

Duodenal Wall Abscess Secondary to a Toothpick in the Duodenum is an Unusual Cause of Chronic Abdominal Pain

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Abstract

Foreign bodies are one of the most frequent emergencies in gastroenterology. Although most of these pass spontaneously, in some cases they can cause perforations. We present the case of a 32-year-old male patient who came to the outpatient clinic after four months of abdominal pain. An endoscopy of the upper digestive tract found a toothpick embedded in the duodenum. It was extracted without complications.

Keywords

Foreign bodies, toothpicks, duodenal perforation.

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INTRODUCTION

Voluntary or accidental ingestion of foreign bodies (FB) constitutes one of the most frequent emergencies in gastroenterology. (1, 2) It is of great importance given that it is not only a therapeutic challenge but is also a diagnostic challenge due to the wide spectrum of clinical manifestations presented and the type of population most frequently affected (children, patients with mental disorders, psychiatric patients and the elderly). (2)

Even though 80% to 90% of FBs pass through the entire digestive tract without causing symptoms, (3-5) 10% to 20% require some kind of medical intervention at some point, and one percent of patients develop serious complications, such as wall abscesses or perforations. (3, 4)

Toothpicks account for 9% of the FBs reported in the literature. (6) It is considered the shape, size and sharpness

of toothpicks result in high levels of morbidity and mortality due to the risk of perforation at any point in the digestive tract. (2) Among the risk factors for ingestion of toothpicks are consumption of alcohol, consumption of fast food intake, mental disorders and dental prostheses. (1)

We present the case of a patient who was admitted to the Fundación Universitaria Clínica Colombia as an outpatient for upper endoscopy to study chronic abdominal pain. A toothpick was found to be embedded in the second portion of the duodenum.

CLINICAL CASE

The patient was a 32-year-old man who had no prior medical history. He was admitted on an outpatient basis after 4-months of intermittent abdominal pain, predominantly in the epigastrium. He said he had no other associated

symptoms. An abdominal CT scan showed thickening of the duodenal wall, but found nothing else of relevance (Figure 1). An upper endoscopy was requested. On the day of the procedure, the patient appeared to be generally good condition and had normal vital signs. Upon palpation, he experienced slight abdominal pain in the epigastrium with no signs of peritoneal irritation. The upper endoscopy found a toothpick embedded in the anteroposterior wall of the second portion of the duodenum (Figure 2). After extraction of the toothpick with a foreign body clamp (Figure 3), drainage of purulent material through the holes was evidenced but without clear evidence of perforation (Figure 4).

Given the findings, the patient was hospitalized for observation, initiation of antibiotics and performance of a second abdominal CT scan to rule out a duodenal perforation. The patient's symptoms had completely resolved within 24 hours of admission, and he was discharged once the absence of duodenal perforation was confirmed by the second CT scan (Figure 5). When the patient was questioned, he did not remember having ingested a toothpick prior to the onset of his symptoms.

DISCUSSION

Numerous reports of management of FBs in the digestive tract can be found in the literature because they fre-

quently result in patient visits to gastroenterology services. Nevertheless, complications such as perforations and abscesses occur in only 1% of those cases. (3, 4)

In general, the age group with the highest risks of ingesting FBs is the infant population which accounts for 60% to 80% of the cases reported. (7) Among adults, incidence is highest in patients with mental disorders, prisoners, alcoholics and the elderly. (2) A study carried out between 2005 and 2007 at the Cardiovascular Hospital of Soacha found that coins, toy parts and watch batteries were most frequently ingested by children. It also found that ingestion of FBs is the second most frequent reason for emergency upper endoscopy in children (Gastrointestinal bleeding is the first.) and that the age group with the highest incidence is preschool (under 5 years of age). (7)

Many foreign bodies can be ingested, but coins are most frequently ingested followed by impacted boluses, chicken bones and fish bones. (8, 9) Ingestion of toothpicks is rare and accounts for only 9% of cases. (6) Nevertheless, because of their sharpness and size, several types of complications secondary to perforation of the gastrointestinal tract have been documented. They affect the pleura, liver, pericardium, peritoneum, kidney, ureter and bladder. (10-15) They include severe complications such as fistulas of the duodenum with the aorta or inferior vena cava. (16-18)

