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Two Toothpicks: A Trip Along the Gastrointestinal Tract

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Abstract

A 34-year-old male presented with a 2-day history of persistent abdominal pain six days after accidental toothpick ingestion. Abdominal computed tomography revealed a 42-mm linear high-density foreign body in the descending duodenum, associated with bowel wall thickening, perienteric inflammatory exudation, and suspected microperforation. Emergency upper gastrointestinal endoscopy identified an embedded wooden toothpick, which was completely removed with foreign body forceps. Titanium clips were applied to seal the ulcerative and bleeding mucosal defect due to probable microperforation. The patient recovered uneventfully with nil per os, acid suppression and antibiotic therapy, and was discharged on day 3. Five days later, the patient returned with anal distending pain and defecatory stabbing discomfort. Digital rectal examination palpated a toothpick-like foreign body that was not visualized by anoscopy. Colonoscopy confirmed a second toothpick embedded in the rectal submucosa approximately 5 cm above the anal verge with local ulceration, which was successfully extracted using biopsy forceps. The patient achieved full recovery after symptomatic treatment. This rare case presents sequential gastrointestinal impaction of two separate toothpicks at duodenal and rectal sites, highlighting the variable and delayed complications of ingested wooden foreign bodies.

Introduction

Ingestion of sharp gastrointestinal foreign bodies is a common emergency in gastroenterology. While most small foreign bodies pass spontaneously, sharp objects such as wooden toothpicks carry high risks of mucosal injury, bleeding, intestinal perforation and peritonitis. Notably, wooden toothpicks are predominantly radiolucent on computed tomography, with faint, nonspecific imaging features that markedly increase the risk of missed or delayed diagnosis, and delayed perforation may occur days after ingestion.

Most published reports describe single-toothpick impaction at one gastrointestinal site. Herein, we report a rare case of two separately ingested wooden toothpicks with asynchronous sequential impaction: the first embedded in the descending duodenum with suspected microperforation, managed by emergency endoscopic extraction and titanium clip closure; the second remained asymptomatic after discharge and subsequently impacted in the rectum five days later, causing new anorectal symptoms. This case highlights that removal of one sharp foreign body does not exclude residual distal foreign material, and close clinical vigilance is required for all patients with a history of sharp foreign body ingestion.

Case presentation

A 34-year-old male presented to our emergency department with a 2-day history of persistent abdominal pain. The patient reported accidental ingestion of a toothpick 6 days prior without timely intervention. Emergency abdominal computed tomography (CT) demonstrated a strip-like slightly high-density lesion approximately 42 mm in length within the descending duodenum (**Fig A**). The proximal end of the foreign

body extended beyond the outer margin of the intestinal wall; the corresponding bowel segment showed thickened wall with ill-defined borders, haziness of the surrounding fat space, and patchy exudative opacities (**Fig B**). The findings were consistent with retained foreign body in the descending duodenum complicated by bowel wall edema and surrounding inflammatory exudation, with high suspicion of intestinal perforation.

Emergency endoscopic exploration and foreign body retrieval were performed immediately after admission. Endoscopy revealed a wooden toothpick embedded in the posterior wall of the descending duodenum. The oral end of the toothpick penetrated the intestinal mucosa, with marked mucosal congestion and edema in the adjacent area (**Fig C)**. Multiple superficial ulcers were noted on the anal side of the mucosa, which were presumed secondary to repeated friction and irritation by the toothpick. The foreign body forceps firmly grasped the oral end of the toothpick, and the toothpick was slowly and completely extracted (**Fig D**). The extracted wooden toothpick is shown in **Fig E**. Re-endoscopy after removal showed ulceration with oozing at the original embedding site. Combined with CT findings, microperforation could not be excluded, so two titanium clips were applied to close and repair the mucosal defect (**Fig F**).

Postoperatively, the patient received nil per os, acid suppression, anti-infection and supportive care: intravenous esomeprazole sodium for injection 40 mg twice daily for gastric acid suppression, and intravenous ceftazidime 2 g every 12 hours for anti-infection treatment. The patient's abdominal pain resolved completely after 3 days of therapy, and he was discharged uneventfully.

Five days after discharge, the patient revisited the anorectal surgery clinic with tenesmus and stabbing pain during defecation. Anoscopy showed a sentinel skin tag at the 12 o'clock position of the anal verge, and congested and elevated mucosa at the 3, 5, 7 and 11 o'clock positions around the dentate line. Digital rectal examination detected a cord-like foreign body consistent with a toothpick in the distal rectum. However, repeated exploration under anoscopy failed to visualize and retrieve the foreign body.

Colonoscopy was subsequently performed for definitive diagnosis and management. Colonoscopy identified another embedded toothpick approximately 5 cm proximal to the anal verge (**Fig G)**. Both ends of the foreign body were buried in the submucosa, with localized mucosal disruption and ulceration (**Fig H**). Biopsy forceps were used to grasp and completely remove the foreign body (**Fig L**). The patient recovered uneventfully after the procedure with no significant discomfort following.

