Introdução pelo Próprio de Corpos Estranhos na Uretra e Bexiga - Relato de Três Casos Pediátricos

Self-Insertion of Foreign Bodies in Urethra and Bladder: Report of Three Pediatric Cases

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Abstract

Self-inserted urethrovesical foreign bodies are rare in children. We present three cases and discuss the clinical presentation, diagnosis and management of such patients.

In case 1, a 16-year-old boy introduced a wire into the urethra and partially into the bladder three days before. In case 2, a 4-year-old boy introduced a hairpin in the urethra in the same day. In case 3, a 11-year-old boy introduced a sewing needle in the urethra a few hours before. Cystourethroscopy and suprapubic cystotomy were used to remove the foreign bodies.

The presentation of urethrovesical foreign bodies can vary widely, as can the type of object inserted. Foreign body retrieval is determined by its morphology and the patient's conditions with the aim to minimise urothelial trauma and preserve erectile function. Definitive treatment is usually the endoscopic removal, however sometimes surgical intervention may be required. It is advocated follow-up with long duration, which is necessary to diagnose the long-term complications including urethral stricture.

Keywords: Child; Foreign Bodies; Urethra; Urinary Bladder

Resumo

Os corpos-estranhos introduzidos pelo próprio na uretra e bexiga são raros nas crianças.

Apresentamos três casos e discutimos a sua apresentação clínica, diagnóstico e abordagem.

No caso 1, um jovem de 16 anos introduziu um arame na uretra e parcialmente na bexiga três dias antes. No caso 2, uma criança de 4 anos introduziu um gancho de cabelo na uretra no mesmo dia. No caso 3, um jovem de 11 anos recorreu a urgência por ter introduzido uma agulha de coser na uretra algumas horas antes. Procedeu-se a uretrocistoscopia e cistostomia supra-púbica para remover os corpos estranhos.

A apresentação clínica de corpos estranhos uretrovesicais pode variar significativamente, bem como o tipo de objeto inserido. A abordagem de remoção de corpos estranhos é determinada pela morfologia dos corpos estranhos bem como pelas condições do doente, tendo como objetivo minimizar o trauma urotelial e preservar a função erétil. O tratamento definitivo habitual é a remoção endoscópica, contudo por vezes pode ser necessário intervenção cirúrgica. É recomendado um seguimento de longa-duração, que é necessário para diagnosticar complicações a longo-prazo, nomeadamente estenose da uretra.

Palavras-chave: Bexiga Urinária; Corpos Estranhos; Criança; Uretra

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Introduction

Self-inserted intra-vesical and intra-urethral foreign bodies are rare emergencies in Urology. There has been an increase in reports in the last few decades but they are still considered to be rare in children.[1,2]

Previous studies have reported several items which were found in the urethra and/or the urinary bladder including sharp and lacerating objects (pencils, needles, ball point pens, pen lids, garden wire, copper wire, speaker wire, safety pins), wire-like objects (telephone cables, rubber tubes, feeding tubes, straws, string), thermometers, glass rods, toothbrushes, candles, balloons, hairpins, broken keys, pocket batteries, parts of animals (bones, leeches, squirrel tail, snakes), plants and vegetables (carrot, beans, hay, cucumber, bamboo sticks, grass leaves), pieces of latex gloves, blue tack, intrauterine contraceptive devices, tampons, pessaries, fluids (glue, hot wax) and powders (cocaine).[2,3]

Most of the intravesical foreign bodies are the result of self--introduction but can also result from medical procedures, migration from the surrounding organs or penetrating injuries.[4] In selfintroduced foreign bodies most patients usually feel embarrassed, tend to postpone medical help and present usually after multiple removal attempts, which risk urethral injury and foreign body migration.[2,4,5]

Herein we present three cases of foreign bodies in the urethra, with one of them partially intravesical. We discuss the clinical presentation, diagnosis and management of such patients.

