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## Self-introduction of urethral foreign bodies in adolescent boys: a rising problem

### Wprowadzanie ciał obcych do cewki moczowej przez nastoletnich chłopców: narastający problem

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#### Abstract

There has been an increase in reports of self-introduced urethrovesical foreign bodies, but they are still considered to be rare in children. A special type of foreign bodies are magnetic bodies inserted into the lower urinary tract – a phenomenon which clearly corresponds with an increase in paediatric magnet-related foreign bodies insertion requiring emergency care. We present two adolescent boys with voiding difficulty as a leading symptom following self-introduction of numerous magnetic beads (in the first case) and eyebrow tweezers (in the second case) treated during the last 3 months. Magnetic beads had to be removed operatively, eyebrow tweezers were removed from urethra manually. Our observations confirm that in the differential diagnosis of lower urinary tract symptoms especially in adolescents, the presence of foreign bodies should be taken into consideration.

**Keywords:** foreign body, magnets, self-insertion, urinary tract, adolescents

#### Streszczenie

W piśmiennictwie wzrasta liczba opisywanych przypadków wprowadzania ciał obcych do układu moczowego, jakkolwiek zjawisko to nadal oceniane jest jako rzadko występujące u dzieci. Szczególny typ przedmiotów wprowadzanych do cewki moczowej, również w populacji dziecięcej, stanowią magnetyczne ciała obce, których obecność wymaga nagłej interwencji. W artykule przedstawiono dwa przypadki nastoletnich chłopców leczonych z powodu narastających zaburzeń oddawania moczu wtórnych do wprowadzenia ciał obcych do cewki moczowej – licznych kulek magnetycznych u pierwszego pacjenta i pęsety do brwi u drugiego. Kulki usunięto operacyjnie, pęsetę udało się usunąć manualnie. Opisane przypadki potwierdzają, że w diagnostyce różnicowej objawów ze strony dolnych dróg moczowych powinno się uwzględniać obecność ciała obcego wprowadzonego do cewki lub pęcherza.

**Słowa kluczowe:** ciała obce, magnes, wprowadzenie ciała obcego, układ moczowy, nastolatki

## BACKGROUND

Insertion of various foreign bodies (FB) into the genitourinary tract is a well-known and documented phenomenon<sup>(1,2)</sup>. Self-introduced intraurethral/intravesical FBs are usually seen in adults<sup>(1-4)</sup> and generally considered a rare entity found in children<sup>(5-9)</sup>.

We report two cases of an adolescent boys treated at our department over the last 3 months, who were diagnosed with voiding difficulty as a leading symptom, secondary to numerous magnetic beads logged in the urethra and bladder in the first case, and intraurethrally inserted eyebrow tweezers in the second one. The raising problem of self-inflicted urinary tract FBs in pediatric population is presented.

## CASE STUDY

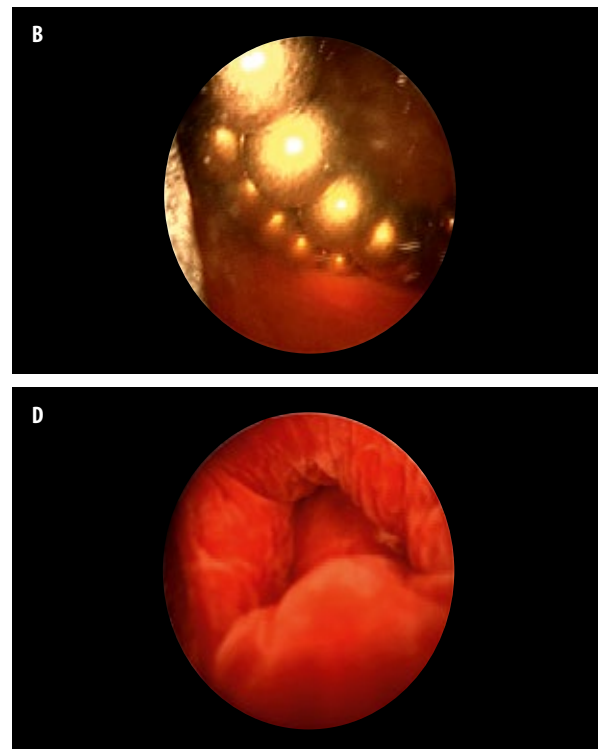
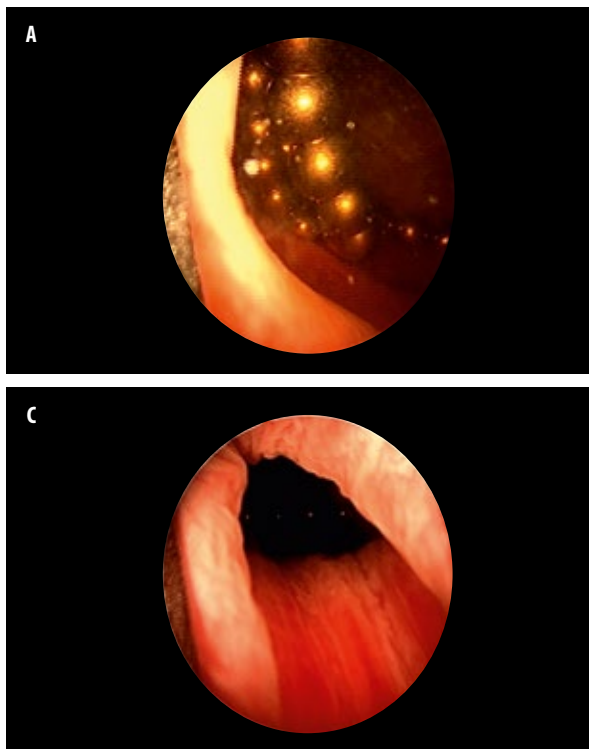
### Case I