Discussion

Accidental ingestion of wooden toothpicks represents a deceptive and potentially dangerous gastrointestinal foreign body injury, which can result in serious complications including mucosal laceration, hemorrhage, intestinal perforation, and secondary intraintestinal inflammation. Compared with radiopaque metallic foreign bodies, wooden toothpicks are predominantly radiolucent on computed tomography, resulting in faint, nonspecific imaging manifestations that substantially increase the risk of

missed or delayed diagnosis[1,2]. Concurrent intestinal wall edema and perienteric fatty exudation further mask the foreign body profile, compromising preoperative radiological evaluation and hindering accurate risk stratification for potential perforation.

The present case demonstrates a rare and clinically distinctive presentation of dual wooden toothpick ingestion with asynchronous sequential impaction in the upper and lower gastrointestinal tract, a pattern that has been scarcely reported in the existing literature[3,6]. The patient initially presented with acute abdominal pain secondary to one toothpick embedded in the descending duodenum with suspected microperforation, which was successfully managed with emergency endoscopic extraction and titanium clip repair. Notably, a second ingested toothpick remained quiescent within the intestinal tract, migrated distally after discharge, and ultimately embedded in the rectal wall, causing new-onset anal distension and stabbing pain five days after the initial treatment. This unique scenario of two identical sharp foreign bodies leading to separated, staged gastrointestinal injuries differentiates our case from conventional single-toothpick ingestion reports.

Another key clinical merit of this case is the successful minimally invasive management of suspected duodenal microperforation. Traditionally, penetrating duodenal foreign body injury with perforation suspicion warrants surgical exploration and repair. In this setting, endoscopic titanium clip closure effectively sealed the vulnerable ulcerative and bleeding mucosal defect, combined with standardized fasting, proton pump inhibitor-based acid suppression, and empirical antibiotic therapy[4,5]. This endoscopic conservative strategy avoided unnecessary open or laparoscopic surgery, shortened the hospital stay, and achieved favorable clinical recovery. It further validates that endoscopic clipping is a safe and effective alternative for minor, localized intestinal microperforation caused by penetrating foreign bodies.

Furthermore, this case provides valuable clinical implications for the diagnosis and management of gastrointestinal sharp foreign bodies. Clinicians commonly assume that complete resolution of abdominal symptoms after foreign body removal indicates full intestinal clearance and uneventful recovery. However, our experience highlights that multiple ingested foreign bodies may exhibit inconsistent migration velocities and disparate impaction sites within the gastrointestinal tract. Removal of a single foreign body cannot exclude the presence of residual distal foreign fragments. Even in patients with unremarkable early recovery after initial endoscopic intervention, close follow-up and enhanced clinical vigilance are mandatory to prevent delayed complications secondary to retained migrating foreign bodies. For all patients with a clear history of wooden sharp foreign body ingestion, comprehensive intraoperative evaluation and detailed discharge counseling are essential to reduce missed diagnosis and delayed adverse events.

In conclusion, simultaneous ingestion of two wooden toothpicks with asynchronous duodenal and rectal impaction is an extremely rare clinical entity. Staged upper and lower gastrointestinal endoscopic retrieval achieves definitive management, and endoscopic clip repair offers an effective minimally invasive solution for early suspected intestinal microperforation. This case underscores the necessity of

recognizing the migratory and delayed pathological characteristics of multiple gastrointestinal foreign bodies, so as to optimize diagnostic strategies, individualize treatment protocols, and improve long-term patient outcomes.

Declarations

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Author contributions

Guangwen Chen: Conceptualization, manuscript drafting, endoscopic treatment, data analysis, final revision of the manuscript.Lei Yang: Data collection, image sorting, literature retrieval.Lijian Liu: Clinical data collation, patient follow-up.Jianfeng Li: Literature review, image acquisition.Chengning Yang: Case data organization, critical reading of manuscript.Sheng Xie: Supervision, critical revision of the manuscript, project administration.Jieru Xie: Supervision, critical revision of the manuscript, validation of clinical data.

All authors read and approved the final manuscript.

Ethics, Consent to Participate, and Consent to Publish declarations

Ethics, Consent to Participate, and Consent to Publish declarations: not applicable. Written informed consent was obtained from the patient for publication of this case report and accompanying images. All patient-identifying information has been anonymized to protect patient privacy.

Consent for publication

Not applicable.

Conflict of interest

The authors declare that the research was conducted without any commercial

or financial relationships that could be perceived as conflicts of interest.

Competing interests

The authors declare no competing interests.

