Duodenal diverticulum perforated by foreign body

Dear Editor,

Duodenal diverticulum (DD) is an anatomic condition that usually manifests with no symptoms and is incidentally diagnosed. We report a case of DD perforation after fishbone ingestion which required emergency surgery.

Case report

We report the case of a 82-year-old female with a history of hypertension who presented at our ER with 24-hour epigastric pain associated with nausea and hyporexia. Physical examination revealed a good general status with hemodynamic stability and low-grade fever. Her abdomen was soft and depressible with no signs of peritoneal irritation. Lab tests showed mild leukocytosis at 12,400 with 93.4% of neutrophils. Abdominal X-rays and ultrasounds were normal. As pain persisted an abdominal CT scan was ordered after 12 hours which showed a non-complicated DD in the second portion of the duodenum (Fig. 1) and a retroperitoneal abscess (Fig. 2) containing a calcium density image adjacent to the third portion of the duodenum. With a diagnosis of duodenal perforation secondary to foreign body an urgent surgical procedure was decided upon, during which a big retroperitoneal abscess secondary to fishbone perforation of a diverticulum in the third duodenal portion.
The patient underwent thorough washes, foreign body removal, diverticulectomy with endostapler, staple line invagination using 2/0 seton, and two vacuum drains. Postoperatively abscess management was based on digestive rest (NGT), total parenteral nutrition, somatostatin, and IV antibiotic therapy. Ingestion was reintiated on day 5 after surgery, and she was discharged after 14 days on completion of her endovenous antibiotic regimen.

Discussion

Duodenal diverticula (DD) have an incidence of 5 to 10% in patients undergoing upper GI tract studies (1,2). More than one are usually found, and are most common in the periampullary region of the second duodenal portion. Complications include pancreatitis, bile duct obstruction, and bleeding. Perforation is a rare complication, found in only 162 cases in a recent literature review (3). Diagnosis is complex given its nonspecific symptoms, which at times are not associated with peritoneal irritation; hence it may be mistaken for more common conditions such as cholecystitis, appendicitis, pancreatitis, and duodenal ulcer. Because of this abdominal CT scans are delayed in most cases (3,4). Overall, X-rays and ultrasounds have a low diagnostic yield but CT is highly sensitive and can usually identify diverticula, their location and contents, and their potential complications such as perforation (5).

GI tract perforation related to fishbone ingestion has a predisposition for selected sites including the pylorus, Treitz angle, ileocecal valve, and recto-sigmoid junction (6), hence fishbone-related duodenal perforation is a rare finding. Most perforated DDs in the literature are taken from series reported by Duarte et al. (2) and Juler et al. (7), where only two perforations were caused by a foreign body. Most common causes include diverticulitis (62%) and enterolithiasis (10%).

Perforation is considered a surgical emergency, albeit cases conservatively managed have been reported of late with the use of digestive rest, fluid infusion, antibiotics, and percutaneous drains (8). Also, in order to reduce trauma from laparotomy and to achieve early recovery some cases have been successfully managed with minimally invasive surgery (9). As regards the technique involved several options do exist: cephalic duodeno-pancreatectomy, Y-en-Roux duodeno-jejunosomy, choledocho-duodenostomy, pyloric exclusion, duodenostomy, and simple diverticulectomy as in the reported patient.

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References