

## Accidental Ingestion of a Sharp Metallic Object in a Young Child: A Case Report

Maryam Marefat<sup>1</sup>, \* Saeed Mohammadi<sup>1</sup>, Farzane Ghanei Zare<sup>2</sup>,  
Seyed Ali Jafari<sup>1</sup>

<sup>1</sup> Department of Pediatric Gastroenterology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

<sup>2</sup> Department of Geriatric Nursing, Faculty of Nursing and Midwifery, North Khorasan University of Medical Sciences, Bojnourd, Iran.

### Abstract

**Background:** Accidental ingestion of sharp metallic objects in children can lead to mucosal injury, penetration, or perforation. Management depends on the object's location, symptom severity, and progression on serial imaging.

**Case Presentation:** A 4-year-old boy presented with painful defecation and non-bloody stools. Caregiver history indicated ingestion of a sharp metal pin from a hairbrush about two weeks prior. Vital signs were stable, and no signs of peritonitis were observed. Plain radiography revealed a sharp radiopaque foreign body in the pelvis. A rectosigmoidoscopy without bowel preparation did not visualize the object. The patient was closely monitored with serial examinations and radiographs. As the foreign body did not pass and remained fixed on imaging, abdominopelvic computed tomography (CT) was performed, showing a metallic-density foreign body adjacent to the distal rectum with surrounding edema/stranding, raising concern for possible penetration. The patient underwent exploratory laparotomy, and the pin was removed from the rectum with extension into surrounding pelvic tissue. He recovered without documented complications.

**Conclusion:** A sharp metallic foreign body with a fixed location on serial imaging, especially in a symptomatic child, should prompt early escalation to cross-sectional imaging and surgical consultation to prevent delayed penetration or perforation.

**Key Words:** Endoscopic removal; Foreign body ingestion; Pediatric emergency; Sharp metallic object.

\* Please cite this article as: Marefat M, Mohammadi S, Ghanei Zare F, Jafari S.A. Accidental Ingestion of a Sharp Metallic Object in a Young Child: A Case Report. J Ped Perspect 2025; 14 (1):19889-19894. DOI: 10.22038/jpp.2026.92232.5610

### \*Corresponding Author:

**Saeed Mohammadi;** Fellowship program, Department of Pediatric Gastroenterology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran. Tel: +989153776327; Email: Saeedmohammadi1975@gmail.com

## 1- INTRODUCTION

Accidental ingestion of foreign objects is a common issue in pediatric populations, especially among children aged six months to three years, who have a natural inclination to explore their surroundings orally (1). While many ingestions resolve spontaneously, they can lead to severe complications, including esophageal obstruction, mucosal injury, or perforation, depending on the object's type, size, and location (2). It is estimated that a considerable percentage of pediatric cases remain unwitnessed and asymptomatic, complicating timely diagnosis and management (1,3).

However, symptoms may be subtle and non-specific, and a persistent fixed location on imaging should prompt timely escalation even when the child is otherwise stable. Metallic objects, such as coins or small accessories, are among the most frequently ingested items in children, and sharp metallic foreign bodies present a higher risk of GI tract injury (4,5).

Various guidelines highlight that sharp or pointed objects warrant prompt endoscopic removal when accessible, because the risk of mucosal injury or perforation increases as these items progress through the gastrointestinal tract and may reach 15% to 35% in some reports (6). The case described here is notable because a sharp metallic object persisted in a fixed pelvic location for weeks and ultimately required surgical removal, despite the absence of systemic toxicity.

## 2- CASE PRESENTATION

A four-year-old boy presented to our outpatient clinic with a complaint of painful defecation and non-bloody stools. Two weeks prior, the patient had swallowed a metal pin from a hairbrush. The object was described by the caregiver as a sharp metal pin from a hairbrush. Exact dimensions and shape details (e.g., length, diameter, and tip configuration)

were not recorded at presentation. The reported timing of ingestion (approximately two weeks prior) was based on caregiver history; there was no additional external verification available. Vital signs were stable, and no signs of peritonitis were observed. A plain radiograph of the abdomen and pelvis was requested. Radiographic examination showed the presence of a sharp opaque foreign body in the pelvis (Figure 1).

Since the child was symptomatic, we decided to perform rectosigmoidoscopy, but because the bowel was not prepared, we were unable to detect the foreign body. Given the sharp nature of the object and its presumed distal location on plain radiography, a bowel-prepped colonoscopy would have provided a more complete evaluation. In our setting, the initial attempt was a limited rectosigmoidoscopy performed without bowel preparation, which reduced visualization and did not allow definitive localization or retrieval. We therefore treated this as an incomplete assessment and continued close clinical and radiographic follow-up while arranging further evaluation. The patient was scheduled for routine outpatient follow-up at two-week intervals with repeat clinical assessment and radiography, with a low threshold to escalate to cross-sectional imaging and surgical consultation if the object failed to progress or if symptoms worsened. The parents were advised to monitor for passage of the object in the stools.

