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Endoscopic retrieval of a long intravesical foreign body in a 13-year-old boy: A rare and challenging case of pediatric urological foreign body

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Abstract
Intravesical foreign bodies in children are rare and often result from self-insertion driven by curiosity or behavioral factors, posing both diagnostic and therapeutic challenges. We report the case of a 13-year-old boy who presented with a two-week history of intermittent painless gross hematuria, with no lower urinary tract symptoms or prior history of trauma or instrumentation. Clinical examination was unremarkable, and imaging with plain radiography and non-contrast CT scan revealed a long, radiopaque, coiled object within the bladder extending into the anterior urethra. A diagnosis of self-inserted intravesical and intraurethral foreign body was made. The patient underwent rigid pediatric cystoscopy under general anesthesia, during which a 105 cm metallic wire was identified and carefully extracted stepwise under direct vision. The entire wire was removed without complications, and the postoperative course was uneventful. At two-week follow-up, the patient remained asymptomatic with no residual abnormalities on ultrasonography. Psychiatric counseling revealed curiosity-driven behavior without evidence of psychosis or abuse. This case underscores the importance of considering foreign bodies in children presenting with unexplained hematuria, highlights the role of imaging in diagnosis and operative planning, and demonstrates that endoscopic removal can be a safe and effective approach even for unusually long intravesical objects. Multidisciplinary care, including psychiatric evaluation, is essential for comprehensive management and prevention of recurrence.

Keywords: Pediatric urology, Intravesical foreign body, Hematuria, Endoscopic retrieval, Cystoscopy

Introduction
Intravesical foreign bodies in the pediatric population are rare occurrences, frequently linked to self-insertion driven by curiosity, psychiatric factors, or sexual stimulation. Such cases in children especially boys represent a significant clinical challenge given the narrow and lengthy male urethra, which often complicates retrieval efforts [1, 2]. Reported objects in similar contexts have ranged from metallic pins and electronic wires to magnetic beads and other unusual items [3-5].

Endoscopic techniques, such as cystoscopic retrieval, are preferred due to their minimally invasive nature. Their feasibility, however, strongly depends on the size, shape, length, and material of the foreign object, as well as its location and any associated trauma to the urinary tract [1, 3]. In male children, open surgical approaches may be required more often due to anatomical constraints and the technical difficulties of transurethral extraction [1]. Herein, we present an unusual case of a 13-year-old boy with a long intravesical foreign body, successfully removed via cystoscopic retrieval. This report underscores the diagnostic and therapeutic challenges posed by such cases and emphasizes the importance of tailored surgical planning in managing pediatric urological foreign bodies.

Case presentations
A 13-year-old boy presented to the Urology Outpatient Department of Rajarajeswari Medical College, Bangalore, with complaints of intermittent painless gross hematuria for the past two weeks. There were no associated lower urinary tract symptoms such as dysuria, urgency, frequency, or suprapubic pain. Both the patient and his parents denied any prior history of trauma or urethral instrumentation. On further confidential interviewing, the boy initially withheld information regarding any act of foreign body insertion.

On physical examination, the child was healthy, well-oriented, and afebrile. There was no suprapubic tenderness, palpable mass, or external genital abnormalities. No signs of external injury or infection were noted. Routine blood investigations were within normal limits.

Urinalysis revealed gross hematuria without significant pyuria or bacteriuria. A plain X-ray of the kidney, ureter, and bladder (KUB) showed a long, radiopaque, coiled structure within the pelvis extending into the urethral region. A non-contrast CT scan of the KUB confirmed the presence of a tubular foreign body, coiled within the bladder and extending into the anterior urethra. Based on these findings, a diagnosis of a self-inserted intravesical and intraurethral foreign body, suspected to be an electronic wire, was made.

The patient was taken up for surgery under general anesthesia. Rigid pediatric cystoscopy revealed a long metallic wire, coiled within the bladder, with its distal end extending into the urethra. Cystoscopic retrieval of the wire was performed. The wire was carefully unraveled and slowly delivered through the urethra under direct cystoscopic visualization using grasping forceps. The entire wire was removed successfully without causing injury to the bladder or urethral mucosa. Intraoperatively, there was no evidence of bladder wall erosion, stone formation, or active bleeding. A Foley catheter was placed postoperatively, which was removed after 48 hours, and the patient was able to void normally.