A complete medical history is important for diagnosis, but in many cases ingestion of a FB is difficult to identify

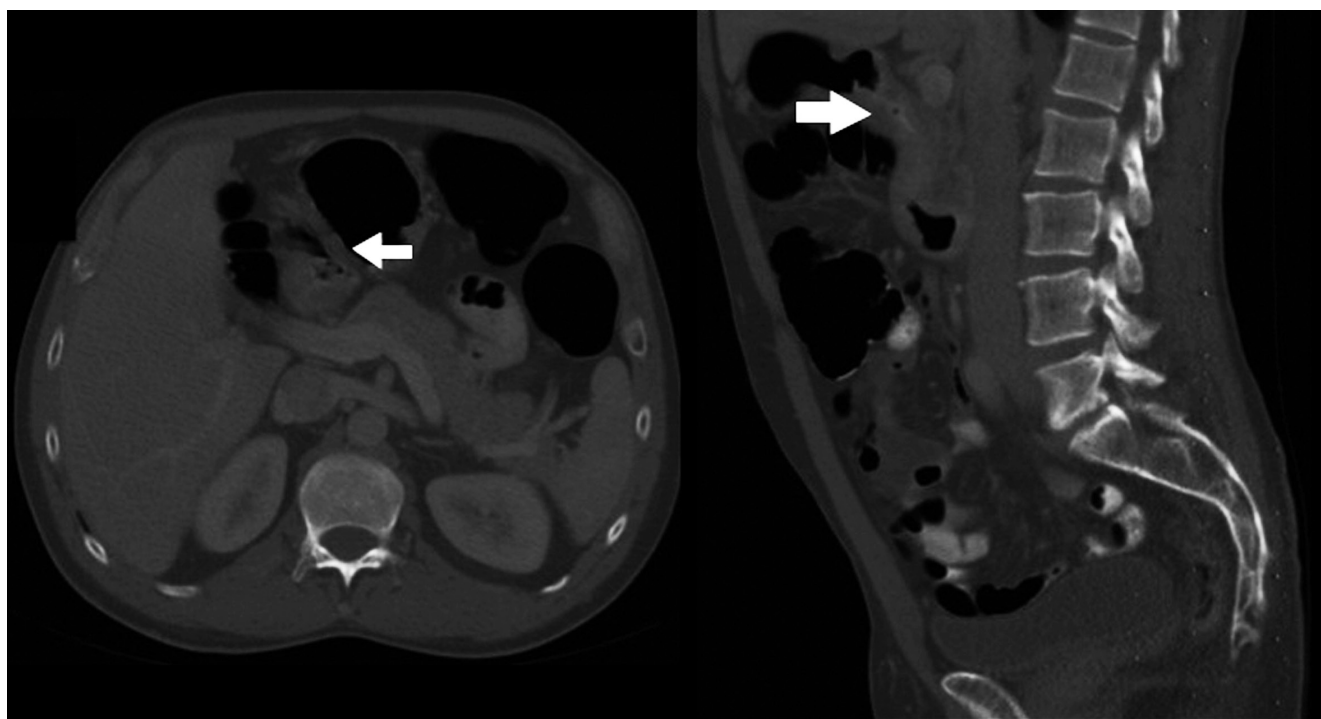


Figure 1. Tomographic image of duodenal wall thickening.

