

Case Report

Foreign body induced acute perforated appendicitis: an unusual case presentation from a tertiary care centre

Amir Mohamed^{1*}, Princess Merem², Yafas Nazir Khan³,
Charunmayi Lakshmi Brahmani Adari⁴, Shrivatsam Paidi⁴

¹Elrazi University, Khartoum, Sudan

²International University of the Health Sciences (IUHS), School of Medicine, Winnipeg, Canada

³Sheri Kashmir Institute of Medical Sciences Soura, Srinagar, Jammu and Kashmir, India

⁴Government Medical College, Srikakulam, Andhra Pradesh, India

Received: 19 August 2026

Revised: 18 September 2026

Accepted: 12 October 2026

*Correspondence:

Dr. Amir Mohamed,

E-mail: Amir.mh.Mohamed@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Foreign body-induced appendicitis is an uncommon cause of acute appendicitis and may rarely result in perforation and localized peritonitis. Diagnosis can be challenging when there is no definite history of foreign body ingestion. We present a case of acute perforated appendicitis secondary to an impacted appendiceal foreign body in an adult patient. Clinical evaluation, laboratory investigations, contrast-enhanced computed tomography (CT), operative findings, and postoperative outcome were assessed. A 45-year-old male presented with a 2-day history of abdominal pain that localized to the right iliac fossa, associated with low-grade fever, nausea, vomiting, and anorexia. Examination revealed right iliac fossa tenderness, guarding, and rebound tenderness, with positive McBurney's and Rovsing's signs. Leukocytosis with neutrophilic predominance was present, and the Alvarado score was 8/10. CT demonstrated an inflamed appendix containing a hyperdense linear foreign body with focal appendiceal wall disruption, suggestive of perforation. Emergency appendectomy revealed a perforated appendix with localized peritonitis and an impacted foreign body within the appendiceal lumen. The foreign body and appendix were removed, and postoperative recovery was uneventful. Foreign body-induced perforated appendicitis is a rare but important cause of complicated appendicitis. CT is valuable for identifying an intraluminal foreign body and associated complications. Early surgical intervention with appendectomy and foreign body removal is effective when perforation or localized peritonitis is present.

Keywords: Acute appendicitis, Foreign body, Appendiceal perforation, Computed tomography, Appendectomy, Peritonitis

INTRODUCTION

Acute appendicitis is one of the most common causes of acute abdomen and remains a frequent surgical emergency worldwide. It affects approximately 7-8% of the general population during their lifetime.¹ Although the majority of cases result from luminal obstruction due to lymphoid hyperplasia or fecaliths, foreign bodies

represent an exceptionally uncommon cause of appendicitis and may occasionally result in perforation.²⁻⁴

Ingested foreign bodies generally pass spontaneously through the gastrointestinal tract without producing symptoms. However, in rare circumstances, a foreign body may enter and become impacted within the appendiceal lumen. Persistent impaction can produce

luminal obstruction, local inflammation, and, particularly with sharp or elongated objects, perforation and subsequent peritonitis.^{5,6}

The diagnosis may be challenging because the clinical presentation of foreign body-induced appendicitis is frequently indistinguishable from conventional acute appendicitis. A history of foreign body ingestion may also be absent, particularly when the ingestion was accidental or forgotten.⁷ Computed tomography (CT) can be particularly useful in identifying an appendiceal foreign body and associated complications.⁸

Foreign bodies reported within the appendix include fish bones, toothpicks, metallic objects, pins, needles, dental materials, seeds, and other ingested materials. A systematic review of adult cases demonstrated that appendiceal foreign bodies are rare, with a substantial proportion requiring surgical treatment and a subset presenting with perforation.⁹

We present a case of acute perforated appendicitis secondary to an impacted foreign body in an adult patient who had no definite history of foreign body ingestion. The case highlights the diagnostic difficulty associated with this uncommon etiology and the importance of considering a foreign body in patients presenting with complicated appendicitis.