A 14-year-old male was admitted as an emergency case because of gradually increasing voiding difficulties over the previous 2 days, finally resulting in anuria. Physical examination and basic laboratory tests were unremarkable. Ultrasound showed overdistended bladder and the possibility of the presence of spherical FBs within the bladder. Plain X-ray demonstrated metallic beads in a urinary bladder and a posterior urethra (Fig. 1). Initially, the patient denied self-insertion of any FB, but after X-ray examination, he conceded that he had inserted about 30 magnetic beads into his urethra. Cystoscopy was carried out



Fig. 1. Patient 1: pelvic X-ray – the presence of multiple radiopaque metallic beads within the bladder and posterior urethra

confirming the presence of all magnetic beads within the bladder (Fig. 2 A–D). After an unsuccessful attempt to remove FB from the bladder endoscopically, small cystostomy was performed and 51 magnetic beads were successfully removed (Fig. 3 A–D). Postoperative period was uneventful and the boy was discharged home with scheduled psychological evaluation.



432 Fig. 2 A–D. Patient 1: cystoscopy – all inserted magnetic beads present within the bladder

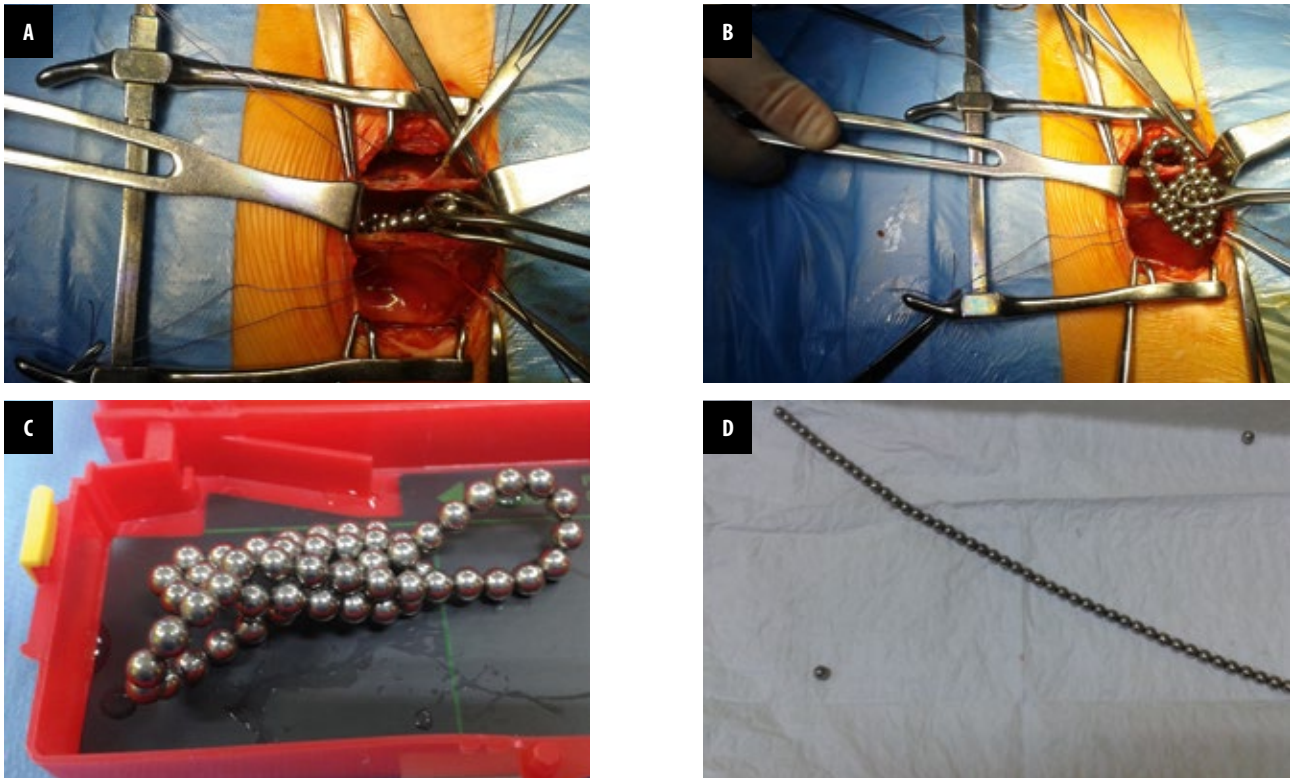


Fig. 3 A–D. Patient 1: intraoperative view – magnetic beads (51) removed from the bladder

### Case II

Parents of a 15-year old autistic boy noticed that he did not urinate over the last 24 hours. On physical examination, a swollen, tender and painful penis was found. The boy denied self-insertion of FB into the urinary tract. X-ray revealed the presence of metallic tweezers within the urethra (Fig. 4). Under local anesthesia, tweezers were successfully removed. Between the tweezers branches, cotton



Fig. 4. Patient 2: pelvic X-ray – the presence of radiopaque metallic pincer within the urethra

buds used by the patient to insert the tweezers were found (Fig. 5 A, B). Foley catheter was left in the bladder for 3 days. No voiding difficulties were observed during the follow-up.

### DISCUSSION

Lower urinary tract FBs have been reported in both adults and children. Self-introduced foreign bodies are still considered rare in children<sup>(5–9)</sup>. The spectrum of inserted FB includes metal rods, pins, sewing needles, screws, fishhooks, electric wires, pencils, hair clips, cotton buds. Recently, there has been an increasing number of reports of self-inflicted magnetic FB<sup>(10–15)</sup>. This phenomenon correlates with increasing rates in pediatric magnet-related FB requiring emergency care, however, most of them are ingested objects<sup>(16–18)</sup>.

