

Dual site intestinal perforation due to toothpick

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SUMMARY: Dual site intestinal perforation due to toothpick.

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We present a case where a toothpick perforation in both the large and small bowel was intra-operatively diagnosed.

A 45-years-old man presented with 48 hours abdominal pain associated with fever. The abdomen was tender at the McBurney point with signs of localized peritonitis. We suspected an acute appendicitis. The patient underwent a diagnostic laparoscopy. During the operation we exposed a toothpick perforating both sigmoid and small bowel. The toothpick was removed and a direct suture of the two perforations was performed. No faecal contamination or purulent peritonitis was showed. The patient was given 5 days of intravenous antibiotics and recovery was uncomplicated.

Perforations caused by foreign body ingestion are often non-specific and misdiagnoses such as diverticulitis or acute appendicitis are common. The diagnosis is most commonly made on radiological imaging or intraoperatively. Abdominal X-ray is unlikely to detect a foreign body unless it is high bone density or metal, CT scan has a higher yield. In our patient, although the ultrasound didn't show directly an appendicitis, we didn't decide to perform other diagnostic exams because of the typical clinical feature.

80 to 90% of foreign bodies transit the gastrointestinal tract without causing an associated pathology. However, the distal ileum and recto sigma tract are risk areas for impaction and perforation due to their caliber. There are no guidelines for the management of foreign bodies in the lower gastrointestinal tract. Case reports describe managing patients non-operatively with antibiotics or with surgery, as in this case.

KEY WORDS: Intestinal - Perforation - Toothpick.

Case report

Incidental ingestion of a foreign body is common. Intestinal perforation, as a result, occurs in <1% of foreign body ingestions, and often poses a diagnostic challenge. Patients often do not remember ingesting the object, and the clinical picture often resembles that of commoner conditions such as appendicitis and diverticulitis. We present a case where a toothpick perforation in both the large and small bowel was intra-operatively diagnosed. A successful outcome was achieved with surgical treatment.

We report the case of a 45-years-old man who presented to our emergency room with 48 hours abdominal pain localized at the right anterior iliac

fossa, associated with fever (38.5°C). The abdomen was tender, especially at the McBurney point with signs of localized peritonitis. Blood analysis showed an elevated WBC count and a 129 mg/L PCR. An abdominal ultrasound was performed and showed a small amount of liquid between small bowel loops at the right anterior iliac fossa; the appendix was not visualized. Based on clinical examination, blood analysis and ultrasound results, we suspected an acute appendicitis.

The patient underwent a diagnostic laparoscopy: the appendix was in retro-caecal position and presented as slightly inflamed, so we perform a standard appendectomy. As we continued the exploration of the abdominal cavity, we noticed some inflammatory adhesion between the sigmoid and the last small bowel loop (Figure 1). As we separated the two structures we exposed a foreign body (toothpick) that went out from the sigmoid and perforated the small bowel (Figure 2). The toothpick

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Figure 1 - Inflammatory adhesion between the sigmoid and the last small bowel loop.



Figure 2 - The toothpick went out from the sigmoid and perforated the small bowel.

was removed (Figure 3) revealing a small hole in both sigmoid and small bowel. No faecal contamination or purulent peritonitis was showed. A direct suture of the two perforations was performed. Following washout with 5 L of 0.9% sodium chloride, an abdominal drain was left in the inflammatory cavity.

The patient was given 5 days of intravenous antibiotics (Piperacillin-Tazobactam); recovery was uncomplicated. He remained afebrile postoperatively with decreasing inflammatory markers. Abdominal drain was removed on 5th post operative day. On discussion with the patient regarding the toothpick, the conclusion drawn was that he probably

swallowed it five days before during a barbecue. The patient was discharged on 6th post operative day; a clinical follow-up was made 30 days after surgery and showed a complete recovery. The patient did not required further admission for abdominal pain in the following 9 months.

Discussion

Perforations caused by foreign body ingestion are often non-specific and misdiagnoses such as diverticulitis, perforated peptic ulcer, and acute



Figure 3 - The toothpick removed revealed a small hole in both sigmoid and small bowel.

appendicitis are common. As in our case, there is often no recollection of toothpicks ingestion. The diagnosis is most commonly made on radiological imaging or intraoperatively (1). In our case the toothpicks lodged in the sigmoid causing a perforation through local trauma. It is likely that a loop of small bowel became adherent to the local inflammation in the sigmoid colon and then the toothpick eroded secondarily into the small bowel. This localized inflammatory mass protected the patient from developing generalized peritonitis (Figure 1), leading us to perform a direct suture of the intestinal wall of both sigmoid colon and small bowel, saving the patient from an intestinal resection.

Most foreign body perforations of the gastrointestinal tract are discovered intra-operatively, as in this case the patient does not usually recall ingestion, the most common site for foreign body perforation being the terminal ileum. Previously, others bowel perforation by foreign bodies such as toothpicks or chicken bones have been documented with the foreign body being discovered during laparotomy. Abdominal X-ray is unlikely to detect a foreign body unless it is high bone density or metal, CT scan has a higher yield (2). Although CT scanning is becoming the first-line examination for acute abdominal pain in middle-aged adults, in relative young and healthy patients with right lower quadrant abdominal pain, the ultrasound still remain the first step in treating patient with suspected acute

appendicitis because it is cost effective, easy to access and perform. But diagnostic tests are adjunctive to physical examination which is the aim of patient evaluation with suspected acute appendicitis. In obese and uncooperative patients sometimes ultrasound is unable to diagnose appendicitis. In such cases CT or MRI can be useful (3). In our patient, although the ultrasound didn't show directly an appendicitis, we didn't decide to perform other diagnostic exams because of the typical clinical feature, with right lower quadrant abdominal pain, fever and high inflammatory blood markers.

The differential diagnosis commonly includes acute diverticulitis, acute appendicitis, and acute abdominal pain from unknown causes. Small bowel and large bowel perforations present differently. Interestingly, the patient presented with symptoms most commonly associated with a sealed large bowel perforation (prolonged history of abdominal pain and with very little free liquid demonstrated at the ultrasound). Most patients have no recollection of food bone ingestion and the diagnosis is most commonly made on CT scan or intraoperatively (2).

Bowel perforation from a foreign body is relatively rare. Fish or chicken bones, and toothpicks are the usual culprits. The most common sites of abdominal perforation are areas of narrow lumen and high angulation such as the terminal ileum and recto sigmoid junction. Risk factors for foreign bone ingestion are use of dentures, prison inmates, alcoholics, psychiatric patients, children, dress

makers, carpenters, and previous bowel pathology (1). Eighty to ninety per cent of foreign bodies spontaneously transit the gastrointestinal tract without causing an associated pathology. However, the distal ileum and recto sigma tract are risk areas for impaction and perforation due to their caliber and angulation, especially in areas of a stenosis, previous surgery or congenital malformation. Complications such as acute abdomen secondary to perforation occur only in 1% of cases, but can lead to

a fatal outcome and account for 1,500 deaths per year in the USA due to the ingestion of foreign bodies. There are no guidelines for the management of foreign bodies in the lower gastrointestinal tract (4). Case reports describe managing patients non-operatively with antibiotics or with surgery, as in this case. A high index of suspicion allows an early diagnosis, which reduces complications and therefore this possibility must be considered in a case of an unclarified acute abdomen (4).

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