

Case Report

Open Access, Volume 6

Peritoneal abscess caused by duodenal perforation from a gastrointestinal foreign body (The “Forgotten” Spoon): A case reportThai Dang Truong^{1,2}; Duc Tran Minh²; Khanh Cheng Gia^{2,3}; Phuoc Bui Thanh^{2,3*}; Nguyen Ly^{1,2}¹University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam.²Binh Dan Hospital, Ho Chi Minh city, Vietnam³Pham Ngoc Thach University of Medicine, Ho Chi Minh city, Vietnam.***Corresponding Author: Phuoc Bui Thanh**

Pham Ngoc Thach University of Medicine, Vietnam.

Email: phuocphysics123@gmail.com

Received: Dec 09, 2024

Accepted: Jan 03, 2025

Published: Jan 10, 2025

Archived: www.jcimcr.org

Copyright: © Bui Thanh P (2025).

DOI: www.doi.org/10.52768/2766-7820/3419

Abstract

Foreign body ingestion is a common incidence in Vietnam. Small objects usually pass through the entire gastrointestinal tract and are excreted spontaneously without complications. However, larger or sharp objects can lead to severe consequences, such as bowel obstruction, visceral perforation, and fistulas. We describe a rare case of a 27-year-old male with no prior risk factors (such as psychiatric disorders, substance abuse, or alcoholism), who accidentally swallowed a 15 cm plastic spoon while joking with friends. The spoon remained lodged in the D2 section of the duodenum for four years, eventually causing peritoneal abscess due to a suspected duodenal perforation. The patient underwent emergent laparotomy, which included abscess drainage, abdominal lavage, gastrostomy with duodenal decompression, feeding jejunostomy, and cholecystostomy. The patient then recovered uneventfully and was discharged.

Keywords: Duodenum; Foreign body; Spoon; Peritoneal abscess; Duodenostomy.

Introduction

In surgical emergencies, foreign bodies in the gastrointestinal tract, such as animal bones, bamboo toothpicks, coins, dentures, and toothbrushes, have been documented in several clinical reports [1]. Typically, these objects can pass through the digestive system and be excreted in the stool without causing complications [2]. However, long and sharp foreign objects can pose significant challenges during monitoring and treatment. Early detection and timely intervention are crucial to preventing severe complications such as bowel obstruction, ulceration, perforation, or necrosis due to prolonged compression [2]. Foreign objects in the gastrointestinal tract are often associated with underlying conditions such as schizophrenia, pica syndrome, intellectual disabilities, or occur as a result of accidental ingestion [3]. Diagnosis primarily relies on obtaining a thorough

patient history and utilizing imaging modalities, such as radiography or Multi-Slice Computed Tomography (MSCT), to confirm the presence of foreign bodies.

Case presentation

A 27 - year - old male patient presented with dull, progressively worsening pain localized to the hypogastric region and right iliac fossa for 7 days, accompanied by dysuria, fever, fatigue, and anorexia. On clinical examination, the patient appeared in good general condition. Vital signs showed a rapid and weak pulse of 100 beats per minute. Abdominal examination revealed guarding and localized tenderness in the right iliac fossa. Complete blood count indicated a significant leukocytosis (28.9 K/ μ L), suggestive of an ongoing infection. Contrast-enhanced abdominal MSCT revealed:

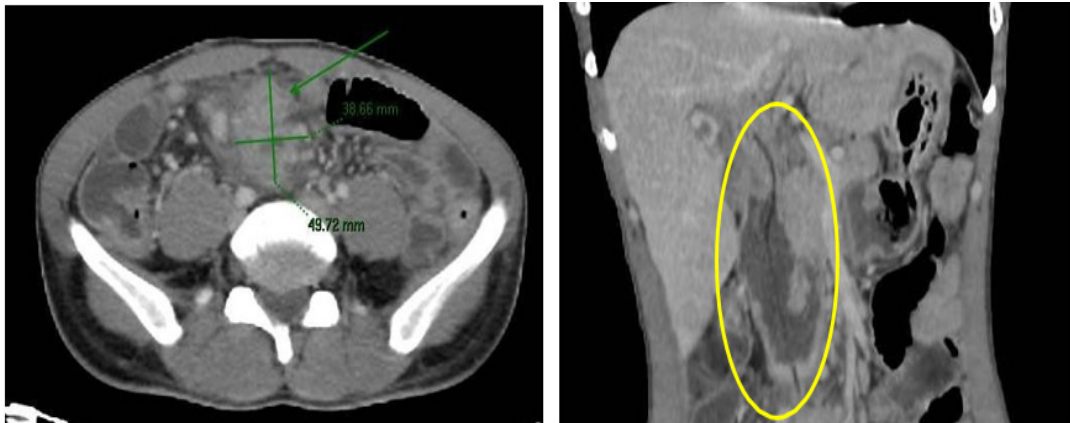


Figure 1: (Left) A soft tissue structure in the mesentery of the small intestine, suggestive of a mesenteric lymph node abscess. (Right) A foreign body resembling a “spoon” in the D2 segment of the duodenum.