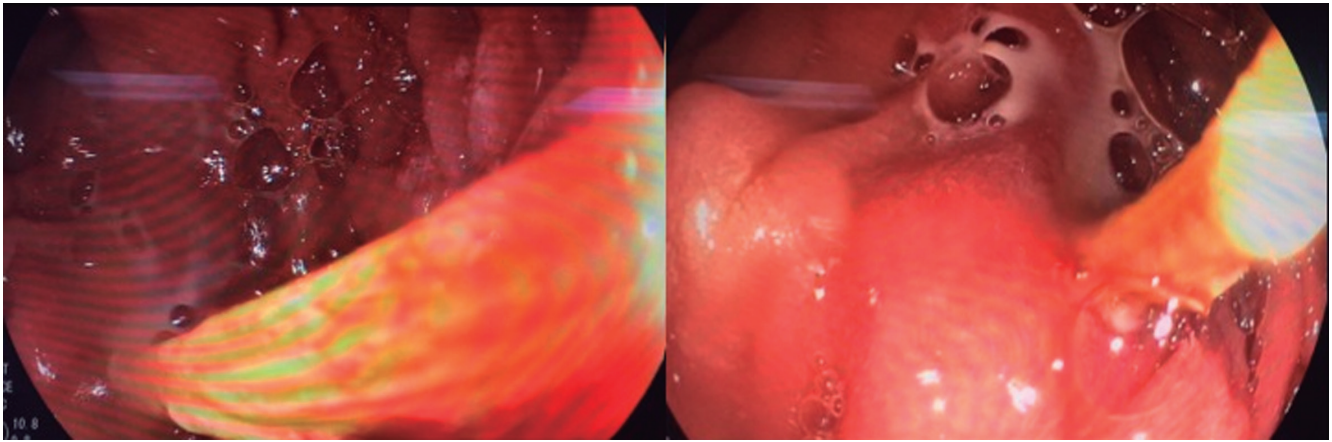


Figure 2. Endoscopic image of toothpick embedded in the wall of the second duodenal portion with pus visible through the hole in the anterior wall.

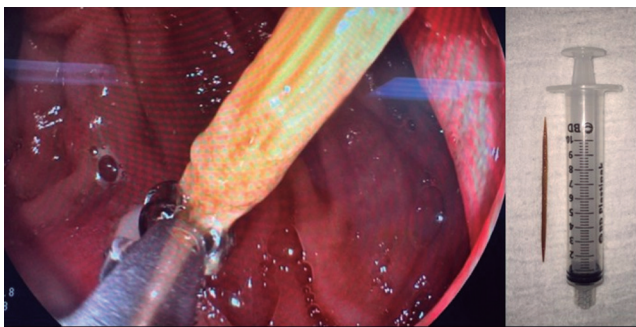


Figure 3. Image of endoscopic extraction of toothpick with foreign body clamp.

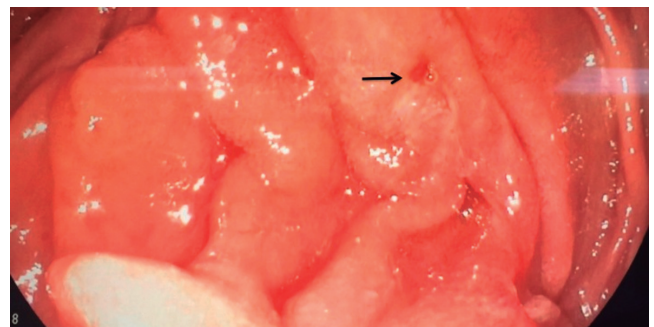


Figure 4. Endoscopic image of duodenal wall with no clear evidence of perforation following extraction of foreign body