CASE REPORT

A 45-year-old male with no significant previous medical history presented to the emergency department of King George Hospital, Visakhapatnam, with a 2-day history of abdominal pain. The pain initially involved the periumbilical and epigastric regions and subsequently increased in intensity and localized predominantly to the right iliac fossa. The pain was associated with low-grade fever, nausea, one episode of vomiting, and loss of appetite. He denied urinary symptoms, diarrhea, or any history of recent self-medication. There was no definite history of ingestion of any unusual or foreign object.

On physical examination, the patient was conscious and oriented. His temperature was 37.6°C, heart rate was 102 beats/min, respiratory rate was 20 breaths/min, blood pressure was 124/76 mmHg, and oxygen saturation was above 94% on room air. Abdominal examination revealed tenderness in the right iliac fossa with localized guarding and rebound tenderness. McBurney's and Rovsing's signs were positive. The remaining systemic examination was unremarkable.

Laboratory investigations revealed leukocytosis with a total leukocyte count of 15,800 cells/mm³ and neutrophilic predominance of 91%. Routine urine examination was within normal limits.

Based on the clinical findings, a provisional diagnosis of acute appendicitis was made. The patient's Alvarado

score was 8/10. Contrast-enhanced CT of the abdomen and pelvis demonstrated an inflamed appendix with periappendiceal fat stranding and a hyperdense linear foreign body within the appendiceal lumen. There was evidence of focal disruption of the appendiceal wall with adjacent inflammatory changes, suggestive of perforated appendicitis secondary to an impacted foreign body (Figure 1).

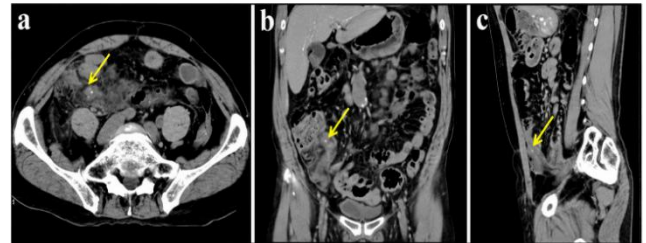


Figure 1: (a) Axial contrast-enhanced CT image showing an inflamed appendix with a hyperdense foreign body; (b) coronal CT reconstruction demonstrating the foreign body within the appendiceal lumen; and (c) sagittal CT reconstruction showing the foreign body with associated appendiceal inflammatory changes.

In view of the clinical and radiological findings, the patient was taken to the operating room for emergency appendectomy. An infraumbilical incision was made and exploration revealed an inflamed and perforated appendix with localized peritonitis. A foreign body was identified within the appendiceal lumen at the site of perforation (Figure 2). The foreign body was removed along with the appendix, and appendectomy was completed without intraoperative complications.

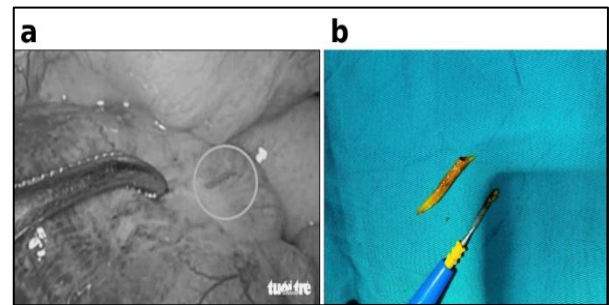


Figure 2: (a) Intraoperative image showing an inflamed and perforated appendix with an impacted foreign body; and (b) resected appendix demonstrating the foreign body within the appendiceal lumen.

The patient was managed postoperatively with intravenous fluids, analgesics, and antibiotic therapy. His postoperative recovery was uneventful. Oral intake was gradually resumed following the return of bowel function. The patient remained clinically stable and was discharged on the third postoperative day in satisfactory condition.