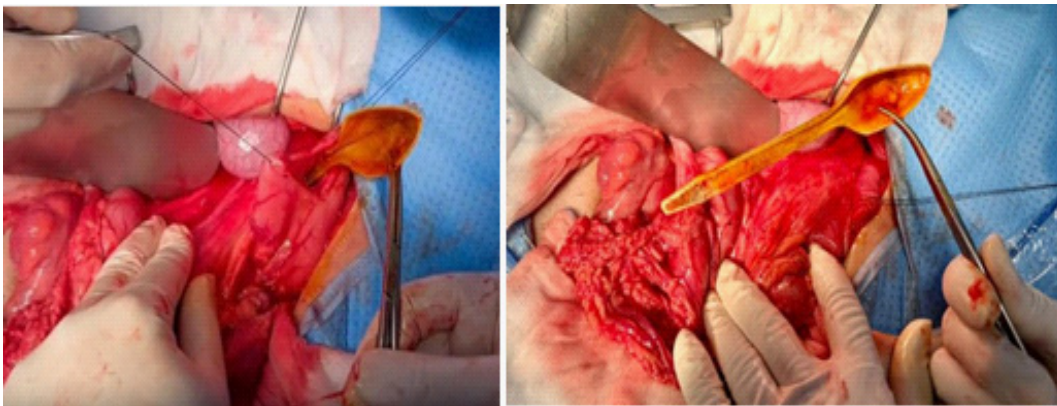


Figure 2: Retrieving the foreign body from the D2 segment of the duodenum through a gastrotomy.

- A “spoon-like” structure within the D2 segment of the duodenum.
- A soft tissue mass in the adjacent mesentery measuring approximately 39 × 50 × 29 mm, suspected to be an abscess.
- Numerous enlarged mesenteric lymph nodes.

The patient had no prior medical or surgical history of note. Upon further questioning, it was revealed that approximately four years ago, during playful interactions with friends, he accidentally swallowed a plastic spoon. At that time, he visited two urban hospitals, underwent radiographic and MSCT imaging, but no abnormalities were detected. He experienced occasional episodes of epigastric pain thereafter and was treated for gastritis. However, he had never noticed passing the spoon in his stool.

The patient underwent emergency surgery with a diagnosis of peritonitis caused by mesenteric lymph node abscess and a duodenal foreign body (D2). Upon entering the abdominal cavity, exploration revealed cloudy fluid with fibrinous exudate localized around the duodenum and the terminal ileal mesentery. Palpation identified a foreign object positioned longitudinally in the D2 segment of the duodenum, causing significant inflammation and edema in the surrounding duodenal tissue. An abscess with foul-smelling cloudy pus was identified in the terminal ileal mesentery. The gallbladder was distended but bile flow into the duodenum was intact.

The surgical team decided to perform a gastrotomy to retrieve the foreign body from the duodenum. The foreign object was a plastic spoon approximately 15 cm in length. The gastrotomy was sutured, and a duodenal tube was placed through the D2 segment to the skin in a Witzel fashion. Additionally, a cholecystostomy was performed for decompression, and a jejunostomy was created for enteral feeding. A methylene blue solution was injected through the duodenal tube, with no evidence of fluid leakage.

Postoperatively, the patient was treated with carbapenem antibiotics, enteral nutrition, and intravenous supportive therapy. During the postoperative period, the patient showed stable progress, with the return of bowel function on postoperative day 2. Indicators of infection, such as blood leukocyte count and C-reactive protein (CRP), gradually decreased. Drains were removed on day 4, oral feeding was resumed on day 6, and the patient was discharged on day 7. All tubes were successfully removed during a follow-up visit two weeks after discharge.

Discussion

Foreign bodies in the Gastrointestinal (GI) tract are primarily reported as resulting from accidental ingestion. However, underlying conditions such as schizophrenia, pica syndrome, alcohol dependency, or the use of dentures may also contribute to the incidence. The majority of small, blunt, and non-angular foreign objects (80-90%) can traverse the GI tract and be excreted without causing severe complications [3]. In contrast, large

and sharp objects are more likely to become lodged at narrow or angulated segments, such as the pylorus, duodenum, or terminal ileum, and may lead to complications including intestinal obstruction, perforation, ulceration, and necrosis, significantly increasing morbidity and mortality rates [4].

