



Ileal perforation by an odd foreign object

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ABSTRACT

Perforation of the gastrointestinal system by a foreign body is seldom observed in clinical practice; however, it has great importance because it is preventable and can usually be easily treated. In this case report, we present a young male patient, who mistakenly swallowed a foreign body and presented to the emergency service one day later with acute abdomen. The 23-year-old patient was diagnosed with acute appendicitis and underwent emergency laparotomy. During the operation, a plastic object that perforated the terminal ileum lumen and protruded into the abdominal cavity was identified. Along with appendectomy, the foreign body was removed and the ileum was repaired. The detailed history of the patient revealed that he had mistakenly swallowed something one day before the onset of abdominal pain. The patient was discharged on the postoperative seventh day following an uneventful course.

Keywords: Ileal perforation, foreign bodies, appendicitis

INTRODUCTION

Accidental ingestion of a foreign body is often encountered in clinical practice; however, intestinal perforation due to such a cause develops rarely, because the swallowed foreign body usually advances through the gastrointestinal tract without any problems and is excreted with faeces. Only 1% of ingested objects result in gastrointestinal system (GIS) perforation (1). These materials are generally characterized by being long and sharp-edged. Perforation most often occurs in the terminal ileum and recto-sigmoid region, which anatomically show angulation (1, 2). Goh et al. (2) reported that intra-abdominal perforations most frequently influence the terminal ileum, with a rate of 38.6%. Terminal ileum perforations are not initially considered as part of differential diagnosis since they clinically mimic acute appendicitis and diverticulitis (3). Herein, we present a young male patient who underwent surgery for a presumptive diagnosis of acute appendicitis and was identified to have an unusual perforation at the terminal ileum due to a foreign body.

CASE PRESENTATION

The young male patient (age: 24; height: 176 cm; body weight: 75 kg), who had no known previous diseases or history of chronic drug use, presented to the emergency service with generalized abdominal pain. The physical examination showed localized pain and sensitivity in the right lower quadrant with rebound tenderness. As per the results of the routine blood studies, there were no pathological values except the following: leukocyte: 19,9 k/uL (normal range: 4.6-10.2) with 84.4% neutrophil. The patient was hospitalized at the general surgery service with a presumptive diagnosis of acute appendicitis. The abdominal ultrasonography identified intense gas artefacts in the midline and minimal free fluid between intestinal loops with no signs in favour of appendicitis, therefore further evaluation with abdominal computerized tomography (CT) was suggested. The abdominal CT scan indicated the fat density in the ileocecal region to be normal, and it was not reported as appendicitis. Although radiologic methods did not suggest acute appendicitis, the patient was planned for an emergency laparotomy with a presumptive diagnosis of acute appendicitis based on the clinical presentation and leukocytosis. The patient's abdomen was accessed through a Mc Burney incision under general anesthesia. During the exploration, an unusual foreign body was identified to have perforated the terminal ileum 12 cm proximal to the ileocecal valve (Figure 1). The sharp-edged object that was plastic in nature was removed from the intestinal lumen and primary repair was performed to the ileum. The patient's appendix was hyperemic, so, he underwent appendectomy and the specimen was sent for pathological analysis. A surgical drain was placed and the abdomen was closed.

When the patient's detailed history was obtained retrospectively during his follow-up in the post-operative period, it was identified that he had had a feeling of obstruction in his throat while drinking fruit juice out of a plastic cup 24 hours before the onset of his abdominal pain, and that this feeling disappeared after he drank a few glasses of water. The patient was discharged on the seventh postoperative day following an uneventful recovery.

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Figure 1. Foreign body detected during perioperative ileocecal region exploration that protruded from the bowel wall

The foreign body was a semi-transparent, plastic object with a sharp edge that was approximately 40 x 3 x 2 mm, which looked like a fishbone at first glance, as per in vitro observation (Figure 2). The patient's abdominal CT result was assessed once again by the radiologist; however, the foreign body could still not be visualized.

DISCUSSION

One of the most frequent reasons of emergency service admissions is foreign body ingestion. Patients at highest risk of ingestion include children, elderly, those with dentures, poor mental status and imprisoned people (4). Most foreign materials are excreted via the faecal route after they pass the gastroesophageal junction (5). Nevertheless, 1% of ingested materials, especially those that are long and sharp-edged, result in GIS perforation (1). The materials that most often cause GIS perforation include sharp objects such as fish bones, chicken bones and toothpicks (6). However, pencils, nails, nail clippers, batteries may also result in GIS perforation, albeit rare (7). GIS perforation secondary to migration of biliary stents has previously been reported (8).

Our case was young and he was not within any of the above-mentioned risk groups. Since he did not mention ingesting any foreign bodies during his preoperative evaluation, a GIS perforation that may have developed as a result was not considered as part of differential diagnosis. In the posterior-anterior chest x-ray, there was no free air under the right diaphragm. On the other hand, free sub-diaphragmatic air is not frequently observed in GIS perforations (1). Goh et al. (2) specified that free air under the diaphragm was present in only 15.9% of the cases. The reason behind this can be explained as follows: once the foreign material perforates the intestinal wall, the consequent inflammatory mass is covered by granulation tissue, intestinal wall, omentum and fibrin (7).

Intestinal perforation secondary to ingestion of foreign materials may clinically mimic acute appendicitis or diverticulitis. Especially in cases with terminal ileum involvement, which is the most frequent site for perforations, patients are operated on for acute appendicitis (9, 10). Our patient was not within any risk groups in terms of foreign body ingestion and he did not describe ingestion of a foreign body in his history. When



Figure 2. The removed foreign body

the foreign body was shown to the patient following the operation, he stated that he had a feeling of obstruction in his throat while drinking fruit juice one day before the onset of his abdominal pain and that this feeling disappeared after he drank a few glasses of water.

Abdominal x-ray, CT, multi-detector CT (MDCT) and US may all be used for the evaluation of abdominal pain following foreign body ingestion. Drakonaki et al. (11) stated the advantages of US as high flexibility, reproducibility, low cost and avoiding radiation exposure, and emphasized that it could detect certain non-radio-opaque materials that could not be imaged via MDCT. Laparoscopy is another important diagnostic and therapeutic method in the evaluation and treatment of foreign body perforations (12, 13). In cases where a definitive diagnosis cannot be made, laparoscopic approach can be considered to avoid unnecessary laparotomies. Goh et al. (14) showed that the sensitivity of CT in detecting a fishbone was 7.4%; however, this rate increased to 100% in retrospective evaluation. In that respect, it is understood that suspicion of foreign body ingestion is imperative, especially in patients and anatomic sites at risk. However, no foreign bodies were identified in the retrospective evaluation of CT scan in our case. This was contributed to the fact that the object was not radio-opaque.

Aren et al. (15) identified the risk factors for acute appendicitis as the following: being in the 15-30 year age group and having leukocyte values above 15.000/mm³. Our case had both of these risk factors. On the other hand, he did not have any risk factor for foreign body ingestion

CONCLUSION

GIS perforation should be kept in mind as part of differential diagnosis in patients who present to the emergency service with abdominal pain, even in the absence of any obvious risk factor for foreign body ingestion.

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