

A rare cause of acute appendicitis: an ingested foreign body

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ABSTRACT

Various kinds of foreign bodies causing appendicitis have been reported. However, a needle contained in the appendix is very rare, especially in adults. We report an unusual case of a twenty year old man who had ingested a needle ten days prior and presented with signs and symptoms of acute abdominal pain. An abdominal computed tomography scan revealed acute appendicitis. The patient was successfully treated with laparoscopic surgical intervention. In cases of a foreign body in the gastrointestinal tract that cannot be removed endoscopically, the emergence of non-specific symptoms may be early symptoms of acute problems in the abdomen.

Key words: Appendicitis; foreign body; ingestion; needle.

INTRODUCTION

Foreign body ingestions are frequent in children, but rare in adults. Patients with mental disorders and prisoners are the individuals that comprise this group. Foreign bodies generally do not cause complications and pass through the gastrointestinal tract spontaneously, but perforation can occur by sharp or pointed foreign bodies or gastrointestinal erosions and abrasions can occur with retained foreign bodies which can cause bleeding.^[1] Acute appendicitis caused by foreign bodies is a very rare condition.^[2] The prevalence of appendicitis due to foreign bodies is approximately 0.0005%.^[3] Various kinds of foreign bodies such as a needle, tongue stud, screw, crown post, tooth root, and pin can cause appendicitis.^[2-7] Foreign bodies go into the appendiceal lumen and cause an inflammatory reaction with or without perforation.^[4]

In this case we report about a 20-year-old man who underwent laparoscopic appendectomy for acute appendicitis due to foreign body ingestion.

CASE REPORT

A 20-year-old man was admitted with periumbilical pain and loss of appetite over duration of 24 hours. On physical examination, pain and defense was found on deep palpation of the right lower quadrant and the periumbilical region. The patient did not have a fever. White blood cells were $14,000 \times 10^3/\mu\text{L}$ with an absolute neutrophil count of 80%. A metallic foreign body in the right lower quadrant was found upon abdominal X-ray and a needle in the appendix with local signs of appendicitis was found upon examination of a computed tomography (CT) scan (Figure 1). According to patient's clinical signs and symptoms and CT scan we decided to perform a laparoscopic exploration. A slightly thickened and inflamed appendix was found during the exploration and an appendectomy was performed laparoscopically. Dissection of the appendicitis revealed a needle that represented the foreign body identified in the previous imaging studies (Figure 2a). The cause of appendicitis was not obstruction of lumen, but more likely due to the erosion of the needle close to the neck of the appendix. Pathologic evaluation was reported as a 7-cm long and 0.9-cm wide appendix with a macroscopic needle inside (Figure 2b) and an ulcerative appendicitis microscopically. The patient was discharged 3 days following surgery, with no post-operative complications.

DISCUSSION

Foreign body ingestion is a rare gastrointestinal entity in adults. Foreign bodies generally do not cause any complications and pass through the gastrointestinal tract spontaneously within a week. The complication rate of ingested

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Figure 1. Computed tomographic images of foreign body in appendix.

foreign bodies is estimated as less than 1%.^[1,8]

It was reported that various foreign bodies have been discovered including sewing needles, retained shot pellets, tongue studs, endodontic files, drill bits, dog hair, toothbrush bristle, toothpicks, fishing lines, mercury (after ingestion of the bulb of a thermometer) and condom fragments in the appendix.^[2,7,9,10] However, a needle in the appendix is a very rare condition.^[10]

Ingested foreign bodies may remain immobile in the appendix without stimulating an inflammatory response for extended periods or an inflammatory reaction with or without perforation.^[4,10] The clinical presentation can vary from hours to years.^[2,10]

The prevalence of appendicitis due to foreign bodies is approximately 0.0005%.^[3] Collins et al.^[9] has reported that of the 51.8% of 71,000 appendectomies caused by foreign body, only 5.5% were due to unusual foreign bodies.

Complications usually depend on the size and shape of the foreign bodies. Blunt foreign bodies cause appendicitis through obstruction of the appendiceal lumen and remain dormant for longer periods. Elongated, sharp foreign bodies (75% of foreign bodies in the appendix) are more likely to cause perforations, appendicular abscesses and peritonitis.^[2,9,10]

The symptoms may vary from asymptomatic to abdominal pain, with or without vomiting or diarrhea. Ingestion of the foreign body history, low grade pyrexia and/or tenderness/peritonism in the lower abdomen on examination and increased white cells and inflammatory markers on laboratory can be found. Radio opaque foreign bodies and/or free intraperitoneal air can be seen upon examination of the abdominal X-ray. Usually, a computed tomography would be required to confirm the diagnosis.^[9]

The management of ingested foreign bodies includes serial abdominal X-rays during follow up, endoscopic removal and surgery. Due to the risk of perforation if there is no spontaneous drainage of the foreign body or unsuccessful endoscopy, open or laparoscopic appendectomy is necessary to remove the needle.^[10]

Foreign bodies that are asymptomatic and in the distal part of the small intestine can be monitored by conservative treatment. We did not have information related to swallowing a needle in our case. There were no classic abdominal examination findings of acute appendicitis. During the investigation of the etiology of abdominal pain, it was diagnosed as in the early stages of acute appendicitis.

In conclusion, in cases of a foreign body in the gastrointestinal tract that cannot be removed endoscopically, and followed up



Figure 2. (a) Laparoscopic images of needle in appendix. (b) Macroscopic image of needle in appendix.

with conservative treatment, the emergence of non-specific symptoms may be the early symptoms of acute problems in the abdomen.

Conflict of interest: None declared.

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OLGU SUNUMU - ÖZET

Akut apandisit nadir bir nedeni: Yabancı cisim yutulması

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Çeşitli yabancı cisimlerin akut apandisite neden olduğu bildirilmiştir. Ancak apandikte iğne bulunması özellikle yetişkinlerde çok nadir görülmektedir. Bu yazıda, nadir bir olgu olan, 10 gün önce iğne yutan ve akut karın semptom ve bulguları ile başvuran 20 yaşındaki erkek hasta sunuldu. Karın BT görüntülerinde akut apandisit raporlanan hasta laparoskopik cerrahi girişim ile başarılı bir şekilde tedavi edildi. Endoskopik olarak çıkarılmayan ve konservatif tedavi ile takip edilen gastrointestinal sistemde yabancı cisim olan olgularda, nonspesifik semptomların ortaya çıkması akut karının erken dönem bulguları olabilir.

Anahtar sözcükler: Apandisit; yabancı cisim; iğne; yutma.

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