Toothpick Perforation of the Duodenum: A Case Report

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Abstract

Toothpicks are an uncommon form of ingested foreign bodies, and swallowed toothpicks resulting in perforation of the gastrointestinal tract are infrequently reported. Early diagnosis and immediate retrieval of ingested toothpicks associated with gastrointestinal perforation is important for reducing morbidity and mortality. We report a case of 43 year-old male presenting with epigastric pain of one-week duration, caused by a double-pointed toothpick perforating the second portion of the duodenum. The toothpick was successfully removed by using a polypectomy snare via endoscopy. The patient was symptom-free after two weeks of follow-up. ( J Intern Med Taiwan 2004; 15: 219-222 )

Key Words : Toothpick, Gastrointestinal perforation, Duodenum

Introduction

Ingestion of foreign bodies is usually an accidental or intentional event, often occurring in the young children, people with dentures or retarded mentality, and psychologically disturbed persons. Most of swallowed foreign objects uneventfully pass through the gastrointestinal tract, while those with sharply pointed ends such as toothpicks, fish bones and chicken bones, have a high risk of perforating the gastrointestinal tract, especially in the duodenum and the sigmoid colon1. We report a 43 year-old male presenting with epigastric pain of one-week duration, caused by a double-pointed toothpick perforating the second portion of the duodenum. The toothpick was successfully removed endoscopically without complications.

Case Report

A 43 year-old male complained of epigastric discomfort after he accidentally swallowed a wooden toothpick, while drinking a cup of tea, 7 days prior to calling at the outpatient department. Physical examination was unremarkable except for epigastric tenderness. Upper gastrointestinal endoscopy was immediately performed and showed a long wooden toothpick located in the duodenum [Fig. 1] with one end of a toothpick embedded in the medial wall of the second portion of the duodenum [Fig. 2]. The toothpick had penetrated the duodenal wall for approximately 1.5 cm. There was mild hyperemic and swelling mucosa around the penetrating wound, but no evidence of hemorrhage was found. The stomach was normal. The narrow lumen, limited space and fixed position of the duodenum make maneuvering difficult in this area. So, the toothpick had to be removed endoscopically with a polypectomy snare holding the free end of the toothpick, turning it around, so that the free end faced upwards, then carefully retracting and dislodging it from the penetration site. The removed toothpick with double-sharped ends measured 6.5 cm in length. Subsequently, he was admitted to our hospital with normal laboratory
examination. Chest film and abdominal radiography after removing the swallowed toothpick revealed no free air. Abdominal ultrasound showed no ascites and no fluid accumulation in the retroperitoneal area. The patient was placed onnothing per orem and parenteral fluids, without use of antibiotics. No abdominal pain, nor gastrointestinal bleeding were noted afterwards. Oral feeding was started on the third day and the patient was discharged with uncomplicated clinical course up to 2 weeks' follow-up.

Discussion

Toothpicks used as a tooth-clearing instrument and eating utensil are an uncommon cause of ingested foreign bodies, which usually have predisposing factors including carelessness, rapid bolting of food, and decreased sensitivity of the palatal surface, i.e., dentures, ingestion of very cold liquids, or excessive ethanol use. Ingested toothpicks have a high potential for causing gastrointestinal complications, such as bleeding, perforation, obstruction, sepsis and death. Foreign bodies in the gastrointestinal tract have a tendency to lodge in location where there is an anatomic sphincter, acute angulation, physical narrowing, prior surgery, or congenital gut malformation. Toothpick-related gastrointestinal injury most frequently occurs at the duodenum, followed by the sigmoid colon. In rare instances, swallowed toothpicks could migrate to the adjacent structures or to distant locations including pleura, leg, inferior vena cava and heart. Clinical presentations of gastrointestinal injuries associated with ingested toothpicks include abdominal pain, gastrointestinal bleeding and obstruction. Diagnosis of toothpick-related injury is difficult because patients are usually unaware of having ingested toothpicks. The definitive diagnosis was most commonly made at laparotomy (53%), followed by endoscopy (19%), imaging studies (14%), and autopsy (12%). Imaging studies including X-ray and computed tomography usually have a low sensitivity to identify the presence of swallowed toothpicks. Conventional X-ray studies are of little help in the diagnosis because wooden toothpicks are not radiopaque. Abdominal ultrasound has been reported to demonstrate swallowed toothpicks frequently showing a hyperechoic, thin, straight line or a hyperechoic dot. Early diagnosis and retrieval of ingested toothpicks with gastrointestinal perforation is critical because perforating toothpick is often associated with considerable morbidity. Delayed diagnosis can result in mortality and overall mortality associated with ingested toothpicks is 18%, especially in patients presenting in shock or with enteric-vascular fistulas. While perforating toothpicks are encountered, endoscopic extraction using a polypectomy snare, grasping forceps or biopsy forceps, should be tried first before subjecting the patient to operation. Surgical intervention is indicated to those cases with complications such as intractable bleeding, peritonitis, abscess or fistulas. Surgery is also indicated when swallowed toothpicks can't be retrieved endoscopically. With the advent of laparoscopic surgery, laparoscopic exploration has been reported as a new modality in the management of ingested toothpicks with gastrointestinal perforation.

References


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Fig.1. Endoscopic image showing a wooden toothpick located in the duodenum.

Fig.2. Endoscopic image showing a toothpick embedded in the second portion of the duodenum (arrow) with mild hyperemia and swelling around the penetrating wound, and a polypectomy snare holding the free end of the toothpick.

牙籤造成十二指腸穿孔：一病例報告

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摘 要

牙籤是一種不常見被誤吞的異物，且吞下之牙籤造成胃腸道穿孔之病例並不多。然而，對已經造成胃腸道穿孔之牙籤能夠予以早期診斷和即時移除，可以降低其相關的罹病率及死亡率。我們報告一例 43 歲男性患者，以上腹疼痛表現，胃鏡檢查發現一牙籤刺穿十二指腸第二部分腸壁，經由內視鏡成功取出牙籤。之後，病人追蹤兩星期均無症狀。