Considering no defecation of the sharp object and its fixed location in serial radiographs in one month follow-up visit, spiral contrast-enhanced and non-contrast-enhanced abdominopelvic computed tomography (CT) scan was ordered. The abdominopelvic CT scan depicted a foreign body with metal density in the soft tissue anterior to the coccyx and posterior to the distal portion of the rectum with extension toward the lateral pelvic muscles

(Figure 2). The CT scan images also revealed edema and stranding surrounding the mentioned foreign body but no evidence of a distinct collection was noted. Additionally, the CT scan showed that the

foreign body was located tangent to the rectum (Figure 3 & 4). However, due to the metal artifact caused by the foreign body, penetration to the rectal wall cannot be judged.



**Figure-1 :** Abdominopelvic radiograph 2 weeks after foreign body ingestion.



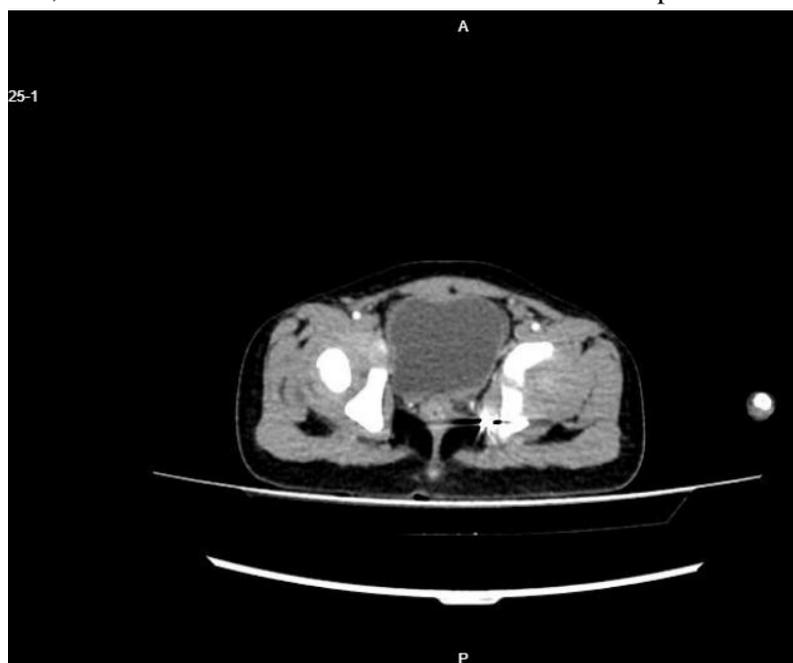
**Figure-2 :** Abdominopelvic radiograph 6 weeks after foreign body ingestion.

Six weeks after ingestion, the foreign body had still not passed and remained fixed on serial imaging. CT findings, including surrounding edema/stranding and a trajectory toward

adjacent soft tissues, raised concern for possible penetration. After a surgical consultation, the patient underwent exploratory laparotomy for definitive

management. Following the induction of general anesthesia and preparation and draping of the surgical site, the patient was placed in a supine position, and the abdominal wall was incised below the umbilicus. The stomach, duodenum, gallbladder, appendix, and small intestine were all normal without any pathological findings. The colon and rectal area were also normal and contained fecal material. A sharp foreign body was observed in the middle rectum, with half of it located in

the rectum and the other half stuck in the pelvic bone. The foreign body was gently removed from the rectum and primary closure of the abdominal fascia was performed. Postoperatively, the patient was monitored for abdominal pain, fever, rectal bleeding, and the return of bowel function. Details of antibiotic use and postoperative laboratory testing were not available in the records accessible for this report. The patient recovered without documented complications.



**Figure-3 :** Transverse view of the pelvic CT scan.



**Figure-4:** Coronal view of the pelvic CT scan.

### 3- DISCUSSION

This case highlights several practical decision points in managing sharp foreign bodies that appear to be in the distal bowel. First, the child was not systemically ill and had stable vital signs, but he was symptomatic (experiencing painful defecation), and serial radiographs suggested a persistent foreign body in a fixed pelvic location. A fixed position over repeated radiographs in a symptomatic child should be treated as a warning sign, and earlier escalation (CT and surgical evaluation) is reasonable to reduce the risk of delayed perforation, abscess formation, or fistula. In general, sharp or pointed objects carry a significant risk of mucosal injury and perforation, and many guidelines support urgent endoscopic retrieval when feasible and escalation to surgical management when the object does not progress or when penetration is suspected. In our case, the initial rectosigmoidoscopy was performed without bowel preparation and did not visualize the object, which limited its diagnostic and therapeutic value. With hindsight, earlier bowel-prepped colonoscopy and/or earlier cross-sectional imaging could have shortened the time to definitive management once the object failed to progress (7,8).