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Figures

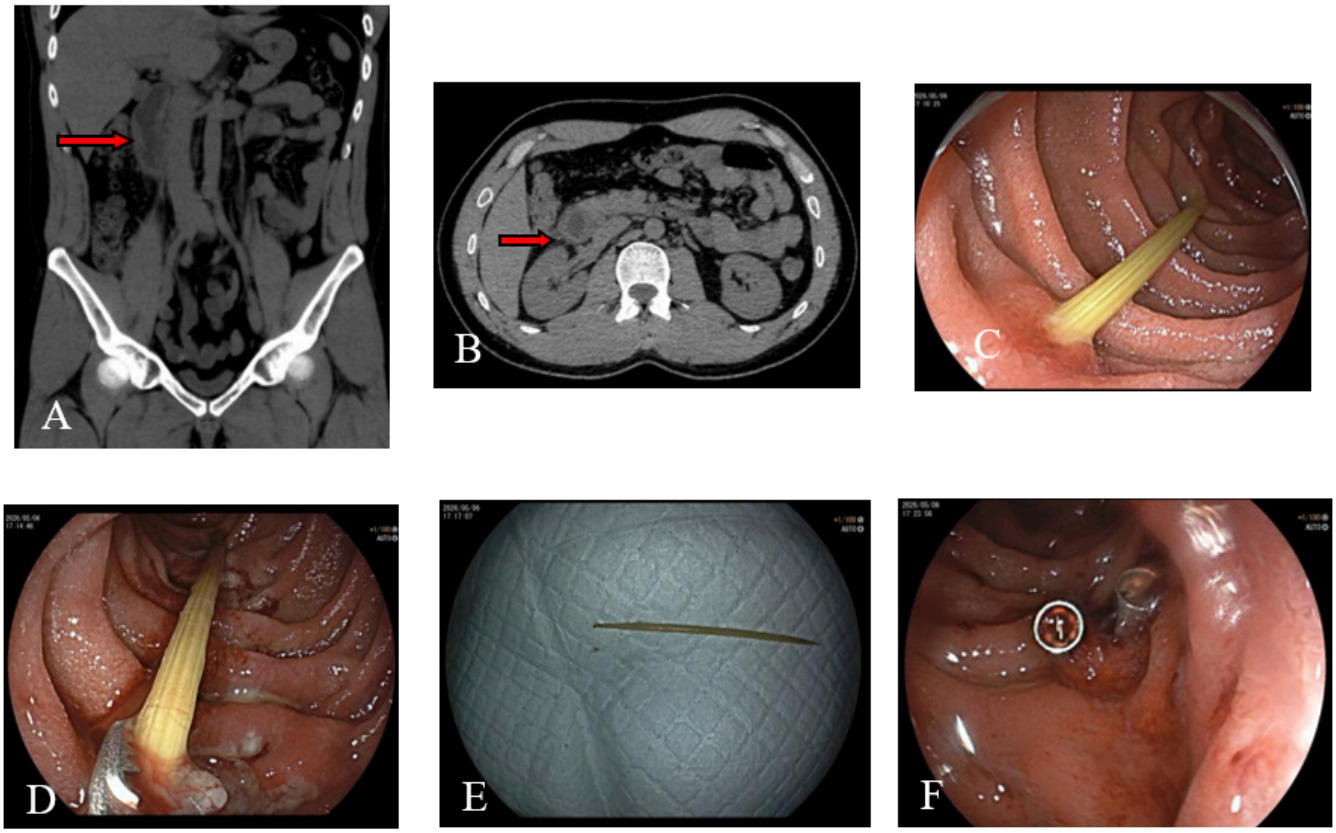


Figure 1

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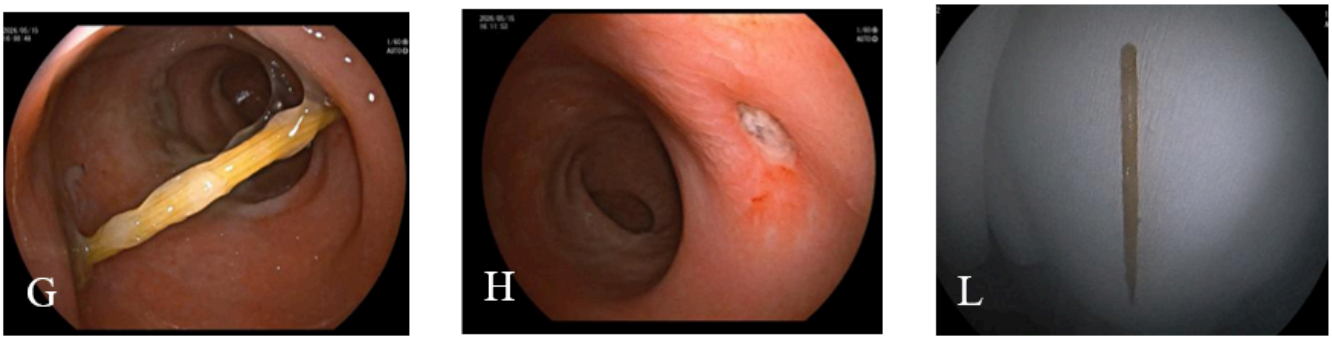


Figure 2

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