Isolated gastric outlet and ileal obstruction are rare complications of gallstones. We report what we believe to be the first case of a gallstone causing gastric outlet obstruction while eroding into the duodenum, yet once in the duodenum, passing into the small bowel, causing ileal obstruction. The endoscopic appearance of the eroding gallstone was so unusual that it was initially mistaken for a fibrotic duodenal ulcer.

Key words: Bouveret’s syndrome, small-bowel obstruction

Introduction

Gastric outlet obstruction caused by an impacted gallstone in the pylorus or duodenum (Bouveret’s syndrome) is a rare complication of gallstone disease. It occurs most frequently in elderly women with a previous history of symptomatic biliary tract disease. It presents with epigastric pain and abdominal distension, and may be diagnosed preoperatively by plain abdominal films, endoscopy, contrast studies, or computed tomography (CT).

We describe a patient presenting with gastric outlet obstruction secondary to a gallstone eroding into the first part of the duodenum. This was initially misdiagnosed as a large fibrotic duodenal ulcer. The correct diagnosis was established only when the stone traversed the duodenum spontaneously, causing small-bowel obstruction.

Case report

A 77-year-old man presented with a 2-day history of severe, constant, colicky epigastric pain, and two episodes of vomiting. The vomiting had occurred after he had eaten, and the vomitus consisted mainly of undigested food. He had not passed stools for 2 days, but was passing flatus.

He had undergone vagotomy and pyloroplasty for duodenal and gastric ulcers 24 years previously, and had had an anterior resection for rectal carcinoma 4 years prior to this episode. Asymptomatic gallstones had been noted by staging CT for his rectal carcinoma.

The initial physical examination was unremarkable except for moderate epigastric tenderness. Laboratory data, including serum amylase level were within normal values.

Gastroduodenal endoscopy showed significant food debris in the stomach and a large lesion (Fig. 1) in the first part of the duodenum that was hard and difficult to biopsy. The lesion was considered to be a large fibrotic duodenal ulcer with slough in its base, causing gastric outflow obstruction.

The patient was started on high-dose omeprazole (80mg daily) and Helicobacter pylori eradication therapy. After commencing the omeprazole, the patient initially improved clinically. His abdominal pain and vomiting settled and he was able to tolerate some food. However, 4 days later, he again complained of colicky abdominal pain and vomiting, and developed abdominal distension.

An abdominal radiograph showed dilated small-bowel loops. Repeat endoscopy showed a scarred pylorus, but no evidence of the previously described ulcer. An abdominal CT scan showed a 4-cm gallstone in the small bowel and several dilated bowel loops proximal to this (Fig. 2). The patient underwent a laparotomy. An enterotomy was performed and the obstructing gallstone was retrieved from the ileum (Fig. 3).
Discussion

Gastric outlet obstruction caused by gallstones was initially described by Bouveret in 1896. Such obstruction occurs when a stone migrates through a cholecystoduodenal fistula into the first part of the duodenum. It is encountered most frequently in women in their seventh decade of life who have a previous history of symptomatic gallstone disease. It is associated with a mortality of up to 12%.2

It presents acutely with abdominal pain, vomiting, and pyrexia. Vomiting can be either gastric, in patients with complete gastric outlet obstruction, or bile-stained, in patients with incomplete obstruction.2-4 In the acute presentation, jaundice and hematemesis (caused by erosion of the cystic artery) have also been reported.5,6 In some patients, presentation may be more chronic, and may be associated with weight loss and anorexia. Differential diagnosis includes gastric outlet obstruction caused by neoplastic lesions, fibrotic ulcers, duodenal diverticula, and foreign bodies.2-4 Our patient had no previous history of symptomatic gallstones, but had had previous gastric and duodenal ulcers. Thus, the initial diagnosis was that of recurrent ulcer causing gastric outlet obstruction. The endoscopy findings were unusual and the eroding stone was mistaken for a fibrotic duodenal ulcer.

Radiological investigations are useful in diagnosing Bouveret’s syndrome. Plain abdominal films suggest the diagnosis in up to 20% of patients, by the presence of pneumobilia and the presence of a calculus at the right margin of the T12-L1 vertebrae.7

In most patients, however, diagnosis is reached by contrast swallow studies, abdominal CT scan, and gastroduodenoscopy, which can show gastric outlet obstruction and demonstrate the obstructing gallstone.8-11 In many patients, diagnosis is reached only at surgery.

If the diagnosis is reached prior to operation, then the obstructing gallstone may be removed or fragmented via gastroduodenoscopy.8-11 Fragmentation of obstructing gallstones with extracorporeal shockwave lithotripsy has also been successful.12,13

If the above methods fail, then surgical management is the next option. Two basic approaches have been described. One approach is a one-stage procedure in which the obstructing gallstone is removed, cholecystectomy is performed, and the cholecystoduodenal fistula