Case Report

Case 1

A sixteen-year-old boy was admitted to the emergency department with a history of self-insertion of a wire three days before. The patient denied symptoms, but his mother noticed blood in his

underwear. He had previous diagnosis of autism. On the physical examination there was blood in meatus. Posteroanterior and lateral pelvic radiogram showed a wire in the region of bulbar urethra and partially introduced into the bladder (Fig. 1). Under general anaesthesia a suprapubic cystotomy was performed and the wire was removed. On the fourth postoperative day the urethral catheter was removed, the patient voided without lower urinary tract symptoms and was discharged. He was on intravenous amoxicillin and clavulanic acid during hospitalization and on oral regimen until a 1-week period treatment was completed. He maintained his regular follow-up with his psychiatric assistant. On the ninth-month evaluation the patient was asymptomatic with a normal uroflow and no signs of urethral stricture. There were no other episodes in the 6 years of follow-up.

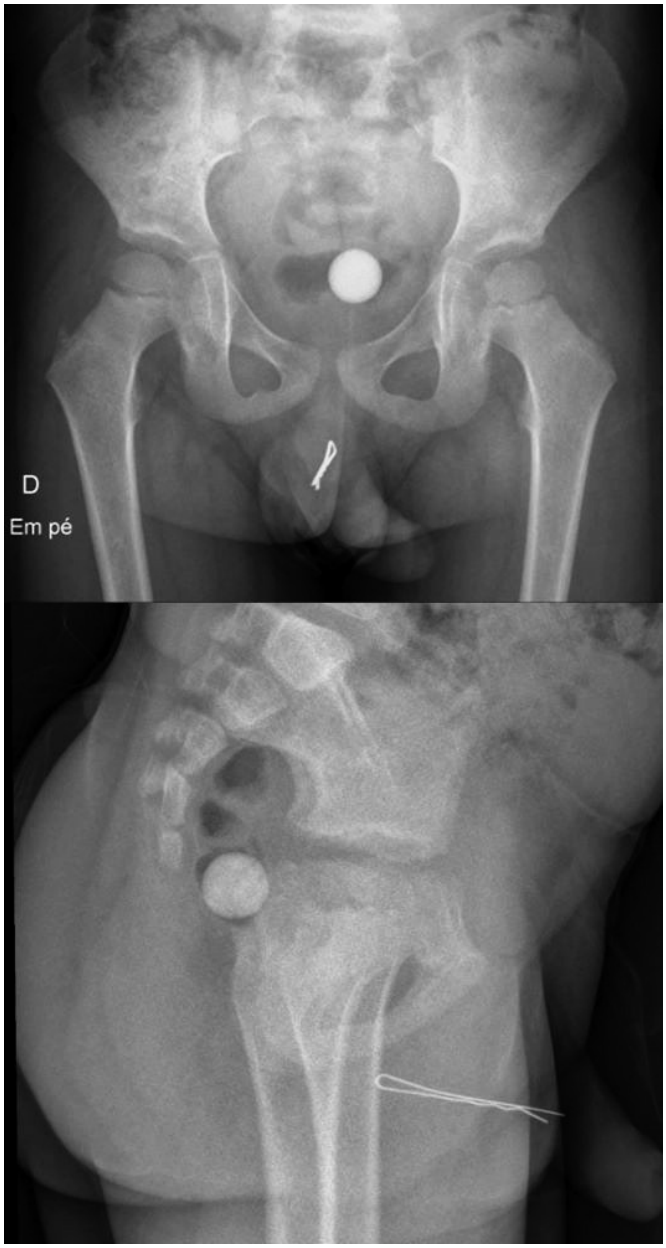

Figure 1. Posteroanterior and lateral pelvic X-rays showing a hair pin in the urethra and a marble in the rectum

