduction

Recurrent urinary tract infections or hematuria can be indicators of foreign bodies in the bladder or urethra.

A variety of objects inserted by patients themselves have been removed from the bladder and urethra [1–3]. In most of these cases, the insertion is part of an autoerotic act or the patient is a child or an individual with psychiatric problems. However, foreign bodies can also end up in the bladder as a result of therapeutic procedures or migrate to the bladder from nearby organs [4–6].

We report the sonographic and radiologic findings in a patient with a foreign body in the bladder that proved to

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Fig. 1 a. Axial scan of the pelvis: The bladder is incompletely filled, and its walls are thickened. On the posterior wall a linear hyperechoic image can be seen. Posterior shadowing is absent but there is reverberation, and sediment is also present. b. In this axial scan obtained with the patient in the left lateral decubitus position, the hyperechoic image has moved to the left.

be the detached tip of an endoscopic resector that had been used during transurethral resection of the prostate (TURP). The patient provided informed consent to the publication of this case description for the benefit of the scientific community.

Case report

A 77-year-old man was admitted to our hospital for chronic renal failure and multiple myeloma with recent-onset hematuria. Ultrasonography (US) revealed a partially filled bladder (due to the patient's dysuria) and an echogenic image on the posterior wall (Fig. 1a) with posterior reverberation. The object moved when the patient's position was changed (Fig. 1b). Plain film radiography of the pelvis revealed a radiopaque foreign body (Fig. 2). The patient reported that he had undergone transurethral resection of the prostate 2 years ago. The foreign body, which proved to be the detached ceramic tip of the sheath of the endoscopic resector, was removed endoscopically (Fig. 3) without difficulty.

Discussion

Foreign bodies in the bladder or urethra can have various causes. Most are the result of autoerotic practices, and the patient seeks medical care only when complications develop (e.g., pain, hematuria, abscess formation). Foreign bodies in the bladder can be divided into three groups [7]: those that have been introduced by the patient (the largest and most varied group), those introduced iatrogenically (ureteral dilators, double J ureteral catheters, surgical suture and staples, fragments of endoscopic material; and those introduced as the result of trauma, which are the least common and include fragments of bone or metal and bullets. The last group includes foreign bodies that have migrated from other areas of the body, e.g., other parts of the genitourinary tract (parts of anti-incontinence prostheses, components of penile prostheses, staples, etc); the female reproductive tract (e.g., intrauterine devices); the gastrointestinal tract (e.g., undigested fish bones or surgical staples); or the vascular tree (e.g., vascular prostheses).

Apart from the origin of the foreign body, the most important aspect of these cases is the type of patient. If previous surgery and trauma have been excluded, the only explanation is that the object has been inserted by the patient himself/herself. Diagnosis is complicated by the fact that the object may be detected years after its insertion.

Ultrasonography is often the first diagnostic examination ordered in a patient with recurrent urinary tract infections and/or hematuria [8]. For the detection of stones and tumors involving the kidney or the lower segments of the

Fig. 2 Anteroposterior radiograph of the pelvis reveals a radiopaque foreign body (approximately 2 cm long) in the bladder.

Fig. 3 The foreign body that was endoscopically removed from the bladder and the ceramic tip of the endoscopic resector.

ureters, US is more sensitive than perfusion urography which is more appropriate for detection of stones and tumors involving the mid- and upper segments of the ureters. There are, however, nonorganic causes of hematuria, such as the presence of a foreign body. In cases of this type, radiographs are fundamental. In fact, in our patient, US revealed only the presence of an anomalous object in the bladder that shifted when the patient's position changed. The fact that this object was a foreign body and its shape and size were revealed only by the abdominal X-ray. US is not capable of defining the margins of a foreign body in the bladder because when the US waves strike a metal object, it causes a posterior reverberation artifact that results in a distorted, anomalous representation of the object. Conventional radiography provides precise information on the size of foreign bodies, which are exclusively radiopaque and for this reason clearly depicted on X-rays.

Conventional anteroposterior and laterolateral views are generally sufficient to determine the exact location, the number, the size, and the orientation of the object although the use of contrast medium may be necessary in certain cases.

Conflict of interest

The authors have no conflict of interest.

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