The postoperative period was uneventful, and the boy was discharged on the second postoperative day. At the two-week follow-up, he remained asymptomatic, with no recurrence of hematuria or dysuria. Ultrasonography of the bladder revealed no residual foreign body or abnormality. The patient and his family were referred for psychiatric counseling to address underlying behavioral factors and to prevent recurrence. Psychological evaluation later revealed curiosity-driven behavior without evidence of psychosis, coercion, or abuse.

Discussion

Intravesical and intraurethral foreign bodies in pediatric patients are rare but present unique diagnostic and therapeutic challenges. Most cases stem from self-insertion due to curiosity, psychiatric predispositions, or accidental exploration especially in male adolescents. As highlighted in a case series, children between the ages of 9 and 13 commonly presented with objects such as skipping ropes or hairpins, often inserted out of curiosity, and many required surgical intervention due to the limitations of pediatric urethral anatomy or the object's size or configuration [6]. In our patient a 13-year-old boy an unusually long (~105 cm) coiled electronic wire posed significant retrieval challenges, both technically and anatomically [3].

Delayed presentations are frequent due to embarrassment, fear, or lack of awareness, leading to potential complications like urinary tract infections, hematuria, or even fistula formation and stone development [7]. Although this patient presented relatively early within two weeks and with minimal symptoms beyond painless gross hematuria, the absence of classic lower urinary tract symptoms underscores the need for a high index of suspicion for foreign bodies in similar clinical contexts.

Imaging plays a pivotal role in both diagnosis and operative planning. Plain radiographs effectively detect radiopaque objects, while CT imaging provides precise localization and insight into the trajectory or configuration of irregularly shaped or lengthy materials [6-8]. In this case, the combination of KUB X-ray and NCCT allowed for accurate visualization of the coiled wire spanning the bladder and anterior urethra, facilitating safe endoscopic planning.

Endoscopic retrieval is the first-line modality in pediatric patients, due to its minimally invasive nature. However, its success largely depends on the object's dimensions, composition, and configuration, as well as the patient's urethral calibre [6, 8, 9]. In a multicase pediatric series, only one-third of intravesical foreign bodies were removable transurethrally, while others required open cystotomy [6]. Likewise, a case involving magnetic beads in a 13-year-old boy showed that cystoscopic removal was successful in some but not all instances some requiring laparoscopic or open approaches [8].

In our case, despite the considerable length and risk for mucosal injury, direct cystoscopic visualization allowed full removal without need for open surgery or additional intervention. The successful outcome underscores that even complex intravesical foreign bodies can be safely managed endoscopically by experienced hands when planning is meticulous.

Post-extraction, attention must be paid to detecting any trauma, residual foreign material, hemorrhage, or secondary complications, all of which were absent in this patient. Furthermore, postoperative follow-up using imaging and clinical evaluation is essential to confirm complete removal and bladder integrity.

Lastly, a comprehensive management plan must extend beyond surgical treatment to include psychosocial assessment and counseling. Behavioral triggers such as curiosity-driven exploration should be addressed sensitively, and psychiatric evaluation is recommended to identify and mitigate recurrence risk. In this instance, psychological evaluation uncovered curiosity rather than pathological behavior, and counseling was arranged accordingly.

Conclusion

Intravesical foreign bodies in pediatric patients are rare and often present with vague or misleading symptoms, making early diagnosis challenging. This case highlights the importance of maintaining clinical suspicion when evaluating unexplained hematuria in children. Radiological imaging is crucial for accurate localization and operative planning, while endoscopic retrieval remains the preferred minimally invasive technique whenever feasible. Even in cases involving unusually long or complex objects, meticulous cystoscopic extraction can be performed safely and effectively, avoiding the morbidity of open surgery. Equally important is the role of psychiatric evaluation and counseling to address behavioral triggers and prevent recurrence, ensuring comprehensive patient care.

Fig 1: X-ray (KUB) showing coiled radiopaque foreign body in bladder

Fig 2: Extracted intravesical wire (approx. 105 cm) placed in kidney tray

Fig 3: Foreign body untangled and length measured

Conflict of Interest
Not available

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