In children usually a delayed presentation is observed, mainly because of the patient's embarrassment, however, such symptoms as voiding difficulty, urinary frequency, dysuria, hematuria, lower abdominal pain or urinary tract infection arising from the incident can also be noted and sometimes predominate. Many reports emphasize that lower urinary tract symptoms (LUTS) are most commonly observed<sup>(1–3,5,7,8)</sup>. In both our patients the predominating clinical symptom was increasing voiding difficulty and both boys initially denied self-insertion of FB into the urinary tract.

Self-inserted foreign bodies into the urinary tract often necessitate urgent assessment and proper intervention. Possible complications related to intravesical FB include urinary infections, voiding difficulty, bladder outflow



Fig. 5 A, B. Patient 2: Removal of FB (penset) from the urethra

obstruction, bleeding and bladder perforation. A delayed recognition and treatment usually result in chronic conditions, such as repeated infections, urinary retention, calcification of FB, FB migration, urethral stenosis or even squamous cell carcinoma<sup>(1-5,7,8,10-12)</sup>.

Generally, the method of removal of urethral and bladder foreign bodies depends on their size, number, shape, nature and mobility. Also, patient's age plays an important role in finding the most suitable method for removal. In adults, most FBs are possible to be removed with grasping forceps during cystoscopy. Therefore, endoscopic approach is advised as the first-line treatment, however, open removal via suprapubic cystostomy is sometimes required. In children, especially in males, the size of urethra is sometimes a great limitation to successful transurethral extraction of FB<sup>(1-3,5,7,8)</sup>. Management of intravesical magnetic FB is challenging<sup>(11-13,15,19)</sup>. Their removal during cystoscopy is usually very difficult or even impossible, because they are strongly attached to each other, however, cases of successful endoscopic management of transurethrally inserted magnetic beads are described<sup>(11,14)</sup>. Open removal is therefore suggested as a first-line treatment in such cases<sup>(12,19)</sup>.

Also in our first patient, an endoscopic attempt was unsuccessful and open cystostomy was necessary to evacuate FB. The second our patient represents the uncommon case of the presence of FB inserted into the urethra. There is a limited number of such reports in adolescents<sup>(9)</sup>.

## CONCLUSIONS

The aim of the paper was to emphasize a rising problem of self-introduced urethrovesical foreign bodies in children, especially in adolescents. Foreign bodies in a bladder should always be considered a possible cause of LUTS. Prompt recognition of foreign body helps to treat such patients appropriately.

### Conflict of interest

The authors do not report any financial or personal connections with other persons or organizations, which might negatively affect the contents of this publication and claim rights to it.

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