

## Ingested toothpick fistula of the ileum mimicking Crohn's disease

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### Abstract

Foreign body ingestion is an accidental or an intentional event, with most of the ingested foreign bodies passing spontaneously through the gastrointestinal tract without incidents. About 10-20% of them, especially long and sharp objects like toothpicks, will fail to pass through the entire gastrointestinal tract and may cause symptoms. Toothpick injury of the gastrointestinal tract is often associated with considerable morbidity and mortality. The complications that can be caused by toothpick ingestion are obstruction, perforation, hemorrhage, fistula formation, small bowel inflammation, sepsis and even death. Diagnosis of toothpick injury can be difficult as there are no specific physical findings or laboratory examinations which may aid the diagnosis and even imaging studies are of little help as wooden toothpicks are radiolucent. We report a rare case of incidental toothpick ingestion which caused an ileum fistula and mimicked Crohn's disease. (*Acta gastroenterol. belg.*, 2010, 73, 527-529).

### Introduction

Foreign body ingestion is an accidental or an intentional event that is usually encountered in four patients categories: children, adults with altered mental status, chronic alcoholics and adults with other predisposing factors such as criminal activities, extreme sports, carelessness, rapid bolting down of food and decreased sensitivity of the palatal surface because of excessive drug or alcohol use, dentures or ingestion of very cold liquids (1,2). Most of the ingested foreign bodies would pass spontaneously through the gastrointestinal tract without incidents (1,3). About 10-20% of them will impact at a point of intestinal physical narrowing, acute angulation, anatomic sphincter, prior surgery and congenital gut malformation (4), failing to pass through the entire gastrointestinal tract (1,5) and may lead to obstruction, perforation, hemorrhage, fistula formation, small bowel inflammation, sepsis and even death (5,6,7). Elongated and sharply pointed objects, such as toothpicks, have a higher risk of causing symptoms (1,7). We report a rare case of incidental toothpick ingestion which caused an ileum fistula and mimicked Crohn's disease.

### Case report

A 59 year old male presented with a history of right lower quadrant abdominal pain for about a month and three diarrheic stools daily containing mucus but not blood. The patient had mild hypothyroidism, diabetes mellitus and hyperlipidemia under treatment and had an appendectomy 20 years ago. Clinical examination

revealed light abdominal tenderness and mild guarding of the right lower quadrant. Fever was absent. Routine laboratory examinations and abdominal X-ray were within the normal limits, except the carbohydrate reactive protein (CRP) and the erythrocyte sedimentation rate (ESR) which were elevated (5.23 mg/dL and 71 mm/h respectively).

An abdominal US was performed which revealed the presence of a hyperechoic lesion with obscure boundaries and hypoechoic areas with dimensions 1,2 × 9 cm in the right iliac fossa and the presence of small volume of fluid in the right paracolic region consistent with an inflammatory mass. The abdominal contrast enhanced CT scan revealed the presence of a loop of the small intestine in the right iliac fossa with adhesion to the anterior parietal peritoneum and thickening of the intestinal wall with inflammatory infiltration of the adjacent fibrofatty tissue (Fig. 1). The possible diagnosis of Crohn's disease was made. A barium enteroclysis was normal. A colonoscopy with enteroscopy of the last 100 cm of terminal ileum failed to show any mucosal lesion and the mucosal biopsies taken revealed mild chronic inflammation without any signs of active inflammation. The parasitologic examination of feces was negative.

The patient received methylprednisolone 40 mg daily with gradual dosage decrease every seven days which lead to clinical improvement. About 3 weeks later, with the patient receiving methylprednisolone 24 mg daily, the symptoms reappeared. The repeat CT scan and repeat colonoscopy failed to show any considerable lesions. Gastroscopy was normal. In order to examine the small intestine we performed an MR enteroclysis and a capsule endoscopy both of which had normal findings and failed to show any considerable lesions of the small intestine.

Because of the persistence of the symptoms an exploratory laparoscopy was performed during which an inflammatory mass of the small intestine, at about 50 cm from the ileocecal valve, was identified which was excised after conversion to open laparotomy and a side to side anastomosis was performed. On opening the surgical specimen a whole toothpick, measuring 6 cm long, was found embedded in the mucosa that perforated the

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Fig. 1. — CT scan showing the presence of a small intestinal loop in the right iliac fossa with adhesion to the anterior peritoneum and thickening of the intestinal wall (arrow). Also inflammatory infiltration of the adjacent fibrofatty tissue is present.

bowel wall and formed an enteroenteric fistula (Fig. 2). Also there was an abscess formation in that area and presence of fungi (*actinomyces*).