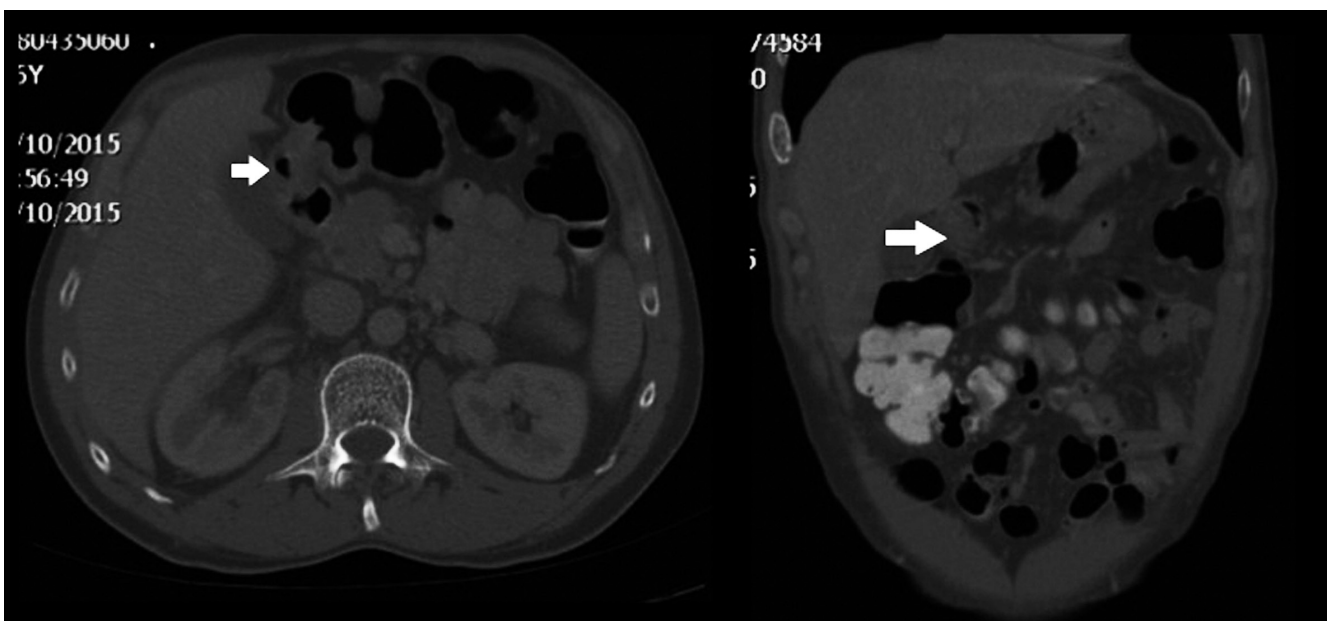


Figure 5. Tomographic image after removal of foreign body. Perforation was ruled out.

with certainty. This was the case with our patient, who did not remember having ingested a toothpick and whose very bizarre clinical picture was made diagnosis difficult. A review of the literature by Lee-Won Chong has found that adult men have a higher incidence of FB ingestion (73%) than do adult women (27%), and that the average age of adults who ingest FBs is 50.4 ± 18.6 years. (8) That study identified a wide and nonspecific variety of symptoms that may occur secondary to FB perforations. These include abdominal pain (77.3%), fevers (58%), vomiting (19.3%) and nausea (13.6%).

Diagnostic images are very useful for acute presentation when there is a high suspicion of FB ingestion. Conventional radiography can identify up to 65% of radiopaque FBs. (1) The limitation of this study is that it depends on the FB's radiolucency. Toothpicks are identified in only 5% to 15% of the cases by conventional x-rays. (2, 19) CT scans are more useful because they can rule out complications such as perforations and abscesses. In addition, they provide better information on whether the FB is intraluminal or extraluminal which helps determine treatment and approach. (20, 21)

In some cases, when diagnostic imaging is not performed and/or suspicion of an FB is very high, upper endoscopy is the test of choice since it is not only useful for the diagnosis but also allows FB extraction in most cases. (2, 3) Finally, some patients are diagnosed and managed intraoperatively when none of the previously mentioned methods provide enough information and when the patient's condition warrants surgery. (9, 10) In the case of our patient, the diagnosis was made endoscopically, since only thickening of the duodenal wall was observed in the tomographic image.

The treatment of perforations secondary to FBs should be individualized depending on patient age, the FB ingested, findings from imaging, and – most importantly – the patient's condition at the time of diagnosis. As in the case of our patient, more and more case reports show that, once endoscopic FB extraction has been performed, conservative management is an excellent tool for hemodynamically stable patients who do not show clinical signs indicating an urgent need for surgical intervention (acute abdomen and/or signs of systemic inflammatory response). In these cases conservative management means suspension of oral feeding, provision of enteral nutrition according to need, broad spectrum antibiotics and continued clinical monitoring. (2, 4) Finally, it is worth mentioning that endoscopic management of intestinal perforations has become very important because of its high long term technical and clinical success rates. Many tools can be used for endoscopic procedures. They include metal clips which are mainly useful for perforations smaller than 2 cm, and the OVESCO and OTCS (over the scope clips) systems which can be

successfully used for perforations of up to 3 cm. Placement of completely covered metal stents is also sometimes used. All of these together have substantially reduced the need for surgical procedures and have lowered morbidity and mortality rates. (5-7)

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