Case 2

A 4-year-old boy was admitted to the emergency service with a history of self-introduction of a hairpin in the urethra in the same day. It was associated with dysuria. There was history of self-insertion of an object in the nasal cavity in the previous months. On physical examination there were no signs of trauma of the external genitalia, but a hard mass was palpated in the proximal portion of the penis. A posteroanterior and lateral X-ray of his pelvis demonstrated what appeared to be two foreign bodies (Fig. 2). One of these radio-opaque densities was a hairpin-like structure located in the penis shadow, the other one was round shaped located in the rectum and was thought to be ingested or inserted through anus. Urethroscopy was performed under general anaesthesia and a hairpin was observed in his bulbar urethra. The object was

Figure 2. Posteroanterior and lateral pelvic R-rays showing a wire in the urethra partially curled up in the urinary bladder

successfully retrieved endoscopically with grasping forceps. Cystoscopy revealed normal looking bladder mucosa and a discrete hyperaemia of the urethral mucosa. Cefazolin was administered as prophylaxis for a 24 hours period. On the first postoperative day the patient had no haematuria or other urinary symptoms and a glass marble was found on his faeces. He was discharged 24 hours later, after psychiatric evaluation.

Case 3

A 11-year-old boy presented to the emergency department with pain in the penis. He had no other urinary symptoms. On further questioning, he admitted the introduction of a sewing needle in the urethra a few hours before while he was home alone. There was no previous history of similar events. The external genitalia were normal on physical inspection and a needle-like structure was palpated in the bulbar urethra. Posteroanterior and lateral pelvic X-rays revealed a linear radio-opaque foreign body below symphysis pubis, overlying penile soft tissue shadow (Fig. 3). He was treated with antibiotics and analgesics. Urethroscopy showed a sharp sewing needle along the longitudinal axis of the bulbar urethra (Fig. 4). Urethroscopic removal of a tapestry needle, 8 cm long, was performed. Following this procedure, the patient had an uneventful postoperative course and was discharged 24 hours later on a one-week course of broad-spectrum antibiotics. He was referred to a psychological appointment where he kept regular follow-up. Relevant in his history was that he had changed his country residence 6 months before and was now used to stay home alone frequently. He was referred to a children and adolescents protection committee after evaluation of his social context.