In this case, a 15 cm plastic spoon was retained in the D2 segment of the duodenum for four years, resulting in the formation of a mesenteric abscess, likely caused by a micro-perforation due to prolonged compression of the intestinal wall. The duodenum, a retroperitoneal organ with limited mobility and multiple angulations, is particularly susceptible to impaction by foreign bodies.

Intestinal perforation caused by foreign bodies often presents insidiously and may mimic conditions such as appendicitis [5], necessitating its inclusion in differential diagnoses. A thorough history and clinical evaluation are critical for diagnosis; however, in cases where patients fail to recall or provide accurate information, diagnostic delays are common. Imaging modalities such as plain radiographs and Multi-Slice Computed Tomography (MSCT) are valuable tools for identifying foreign bodies and associated complications, facilitating timely diagnosis and intervention.

To minimize complications, foreign bodies should be removed from the GI tract as early as possible, either with surgery or endoscopic approach. Surgical intervention is often required in cases of suspected perforation or if sharp objects fail to progress within 72 hours [6]. Upon failure of endoscopic removal, the choice for an alternate approach depends on the size and characteristics of the objects, with approximately 10-20% necessitating laparoscopic surgery and fewer than 1% requiring open surgery [7]. Guo et al. reported a case of a chopstick retained in the D2 segment of the duodenum for 10 years, successfully removed via endoscopy [8]. Similarly, Li et al. described a chopstick retained for four months, causing perforation of the D1 segment, which was managed laparoscopically by removing the foreign body and repairing the perforation [9]. Both cases involved patients with stable vital signs and no signs of abdominal wall rigidity.

In our clinical case, emergency surgery was necessary due to complications. An open surgical approach was selected to address the large abscess and remove the foreign body lodged in the D2 duodenum, a part with complex anatomy. During the procedure, although the duodenal perforation site was not visibly apparent within the abscess cavity, a decision was made to place a duodenal drainage tube without resecting the bowel. Additionally, decompressive drains were placed in the duodenum and gallbladder to facilitate healing of the suspected micro-perforation. This approach proved effective, as the patient demonstrated full recovery within three weeks postoperatively, with no complications.

Conclusion

In summary, large foreign objects such as spoons, toothbrushes, or elongated items greater than 6 cm in length often fail to pass through the gastrointestinal tract spontaneously. Early detection before complications arise allows for retrieval via endoscopic methods, reducing the risk of impaction in the duodenum or other narrow segments and preventing complications and mortality. In cases where endoscopic retrieval fails, minimally invasive approaches such as laparoscopic surgery combined with small incisions can be considered. For cases complicated by foreign body retention, emergency open surgery is necessary to fully evaluate the damage and safely remove the foreign object.

Declarations: I hereby declare that this is an original research work conducted by our team. The information presented in this report is truthful and has not been published in any other research works.

References

1. Chao HH, TC Chao. Perforation of the duodenum by an ingested toothbrush. *World J Gastroenterol*. 2008; 14(27): 4410-2.
2. Rasheed MA, et al. Accidental Ingestion of Toothbrush: An Unusual Foreign Body. *J Ayub Med Coll Abbottabad*. 2018; 30(1): 130-132.
3. Soga M, et al. Accidental duodenal foreign body of toothbrush removed laparoscopically: A case report. *Surg Case Rep*. 2022; 8(1): 141.
4. Lee MR, Y Hwang, JH Kim. A case of colohepatic penetration by a swallowed toothbrush. *World J Gastroenterol*. 2006; 12(15): 2464-5.
5. Sewpaul A, et al. The case of the forgotten toothbrush. *Int J Surg Case Rep*. 2012; 3(5): 184-5.
6. Bekkerman M, et al. Endoscopic Management of Foreign Bodies in the Gastrointestinal Tract: A Review of the Literature. *Gastroenterol Res Pract*. 2016; 2016: 8520767.
7. Committee ASoP, et al. Management of ingested foreign bodies and food impactions. *Gastrointest Endosc*. 2011; 73(6): 1085-91.
8. Guo YN, et al. Endoscopic removal of a large foreign body retained in the duodenum: A case report. *Medicine (Baltimore)*. 2020; 99(27): e20857.
9. Li C, CC Yong, DD Encarnacion. Duodenal perforation nine months after accidental foreign body ingestion, a case report. *BMC Surg*. 2019; 19(1): 132.