



Pediatrics

Intravesical foreign bodies in pediatric: A case report highlighting the critical role of psychosocial assessment and intervention

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ABSTRACT

A 12-year-old female presented with lower abdominal pain and hematuria following the self-insertion of a pencil into her bladder. Imaging revealed a 10.2 cm radiopaque object, which was removed intact via cystoscopy. Postoperative recovery was uneventful, and psychiatric evaluation diagnosed mild depression, highlighting the need for integrated psychosocial intervention. This case underscores the critical importance of a multidisciplinary approach that combines medical and psychosocial care in the management of intravesical foreign bodies, particularly in pediatric populations. Proactive measures, including mental health education and early psychosocial support, are essential for prevention and recurrence mitigation.

1. Introduction

Foreign bodies in the bladder or urethra present a multifaceted clinical challenge necessitating a comprehensive understanding of both physiological and psychological dimensions. These cases typically result from iatrogenic injuries, self-insertion, sexual abuse, or migration from adjacent anatomical structures. Although such incidents are documented across all age groups, occurrences in pediatric populations are notably rare and often complicated by underlying psychosocial factors.

Extensive medical literature highlights a diverse range of foreign objects retrieved from the bladder, spanning common household items to medical devices. Clinical manifestations frequently include urinary tract infections, discomfort, and hematuria, though physical examination may reveal no overt abnormalities. Obtaining an accurate medical history is particularly challenging in cases involving self-insertion, often due to embarrassment or reluctance to disclose sensitive information.¹ Diagnostic strategies typically employ imaging modalities such as radiography for radiopaque objects and ultrasonography for others.

Technological advancements in endoscopic procedures have transformed management approaches, minimizing the need for open surgical interventions.² However, this challenge extends beyond object removal. These cases often involve complex psychological dynamics, including fear of embarrassment, leading to delayed presentation and various psychosocial vulnerabilities that require attention.³

This report underscores the critical importance of combining psychosocial assessments with medical management to optimize patient outcomes, adhering to the SCARE criteria.⁴

2. Case presentation

A 12-year-old female with a Body Mass Index (BMI) of 27.4 presented to the emergency department following the insertion of a pencil into her urinary tract approximately 5 h earlier. Despite presenting with hematuria, the patient maintained urinary function and reported lower abdominal pain rated 5 on the Visual Analog Scale (VAS). She denied any prior incidents of foreign-body insertion. Physical examination and vital signs were unremarkable. Imaging revealed a hyperechoic lesion on ultrasonography (Fig. 1) and a 10.2 cm radiopaque foreign body within the pelvic cavity on radiography (Fig. 2).

The patient underwent urethrocystoscopy for foreign body removal. Using a 19 Fr cystoscope with a 0-degree lens, the pencil was grasped with forceps at the tip (Fig. 3) and extracted intact with biopsy forceps. The removed object measured 10.2 cm in length and 0.6 cm in width (Fig. 4). The bladder wall appeared intact, and a 14 Fr Foley catheter was inserted post-procedure. Perioperative care included parenteral analgesics and prophylactic antibiotics. A subsequent psychiatric evaluation revealed vulnerabilities, peer pressure, body image concerns, and risk-taking behaviors factors that concluded the mild depression

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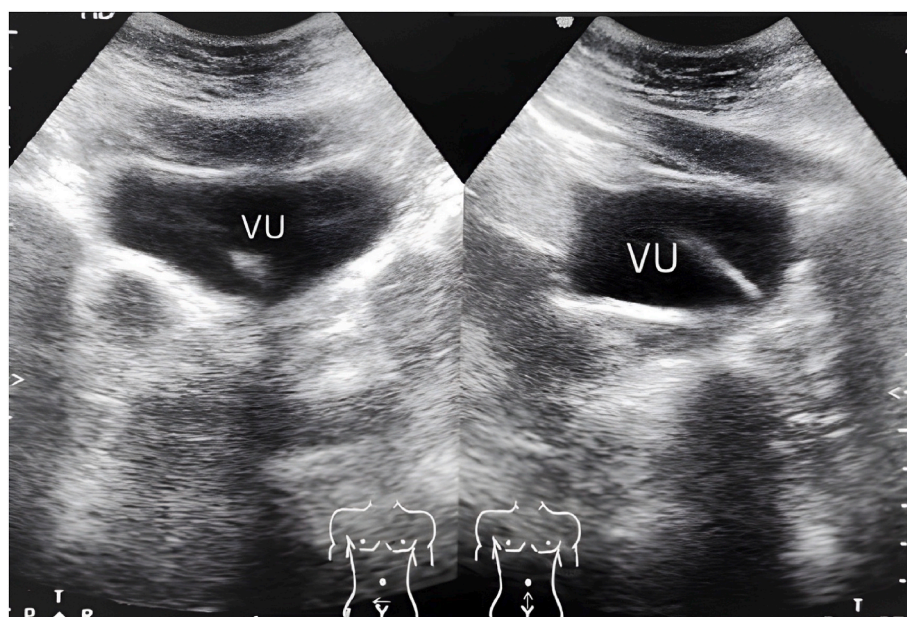


Fig. 1. Ultrasonographic in transverse and longitudinal views showing a hyperechoic lesion in the bladder.



Fig. 2. Abdominal X-ray showing a radiopaque surrounded by radiolucent, elongated object (pencil).

assessment, warranting the initiation of fluoxetine (10 mg daily) and lorazepam (0.5 mg daily).

The patient was discharged in stable condition on postoperative day two, with the foley catheter removed. She was prescribed outpatient antibiotics, analgesics, and continued psychiatric medications.