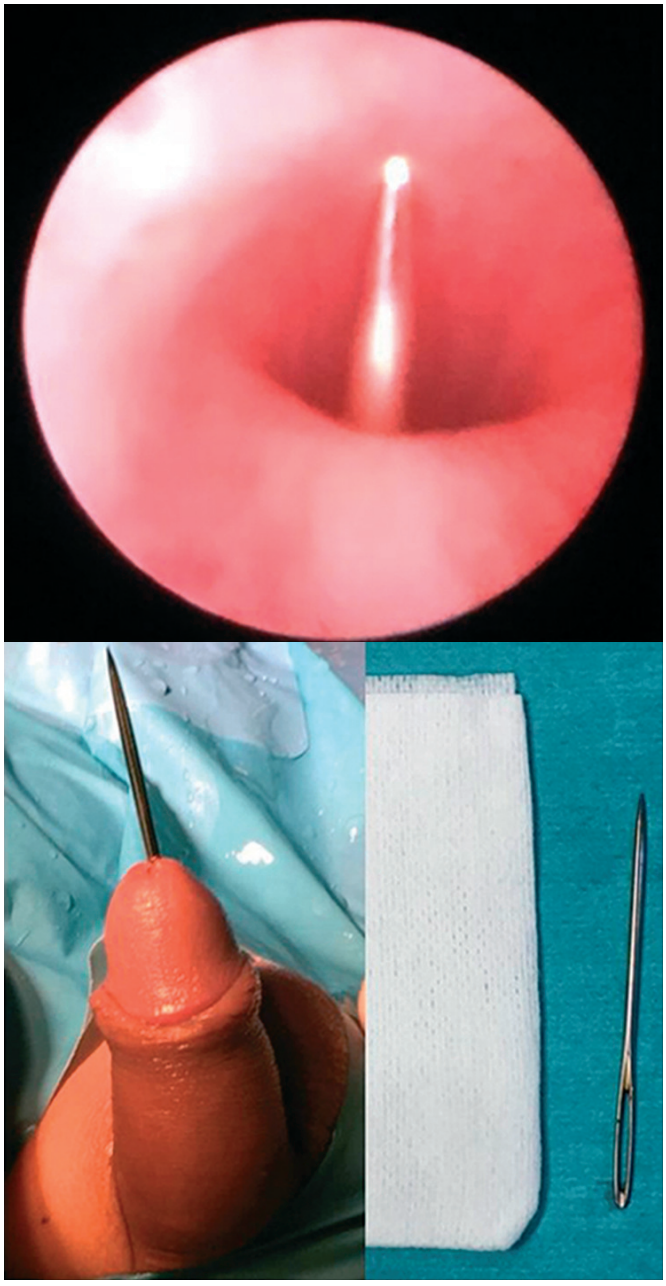

Figure 3. Cystoscopy and surgery photographs showing a needle in the bulbar urethra and its removal

Figure 4. Lateral pelvic X-ray showing a needle in the penis

Discussion

Foreign body insertions into the lower urinary tract have a low incidence, with males 1.7 times more likely to commit the act than females.[6,7] Females are at an increased risk for foreign body migration into the bladder due to short urethral length and straight trajectory of the female urethra.[6,7] The mean age of individuals is 35.8 ± 20 years. Self- introduction of the foreign bodies is rarely seen in children.[8] Generally, they are firstly observed at the start of the puberty as in cases 2 and 3. As for case 1, self-introduction before puberty is very rare.

Among children, the reasons for self-insertion of foreign bodies may reflect psychiatric disorders, accidental insertions, sexual stimulation, call for attention or simple curiosity. Even though the insertion of foreign bodies into the urinary tract is most commonly done by psychiatric patients, there are still some subjects not suffering from any comorbid psychiatric illnesses.[1,8]

Urethral and intravesical foreign bodies are important considerations in the differential diagnosis of lower urinary tract symptoms. Clinical presentation may vary from asymptomatic to swelling of external genitalia, lower abdominal pain, dysuria, urethral discomfort, pollakiuria, nocturia, haematuria, bloody or purulent urethral discharge, painful erection, difficulty in voiding, urinary retention. A high index of suspicion is necessary for diagnosis and management of these challenging cases. A urethral or vesical foreign body left untreated can lead to serious complications such as chronic cystitis, secondary stone formation, squamous cell carcinoma, urethral stenosis, periurethral abscess, and/or fistula, Fournier's gangrene or even death from sepsis.[2-5,8]

Many patients hide their history due to embarrassment or mental illness, and nonspecific symptoms make difficult to diagnose until imaging.[3] Maybe due to the innocence of their age group, as other authors reported, most of our patients (case 1 and 3) told their parents that they inserted an object in their genital area, so foreign body was suspected immediately.[8]

Plain-films of the pelvis are generally enough to evaluate number, location, size or orientation of radio-opaque objects for the purposes of treatment planning; computed tomography or ultrasound may be necessary if the object is radio-lucent.[2,6]

Immediate management of patients with foreign bodies consists of providing pain relief and control of voiding symptoms with either anticholinergic medications on case of irritative symptoms or bladder catheterization in case the patient is having difficulty in voiding.[2] Rahman et al recommends treatment with broad-spectrum antibiotics prior to foreign body removal. Palmer et al recommends empiric coverage for Gram-negative organisms for a duration of 1 week. In case of positive cultures or sepsis, antibiotic coverage should be broadened or tailored as appropriate.[6]

