

## Pyogenic hepatic abscess induced secondary to toothpick penetration of stomach

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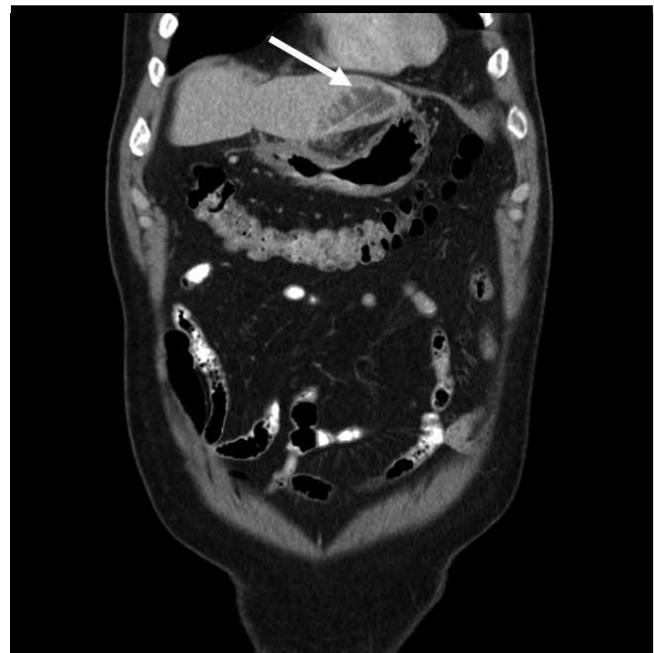
Dear Editor,

Perforation of the gastrointestinal tract caused by the unexpected presence of an ingested foreign body is uncommon, and formation of posterior hepatic abscess is even rarer (1). Early and precise diagnosis is difficult because of varied clinical symptoms, lack of specific complementary examinations, and difficulty of recalling the ingestion. We present a case who was admitted for a hepatic abscess secondary to stomach perforation by a toothpick, which was confirmed and removed by diagnostic laparoscopy.

A 63-year-old male visited our hospital in March 2013 owing to epigastric pain and weakness for 10 days. He suffered from diarrhea four times and had poor intake with loss of body weight. There was no associated heartburn, vomiting, fever, jaundice, haematemesis, melena, chills, chest pain, or constipation. He had no medical record for acute appendicitis, allergy for medication, and food and blood transfusion, but he had gastric ulcer with medication for 30 years and gout without medication for 10 years. Physical examination revealed soft and mild distended abdomen by tympanic percussion without rebounding tenderness and an old operation scar over the lower abdomen. Laboratory examination revealed elevation of C-reactive protein (CRP) (13.15 mg/dL) and white blood count (WBC) (12800/ $\mu$ l). Abdominal sonography revealed a hepatic mass that was suspected of abscess. Computerized tomography (CT) was arranged and showed an abscess measured 55 mm $\times$ 23 mm in size at the left hepatic lobe (segment 4B) with a foreign body that possibly perforated the stomach (Figure 1). Cefmetazole and metronidazole were intravenously administered. On the day 4, diagnostic laparoscopy was

performed, and a toothpick was found embedded in the left hepatic lobe, resulting in a gastric antrum perforation (Figure 2). The toothpick was removed, the abscess was aspirated, and the antrum defect was closed with a drainage placed.

*Streptococcus anginosus* and *Streptococcus mitis* infections were identified, and cefmetazole was administered until blood cultures were negative and laboratory examinations revealed normal CRP (0.6 mg/dL) and WBC (6900/ $\mu$ l) levels. The follow-up CT showed complete



**Figure 1.** Abdominal computed tomography revealed a multiloculated, irregular hepatic abscess; a linear high density (arrow) substance can be seen along with liver abscess, which was suspected as a foreign body from the stomach

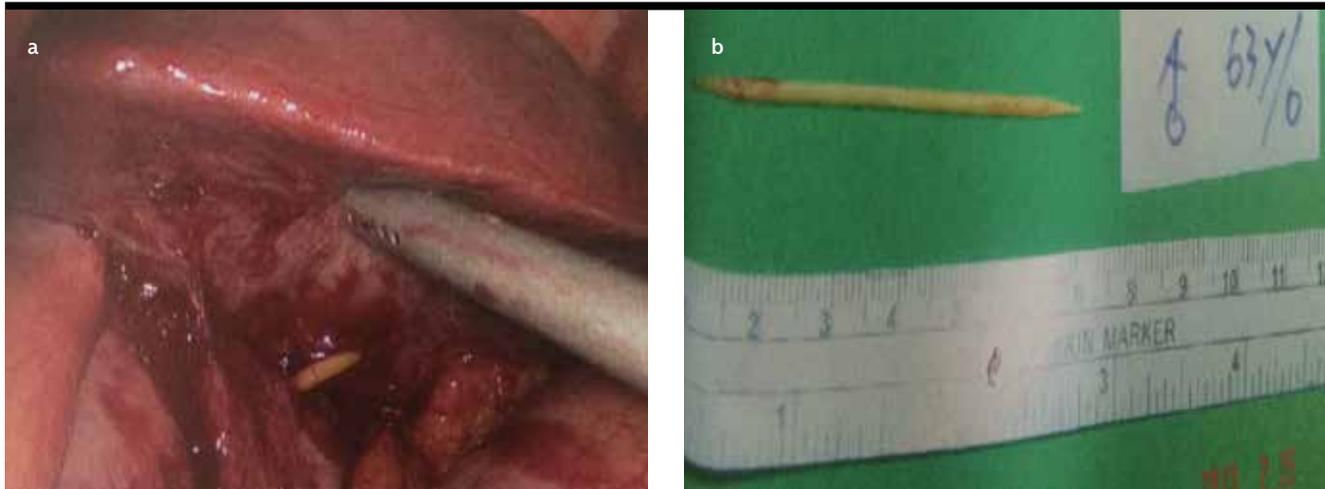
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**Figure 2.** The toothpick extracted by diagnostic laparoscopy (a); the toothpick removed from the liver measured 6 cm in length (b)

resolution of the hepatic abscess. The total antibiotic duration was 7 days. The patient was discharged on the day 7 with completely resolved symptoms and signs. All medical records were collected after informed consent of subject and the study was carried out in accordance with the IRB guidelines and regulations from Changhua Show Chwan Memorial Hospital Hospital.

In this case, *Streptococcus anginosus* and *Streptococcus mitis* were identified from blood culture. *Streptococcus mitis* is mainly associated with dental caries in humans (2). The evidences further confirmed that the toothpick was swallowed via the oral cavity to the stomach, and then it perforated into the liver. It is difficult to diagnose a foreign body migration as a cause of liver abscess because of the non-specific symptoms. Abdominal CT is the preferred diagnostic examination for foreign body, and laparoscopy may be recommended for the treatment of many intra-abdominal infections (3,4). We suggest CT for detecting abscess, possible perforation or foreign body and laparoscopy for diagnosing and managing perforation and foreign body. Antimicrobial therapy is necessary for treating bacteremia and preventing hematogenous dissemination.

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