DISCUSSION

Foreign body-induced appendicitis is an uncommon condition and represents only a very small proportion of acute appendicitis cases.^{8,9} Although appendicitis is generally associated with obstruction of the appendiceal lumen by fecaliths or lymphoid tissue, an ingested foreign body can occasionally become lodged within the appendix and initiate an inflammatory process.⁵

Most ingested foreign bodies pass spontaneously through the gastrointestinal tract. However, objects that become trapped within the appendix may remain there for prolonged periods and subsequently cause inflammation. The clinical consequences depend on the nature, size, and shape of the foreign body. Blunt objects may cause obstruction and subsequent appendicitis, whereas sharp or elongated objects have a greater tendency to penetrate the appendiceal wall and produce perforation and peritonitis.⁶

A variety of foreign bodies have been reported within the appendix, including fish bones, toothpicks, metallic objects, pins, needles, dental materials, seeds, and other miscellaneous materials.¹⁰ The presence of a foreign body does not always result in immediate symptoms, and the interval between ingestion and the development of appendicitis may vary considerably.¹¹

The clinical presentation of foreign body-induced appendicitis is generally nonspecific and may closely resemble ordinary acute appendicitis. This makes the diagnosis difficult, particularly when the patient does not recall or report ingestion of a foreign object.¹² In the present case, there was no definite history of foreign body ingestion, and the diagnosis was established only after radiological evaluation demonstrated a hyperdense foreign body within the appendix.

Computed tomography has an important role in the diagnosis of appendicitis associated with foreign bodies. CT can identify the foreign body, determine its location, demonstrate appendiceal inflammation, and detect complications such as perforation, abscess, or localized peritonitis.¹³ A systematic review of adult appendiceal foreign bodies found CT to be an important imaging modality for identifying the foreign body and associated complications.⁹

The type of foreign body also influences the risk of perforation. Sharp objects such as fish bones and toothpicks have been disproportionately associated with perforated appendicitis.⁹ Ingested objects may remain within the appendix for variable periods before producing symptoms, and perforation may occur when the foreign body penetrates the appendiceal wall.¹⁴

The management of appendiceal foreign bodies depends on the clinical presentation and the location and characteristics of the foreign body. When an impacted

foreign body is associated with acute appendicitis, particularly perforation or other complications, surgical removal of the appendix and foreign body is generally required.¹⁵ Laparoscopic or open appendectomy may be performed depending on the clinical situation, available facilities, and surgeon expertise.¹⁶

In the present case, the patient presented with clinical features consistent with acute appendicitis and subsequently underwent CT evaluation, which demonstrated an intraluminal foreign body and features of perforation. Emergency appendectomy revealed localized peritonitis and an impacted foreign body within the perforated appendix. The patient had an uncomplicated postoperative recovery and was discharged on the third postoperative day.

Foreign body ingestion is more frequently encountered in children, while accidental ingestion in adults is less common.¹⁷ Adults may fail to recall or recognize the ingestion of a small foreign object, making a detailed history particularly important when evaluating unusual or complicated appendicitis.

Previous reports have described appendicitis caused by a variety of unusual foreign bodies, including metallic objects, needles, fish bones, and other sharp materials.¹⁸ These cases emphasize that foreign bodies should be considered among the uncommon causes of appendiceal inflammation, especially when imaging demonstrates an unusual intraluminal structure.

The treatment of complicated appendicitis remains primarily surgical when perforation or localized peritonitis is present. Adequate source control through appendectomy, removal of the foreign body, and appropriate postoperative antibiotic therapy are important in reducing infectious complications.¹⁹

The present case highlights the importance of careful radiological evaluation in patients with acute appendicitis when an unusual cause is suspected. Recognition of an appendiceal foreign body before surgery can assist in operative planning and may explain the mechanism responsible for perforation.

CONCLUSION

Acute perforated appendicitis secondary to a foreign body is a rare but potentially serious condition that should be considered among the differential diagnoses of complicated appendicitis. The absence of a definite history of foreign body ingestion does not exclude the possibility of an impacted appendiceal foreign body.

Computed tomography is an important diagnostic modality for identifying an intraluminal foreign body and associated appendiceal complications. Early surgical intervention with appendectomy and removal of the

foreign body remains an effective treatment when perforation or localized peritonitis is present.