Definitive treatment is removal of the foreign bodies with minimal or no urethral morbidity and without compromising erectile function.[1,2] Choosing the optimal technique for removal of foreign bodies is dependent on the patient's condition and age, urinary tract injuries and the size, shape and material of foreign body and whether associated urinary calculi are present.[1,4] Various methods including meatotomy, cystoscopy, internal or external urethrotomy, suprapubic cystostomy, Fogarty catheterizations and injection of solvents have been used.[2]

The first-line treatment is minimally invasive removal by cystoscopy in which the object is grasped and extracted with forceps, graspers, snares or retrieval baskets.[2,4,6] Both rigid and flexible cystoscopy have been used via the transurethral route to extract intravesical bodies as well as ureteroscope in young patients.[1,2] Following removal, cystourethroscopy is important to diagnose urothelial injuries and to ensure complete removal of foreign bodies.[7]

When the object is visible through the external urethral meatus or is suspected to be small and distally located, gentle manual traction may be applied to try and deliver the object.[1,9]

External urethrotomy has also been described; however, this approach has some potential complications including dehiscence or periurethral abscess secondary to urethral damage should the object is impacted.[1,10]

An undetermined diameter, length or material of the object has been described as contraindication for endoscopic removal. Whenever a surgeon believes that an attempt of endoscopic removal will no doubt result in a traumatic or unsuccessful procedure, the patient should be directly taken for open surgery.[4]An intravesical wire usually curls up because of bladder contractions. In most cases, the formation of multiple knots may preclude safe transurethral removal and some authors have employed suprapubic cystotomy.[1,4] In the patient of case 2 with a partially knotted wire in his bladder, the decision was made to perform a suprapubic cystotomy to minimize further urethral trauma and expedite extraction.

In children, removal of intravesical foreign bodies represents a great challenge, as size of paediatric urethra may hinder safe transurethral removal. Elevated experience and high skills are needed to manage these cases, as we described the removal of a hairpin from a 4-year child urethra via cystoscopy with no morbidity. In this regard, many authors advise the percutaneous suprapubic route for retrieval of foreign body under direct vision by cystoscopy as the procedure of choice in children.[2]

Other therapeutic options have been used as a specially designed magnetic retriever for magnetic extraction of a small metallic intravesical object, such as a hair pin or clip. The YAG laser has also been used.[2,11] Paraffin and wax objects are frequently reported as foreign intraurethral and intra-vesical objects. Previously solvents (xylol, kerosen, benzene) were used to dissolve these objects however, since their known carcinogenic risk, its use is no longer recommended. Endoscopic removal of wax and paraffin is further complicated as these substances tend to float on water. To counteract this, some investigators have used carbon dioxide insufflation cystoscopy of the bladder and removal.[2,12]

Complications following removal of urethral foreign bodies include urethral false passages, mucosa tears with subsequent haemorrhage, urethritis, fistulae, urethral stricture, diverticulum and incontinence.[6,7] Urethral strictures are the most common delayed complication with a 5% incidence.[9]

It is advocated close follow-up with long duration, which may be necessary to diagnose the long-term complications including stricture disease.[2,6] At each visit, a careful voiding history should

be obtained, with careful attention to obstructive symptomatology.

It is recommended that routine Psychiatric / Psychological evaluations should be offered to all patients with intentional foreign body insertion to avoid missing any underlying psychiatric disorders, although this is controversial. Besides, there is a high incidence of recidivism, so patient education on long-term sequelae is important to try to avoid repeated occurrences.[3,6,13]

Conclusion

There are only a few case reports of self-insertion of foreign bodies in the urethra and bladder among children. These 3 cases highlight several important management principles when faced with such a rare urological emergency. The diagnosis and management of urethrovesical foreign bodies in children require expertise. Foreign body retrieval is guided by its characteristics as well as patient's conditions and can often be successfully achieved through endoscopic and minimal invasive techniques. The crucial point is to guarantee minimal morbidity and to prevent future complications so each case treatment should be tailored. ●

Responsabilidades Éticas

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