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PERFORATION OF THE CECUM BY A TOOTHPICK: REPORT OF A CASE AND REVIEW OF THE LITERATURE

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□ **Abstract—Background: Ingesting a foreign body (FB) is not an uncommon occurrence. Most pass through the gastrointestinal (GI) tract uneventfully and rarely cause complications. However, long, sharp, slender, and hard objects such as fish bones, chicken bones, and toothpicks may lead to perforation of the GI tract, which is a potentially life-threatening complication. Case Report: We report the case of a 50-year-old woman who presented to the Emergency Department of our hospital complaining of right lower quadrant abdominal pain of 2 days' duration. Ultrasound imaging and computed tomography scan demonstrated the presence of a foreign body protruding from the lateral cecal wall and surrounded by an area of inflammation. The patient was taken to the operating room, where a toothpick was found to have perforated the cecum. The FB was removed and the defect of the intestinal wall was closed using a TA linear stapler (Covidien, Mansfield, MA). The patient was discharged on the 8th postoperative day. We also conducted a literature search for reports on injuries caused by ingested FBs. Why Should an Emergency Physician be Aware of This?: Perforation of the GI tract by an ingested FB in the adult population is most commonly secondary to accidental ingestion. Patients rarely recall the episode of the ingestion, or may remember the incident only after a diagnosis is made. We present this case to increase awareness of the diagnosis.** © **2014 Elsevier Inc.**

□ **Keywords—foreign body; toothpick; ingestion; perforation; cecum; surgery; treatment**

INTRODUCTION

Ingesting a foreign body (FB) is an accidental or intentional event often occurring in young children, people who wear dentures, selected professions (dressmakers and carpenters), alcoholics, prisoners, and psychiatric patients (1–7). The vast majority of ingested FBs pass through the gastrointestinal (GI) tract uneventfully and rarely, in <1% of patients, cause perforation. However, long, sharp, and slender objects, such as fish bones, chicken bones, and toothpicks, may lead to perforation of the GI tract, which is a potentially life-threatening complication (2,3,5,6,8–10). Early diagnosis and immediate extraction of the ingested FB is important for reducing morbidity and mortality. We report our experience of the treatment of cecal perforation secondary to an ingested FB (toothpick). The aim of this case report is to increase awareness of the diagnosis. In addition, we conducted a systematic review of the literature of injuries from ingested FBs.

CASE REPORT

A 50-year-old woman presented to the Emergency Department of our hospital complaining of right lower quadrant pain of 2 days' duration. It was moderately severe in intensity without associated vomiting, diarrhea,

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constipation, or fever. There was no report of dysuria, hematuria, or frequency of urination. The patient reported no medical problems. She did not have any previous surgical interventions and she denied any previous traumas.

The physical examination revealed a palpable mass in the right lower quadrant, with moderate tenderness and mild discomfort to deep palpation without guarding or rebound tenderness. Bowel sounds were present and there was no distention of the abdomen. The rectal examination revealed normal sphincter tone, no tenderness or mass, and normal appearance of the stool. The vital signs were normal.

Laboratory investigations revealed normal values. White blood cell (WBC) count 8.4 k/μL (4.0–10.0 k/μL), hematocrit 39% (36–46%), hemoglobin 13 g/dL (12–16 g/dL), C-reactive protein 7.54 mg/dL (<10 mg/dL), platelets 235.0 (140.0–440.0 k/μL), serum glutamic oxaloacetic transaminase 12 IU/L (5–40 IU/L), serum glutamic pyruvic transaminase 21 IU/L (5–45 IU/L), bilirubin 0.27 mg/dL (0.10–1.30 mg/dL), and direct bilirubin 0.10 mg/dL (0.00-0.30 mg/dl). A urinalysis was normal.

Chest and abdominal radiographs were normal. An urgent abdominal and pelvic ultrasound (US) was performed. This revealed a linear echogenic structure in the right lower quadrant. There were no features to suggest acute appendicitis. The right ovary was normal. The radiologist requested an abdominopelvic computed tomography (CT) scan. The CT scan confirmed the presence of a narrow linear hyperdense FB penetrating through the lateral wall of the cecum (Figure 1). The region was surrounded by an area of inflammation. No extraluminal air or contrast material was seen.

Figure 1. Computed tomography image shows hyperdense toothpick (arrow) penetrating through the lateral wall of the cecum.

Initially, the patient did not report any known ingestion of a FB. She was later questioned carefully and then recalled eating a club sandwich and potatoes that contained toothpicks several days prior to the onset of her symptoms.

The patient underwent emergency laparotomy. During mobilization of the cecum by dissection of the peritoneum along the cecum and the ascending colon, we found tight adhesions between the cecum and the abdominal wall. After dissection of the adhesions, an intact toothpick was found protruding from a perforated cecum about 2 cm into the lateral abdominal wall (Figure 2) and was removed. The corresponding region in the lateral cecal wall was fibrotic. This was excised and the defect closed using a TA linear stapler (Covidien, Mansfield, MA). The peritoneal cavity was lavaged and a drain was inserted.

The procedure was well tolerated by the patient. Intravenous antibiotics were administered for 5 days. Her postoperative course was uneventful and she was discharged in good condition on the 8th postoperative day.

DISCUSSION

Perforation of the colon can have any number of causes. Most often it is the result of carcinoma or diverticulitis (11). Other causes are inflammatory disease of the large intestine, iatrogenic perforation, perforation as a result of blunt or penetrating abdominal trauma, and ingestion of a FB.

Ingested FBs can cause GI complications such as bleeding, obstruction, perforation, abscess, sepsis, and death. Most ingested FBs (75%) pass through the GI tract

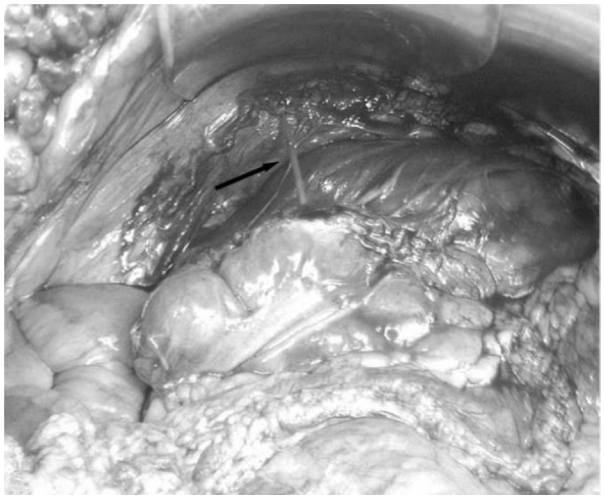

Figure 2. Toothpick (arrow) protruding from a perforated cecum with minimal local reaction.