3. Discussion

The bladder is the most frequently reported site for foreign bodies within the urinary system. Typical symptoms include urinary retention, dysuria, increased frequency of urination, reduced urine volume, nocturia, hematuria, and pelvic discomfort.⁵ Foreign bodies may enter the bladder via self-insertion, iatrogenic events, or migration from adjacent organs. Cases involving self-insertion are often associated with mental health conditions, intoxication, cognitive impairments, or sexual experimentation.⁶

Diagnosis relies on a meticulous clinical history and targeted physical examination. Imaging modalities such as kidney-ureter-bladder radiography and ultrasonography are instrumental in confirming the presence of foreign objects. Minimally invasive endoscopic techniques, including cystoscopy-guided extraction and transurethral cystolitholapaxy, are the preferred management options.⁷ Urethrocystoscopy remains the gold standard for diagnosing and managing intravesical foreign bodies.⁸

Smaller objects are typically extracted intact, while larger objects may necessitate disassembly. In women, endoscopic removal is typically sufficient owing to easier urethral access, but sharp or large objects may necessitate open surgery.⁹ Pediatric cases pose additional challenges due to the smaller urethral caliber, often requiring open surgical approaches when endoscopy is deemed too risky.

This case underscores the intricate interplay between psychological vulnerabilities and clinical outcomes. Foreign bodies in children's bladders often enter through urethral insertion, typically for sexual pleasure or due to psychologic disorders, but patients often delay seeking help due to embarrassment.¹⁰ Factors such as pre-existing mental health conditions, body image concerns, and peer influences emerged as significant contributors to risk-taking behaviors.

The documented relationship between low self-esteem and heightened susceptibility to peer pressure underscores the importance of a comprehensive psychological screening. Social determinants, including peer relationships and support systems, play a pivotal role in risk-taking behaviors, and evidence suggests that social isolation and body shaming significantly increase vulnerability. These findings emphasize the necessity for preventive strategies, including comprehensive anatomical education and early mental health interventions, particularly within school-based support systems. Mental health conditions, such as

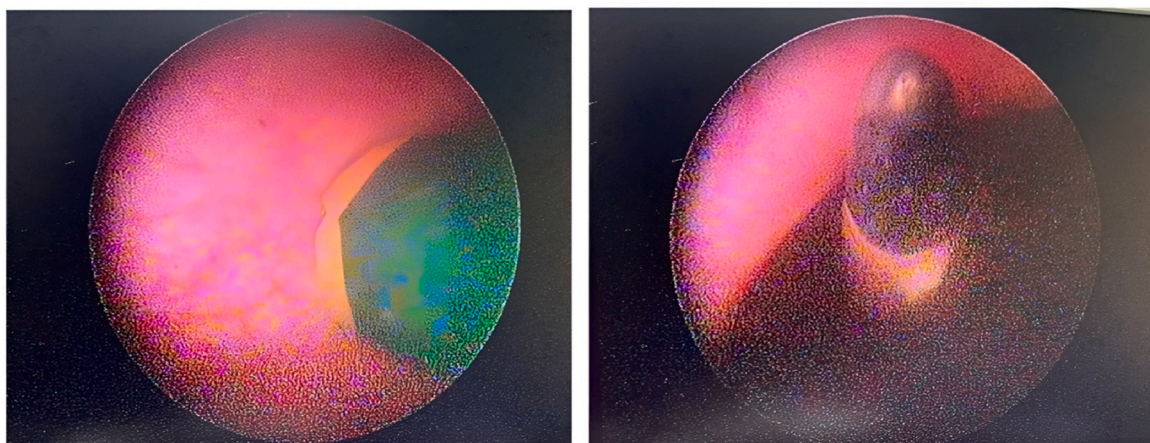


Fig. 3. Cystoscopy 19Fr with Lens 0° showing the Back and the Tip part of the pencil.



Fig. 4. The pencil was successfully evacuated to a length of 10.2 cm and width of 0.6 cm.

depression and anxiety, are significant risk factors for complications in various medical contexts, including self-insertion of foreign bodies or ingestion.¹¹ Healthcare implications derived from this series underscore the importance of integrated medical-psychological care protocols, highlighting the value of non-judgmental history-taking and sustained follow-up care. Psychological interventions, such as cognitive behavioral therapy and motivational interviewing, can improve health outcomes in pediatric chronic illnesses. Research on antidepressant use in pediatric populations has revealed mixed findings, and medical treatments such as fluoxetine and escitalopram are FDA-approved for pediatric major depressive disorder (MDD), showing marginal benefits over placebo in short-term trials.¹²

4. Conclusion

Routine psychiatric evaluations should be incorporated into the management of patients presenting with intravesical foreign bodies, to identify potential underlying psychological conditions. A holistic approach that integrates medical, psychological, and social interventions is essential for successful outcomes and recurrence prevention in pediatric cases.

Research registration number

1. Name of the registry: None
2. Unique identifying number or registration ID: None
3. Hyperlink to specific registration (must be publicly accessible and will be checked): None.

CRediT authorship contribution statement

Francia Bunga Rante Allo: Writing – original draft, Resources, Funding acquisition, Formal analysis, Data curation. **Ahmad Zulfan Hendri:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Data curation, Conceptualization. **Prahara Yuri:** Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Zico Yusuf Alfarizi:** Writing – original draft, Resources, Project administration, Data curation.

Ethics approval and consent to participate

Not Applicable.

Consent for publication

Written informed consent was obtained from all patients for publication and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal upon request.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Competing interests

The authors declare that they have no competing interest.

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