Pediatric foreign body ingestion is a globally recognized clinical challenge, with a substantial portion of these events occurring unnoticed (9). Although 80–90% of ingested objects pass spontaneously, up to 10–20% require endoscopic removal, and about 1% necessitate surgery (10). Sharp objects, including metallic items like hair clips and pins, are associated with higher rates of gastrointestinal perforation, underscoring the importance of prompt endoscopic evaluation (7,10). Current guidelines emphasize that button batteries, sharp objects, and multiple magnets pose the highest risk for severe morbidity, necessitating early retrieval (9,11).

Additionally, risk factors such as young age, use of dentures (in older populations), and certain dietary habits increase the likelihood of foreign body ingestion or complications from sharp objects (7). In our case, the ingestion was witnessed, and rapid detection with plain radiography allowed timely management, aligning with established recommendations for pediatric patients (8-11).

The successful outcome of this case can be attributed to early detection, appropriate imaging, and specialized endoscopic expertise. Sharp foreign bodies are more likely to cause significant injury if they progress beyond the esophagus, making urgent intervention essential (7,10). Immediate endoscopic retrieval, with careful manipulation, minimized the risk of mucosal lacerations or perforation, consistent with the literature supporting early removal of sharp objects from the stomach (9,11).

Foreign body ingestion in pediatric patients can be deceptively asymptomatic, even in cases involving sharp or hazardous items. Prompt radiographic assessment and early endoscopic intervention are paramount to prevent complications. Clinicians should maintain a high index of suspicion and follow established guidelines to optimize patient outcomes.

### 4- CONCLUSION

Sharp metallic foreign bodies that fail to progress can penetrate the bowel wall, especially if serial radiographs show a fixed position and the child remains symptomatic. In these cases, early escalation to cross-sectional imaging and surgical consultation is appropriate to prevent delayed perforation or deep soft-tissue injury.

### 5- ETHICAL CONSIDERATIONS

Informed written consent was obtained from the patient's parents for the publication of this case and the

accompanying images. Since this work is a case report, no authorization by the institution's ethics committee was required.

## 6- DATA AVAILABILITY

De-identified clinical details supporting this case report (limited to what is described in the manuscript) are available from the corresponding author upon reasonable request, subject to parental consent and institutional policies.

## 7- CONFLICT OF INTEREST

The authors declared no potential conflicts of interest regarding the research, authorship, and/or publication of this article.

## 8- FUNDING

The authors received no financial support for the research.

## 9- REFERENCES

1. Uyemura MC. Foreign body ingestion in children. *American family physician*. 2005 Jul 15;72(2):287-91.
2. Zmary KR, Davis JW, Ament EE, Dirks RC, Garry JE. This too shall pass: A study of ingested sharp foreign bodies. *Journal of Trauma and Acute Care Surgery*. 2017 Jan 1;82(1):150-5.
3. Hesham A-Kader H. Foreign body ingestion: children like to put objects in their mouth. *World journal of pediatrics*. 2010 Nov;6(4):301-10.
4. Lisičić-Konaković M, Kulašević A, Melunović M. Ingestion of a metallic foreign body (hair clip) by a small child. *Paediatr Croat*. 2022 Oct 28;66.
5. Au A, Goldman RD. Management of gastric metallic foreign bodies in children. *Canadian family physician*. 2021 Jul 1;67(7):503-5.
6. Hunter TB, Taljanovic MS. Foreign bodies. *Radiographics*. 2003 May;23(3):731-57.
7. Goh BK, Chow PK, Quah HM, Ong HS, Eu KW, Ooi LL, et al. Perforation of the gastrointestinal tract secondary to ingestion of foreign bodies. *World journal of surgery*. 2006 Mar;30(3):372-7.
8. Jayachandra S, Eslick GD. A systematic review of paediatric foreign body ingestion: presentation, complications, and management. *International journal of pediatric otorhinolaryngology*. 2013 Mar 1;77(3):311-7.
9. Bekkerman M, Sachdev AH, Andrade J, Twersky Y, Iqbal S. Endoscopic management of foreign bodies in the gastrointestinal tract: a review of the literature. *Gastroenterology research and practice*. 2016;2016(1):8520767.
10. Lee JH. Foreign body ingestion in children. *Clinical endoscopy*. 2018 Mar 30;51(2):129-36.
11. Demiroren K. Management of gastrointestinal foreign bodies with brief review of the guidelines. *Pediatric Gastroenterology, Hepatology & Nutrition*. 2023 Jan 10;26(1):1.