The postoperative course was uneventful and the patient was discharged 8 days after surgery.

## Discussion

Toothpick injury of the gastrointestinal tract is often associated with considerable morbidity and mortality (2). Diagnosis of toothpick injury can be difficult as there are no specific physical findings or laboratory examinations which may aid the diagnosis (2) and patients usually do not recall having swallowed the toothpick, so a temporal relation between ingestion and

the onset of symptoms cannot be established (3). The clinical presentation of toothpick injury, which more frequently occurs in the duodenum and the sigmoid colon (3), can vary from a mild nonspecific chronic distress or chronic pain to an acute abdomen (6) with the majority of patients presenting with abdominal pain (3). The duration of symptoms before diagnosis may vary from a few days to several months (3). Bowel disease caused by toothpick ingestion can manifest as various symptoms and mimic other diseases. The complications that can be caused by toothpick ingestion are obstruction, perforation, hemorrhage, fistula formation, small bowel inflammation, sepsis and even death (5-7). In our case the patient presented with an abdominal distress from about a month that subsided with cortisone administration and reappeared after discontinuation of treatment. The symptoms were caused by a fistula of the terminal ileum caused by the toothpick that mimicked Crohn's disease. There are only a few reports in the literature of a toothpick injury mimicking Crohn's disease (6,8,9).

Imaging studies are of little help in establishing the diagnosis as wooden toothpicks are radiolucent. Using contrast is important in identifying and locating non radiopaque foreign bodies (5). In a review study toothpicks were identified by imaging studies only in 14% and by endoscopy in 19% of cases. Most of the cases were diagnosed during laparotomy (53%) and a few at autopsy (12%) (3). The reported sensitivity of imaging studies in detecting toothpicks is for simple X-rays 9%, for CT scans 15%, for US examination 29% and for

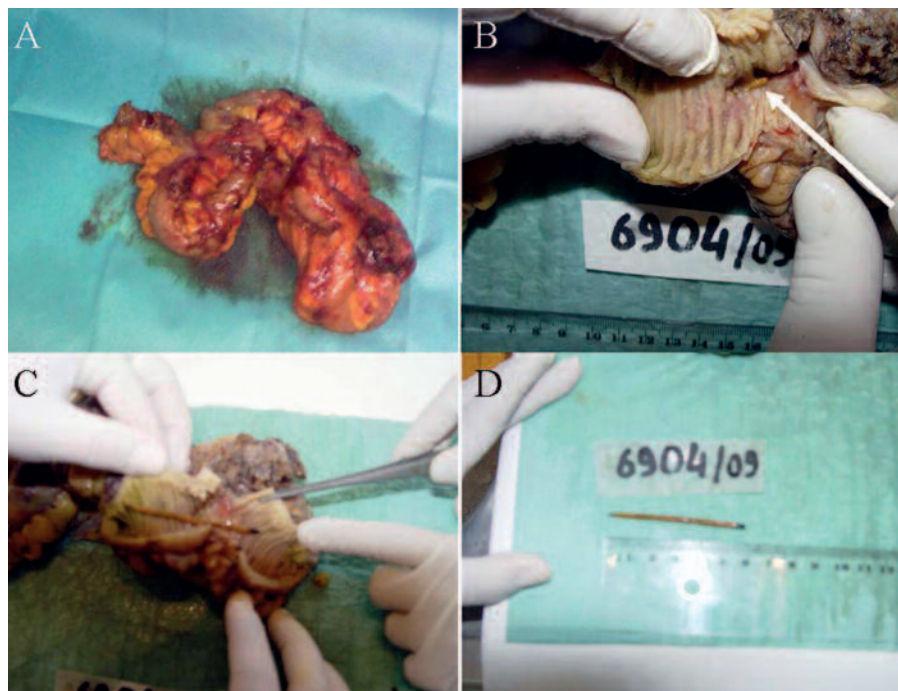


Fig. 2. — A. The surgical specimen of the small intestine inflammatory mass. B,C. The small intestine with the toothpick perforating the intestinal mucosa. D. The toothpick measuring 6 cm long.

endoscopy 70% (3). In the present case X-rays, abdominal US and abdominal CT failed to show the toothpick. Even the use of MR enteroclysis and capsule endoscopy failed to identify the ingested toothpick. However, the CT scan showed a stenosis of the terminal ileum that was considered to be Crohn's disease.

In conclusion, the case of an ingested toothpick causing intestinal inflammation and ileal stenosis is rather rare. In this case the diagnosis of Crohn's disease is often made based on clinical symptoms and imaging studies, which usually fail to depict the ingested toothpick, and the correct diagnosis is only established during laparotomy as in our case.

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