This case emphasizes the importance of maintaining a high index of suspicion for unusual causes of appendicitis and performing careful radiological and intraoperative evaluation in patients with complicated disease.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Addiss DG, Shaffer N, Fowler BS, Tauxe RV. The epidemiology of appendicitis and appendectomy in the United States. *Am J Epidemiol.* 1990;132(5):910–25.
2. Akbulut S. Unusual histopathological findings in appendectomy specimens: a retrospective analysis and literature review. *World J Gastroenterol.* 2011;17(15):1961–70.
3. Caristo G, Laudari R. Perforation of the appendix by a foreign body: a case report. *Int J Case Rep Surg.* 2025;7(1):115–7.
4. Neto JIA, Guerini BS, Almeida FFN. Appendicitis caused by ingestion of metal foreign body. *J Coloproctol (Rio J).* 2015;35(1):59–62.
5. Sánchez HCJ, Montalvo CMM, Maduro DA, González JCF, Suaza C. Apendicitis aguda perforada secundaria a cuerpo extraño: reporte de caso. *Rev Colomb Cir.* 2019;34(2):199–203.
6. Vélez-Bernal JL, González-Díaz CE, Agudelo Jimenez LD. Cuerpo extraño como causa de apendicitis aguda complicada. *Rev Colomb Cir.* 2022;37:139–41.
7. Dagar V, Das RP, Nazir S. A rare case of fish bone induced acute appendicitis. *Korean J Abdom Radiol.* 2025;8(1):16–9.
8. Hong JJ, Cohn SM, Ekeh AP, Newman M, Salerno TA. Perforated appendicitis: a contemporary analysis. *Am Surg.* 2003;69(9):783–6.
9. Abdalla HEE, Nour HM, Qasim M, Magsi AM, Sajid MS. Appendiceal foreign bodies in adults: a systematic review of case reports. *Br J Surg.* 2024;111:znae197.
10. Sama CB, Aminde LN, Njim TN, Angwafo FF 3rd. Foreign body in the appendix presenting as acute appendicitis: a case report. *J Med Case Rep.* 2016;10(1):129.
11. Klingler PJ, Seelig MG, DeVault KR, Wetscher GJ, Floch NR, Branton SA, et al. Ingested foreign bodies within the appendix: a 100-year review of the literature. *Dig Dis.* 1998;16(5):308–14.
12. Mutair YA, Abdin R, Alabrash M, Issa M, Rahhal H. Metallic pin causing appendicitis: a case from Syria. *Cureus.* 2025;17(11):e97483.
13. Makama JG, Ameh EA. Spectrum of foreign bodies in the appendix: a review. *J West Afr Coll Surg.* 2011;1(1):25–42.
14. Lin Y, Wu RC. Acute appendicitis caused by an ingested bony fragment. *Intern Med.* 2014;53(7):809–10.
15. Andersson RE, Hugander A, Ravn H, Offenbartl K, Ghazi S, Nyström P, et al. Repeated clinical and laboratory examinations in patients with an equivocal diagnosis of appendicitis. *World J Surg.* 2000;24(4):479–85.
16. Chauhan A, Mishra S, Monga Y, Sharma S, Rastogi A. Foreign body in appendix presenting as acute appendicitis: a case report. *IOSR J Dent Med Sci.* 2017;16(3):3–5.
17. Kay M, Wyllie R. Pediatric foreign bodies and their management. *Curr Gastroenterol Rep.* 2005;7(3):212–8.
18. Saunders D, Jones M, Kaushik M, Thomas WM. Fish bone perforation of the terminal ileum presenting as acute appendicitis. *BMJ Case Rep.* 2014;2014:bcr2013009533.
19. Mallick IH, Thoufeeq MH, Rajendran TP. Ingested foreign bodies: do they migrate? A case report and review of the literature. *Scand J Gastroenterol.* 2005;40(6):683–4.

Cite this article as: Mohamed A, Merem P, Khan YN, Adari CLB, Paidi S. Foreign body-induced acute perforated appendicitis: an unusual case presentation from a tertiary care centre. *Int Surg J* 2026;13:2239-42.