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An uncommon diagnosis: The Gallstone Ileus – Case Report

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Abstract

Gallstone ileus is a rare clinical entity, which accounts for less than 1% of mechanical bowel obstructions. When a gallstone migrates from gallbladder to the bowel through a fistula, it could impact anywhere in the gastrointestinal tract, even if the most common site is the terminal ileum. Gallstone ileus is characterized by high mortality rate because patients are usually elderly with cardiorespiratory or metabolic diseases. Clinical manifestations are typical of the bowel obstruction and onset may be acute, chronic or intermittent. Abdominal CT scan is the most helpful tool to detect gallstone ileus, even if the diagnosis remains a challenge. Management is controversial; the main goal is the extraction of a gallstone with enterotomy in order to relieve bowel obstruction. Fistula closure and cholecystectomy can be performed after resolution of the ileus and only if biliary tract symptoms recur.

Keywords

gallstone ileus; bowel obstruction; cholecystoenteric fistula; pneumobilia; enterolithotomy

Introduction

Gallstone ileus (GI) is a mechanical intestinal obstructive syndrome caused by one or more gallstones which migrate and occlude the intestinal lumen [1]. Gallstone ileus isn't a common complication of gallstone disease and it accounts for less than 1% of all mechanical bowel obstruction. The mortality associated with gallstone ileus ranges between 12% and 17% [2]. High mortality can be explained with the advanced age and related co-morbidities of the patients afflicted by gallstone ileus. Optimal treatment in acute setting is controversial and the primary goal is to relief the intestinal obstruction. We report the case of an elderly patient, who presented to our Institution with vomiting and abdominal pain. Plain x-ray and basal computed tomography of the abdomen revealed a mechanical bowel obstruction of the jejunum, caused by a big gallstone. An exploratory laparotomy was mandatory and enterotomy was performed in order to extract the gallstone from the bowel.

Case Report

A 89-year-old female referred to our Institution suffering from abdominal pain associated with nausea and alimentary vomiting for 4 days. Her medical history revealed stones in the gallbladder, acute cholecystitis three years ago, chronic myocardial ischemia, chronic renal disease and right hip replacement. At the admission, she complained abdominal pain and her abdomen was distended without rebound tenderness. Digital rectal examination did show any stools**.** Total leukocyte count was elevated (20,2 x 10^3cell/L) and liver function tests showed normal values. Plain abdominal radiography revealed

pneumobilia and gastrectasia (Fig. 1A). The diagnosis of gallstone ileus was confirmed with a basal CT abdominal scan, that showed a 4 x 3.3 cm stone in the lower right quadrant, and a cholecystoenteric fistula wasn't picked out (Fig. 1B). The patient underwent an exploratory laparotomy: gallstone was impacted into the jejunum. Enterotomy was performed and a large gallstone (4 x 3 cm) was removed (Fig. 2). The gallbladder was fused with the second part of the duodenum, where, probably, there was a fistula, which wasn't surgically treated in acute setting. The post-operative course was uneventful and the patient was discharged home on post-operative day 10. Follow-up at seven months revealed that she was asymptomatic for biliary symptoms.

Discussion

Gallstone ileus described the impaction, usually in the distal ileum, of one or more gallstones, entered in the bowel through a fistula, causing a mechanical obstruction [1]. This syndrome was first described by the anatomist Thomas Bartholin in 1654. GI is a rare complication of the gallstone disease and it accounts for 1% to 4% of all obstructive intestinal cases. Women are more affected than men, with a ratio of 3.5 to 1, and the median age is 70 years [3]. The mortality rates of 12% - 17% reflects the comorbidities of these elderly patients [2]. Most reports indicate that the diameter of the gallstone, in order to cause ileus, must be more than 2.5 cm and it usually impacts in the last loops of the ileum or in the ileocecal junction, where the intestinal lumen becomes narrow [4]. Obstructive symptoms are often intermittent and non-specific, so diagnostic delay is characteristic in this syndrome [2]. These patients complain often abdominal pain, nausea and vomiting and gallstone ileus must be suspected when that symptoms and a medical history of biliary disease are presents. Plain abdominal radiography can demonstrate one or more elements of the classic Rigler triad: intestinal obstruction, pneumobilia and aberrant stone. Unfortunately these signs are present only in 0% up to 87% of reported cases [5]. Diagnosis of gallstone ileus can be confirmed with CT abdominal scan; in fact, sensitivity, specificity and diagnostic accuracy of CT are 93%, 100% and 99% respectively [6]. Primary goal of the treatment is removing the gallstone; then management of the fistula is controversial [2]. The most common surgical treatment is the enterotomy performed with a longitudinal incision and transverse closure. This is the chosen procedure, best indicated for patients usually with a lot of comorbidities because of its lower invasivity and lower incidence of complications [7]. The recurrence rate in patients who underwent enterotomy with stone extraction alone is 5% to 9% and a spontaneous closure of the fistulous tract is possible in more than half of the cases [8]. A surgical alternative in the setting of gallstone ileus is the enterotomy with fistula closure and cholecystectomy. This procedure has a higher rate of gastrointestinal complications, compared with enterotomy alone; in fact, intra-abdominal abscesses and anastomotic leaks are more common [7]. A comparison between the two different management found that the mortality rates were similar but the morbidity was higher for patients who underwent enterotomy with cholecystectomy and fistula closure [9]. Fistula treatment will be considered after resolution of the gallstone ileus, if patient develops biliary symptoms, which happens in the 5% of the cases [3]; biliary reflux can also result in biliary malignancy with a prevalence of 2% - 6% reported in literature reviews [10]. In clinical practice with elderly patients who have a lot of comorbidities, a second surgical treatment, in order to perform cholecystectomy and fisula closure, is rarely performed.

Conclusion

Gallstone ileus is a rare cause of intestinal obstruction which affects elderly patients. Symptoms are often vague and non-specific, so diagnosis is typical delayed. CT abdominal scan is the diagnostic tool of choice with high sensitivity and specificity. We recommend enterotomy alone as treatment of choice, in patients with comorbidities, in order to relief bowel obstruction. Cholecystectomy and treatment of fistula should be considered only in patients in good clinical conditions and with recurrent biliary symptoms.

Figures

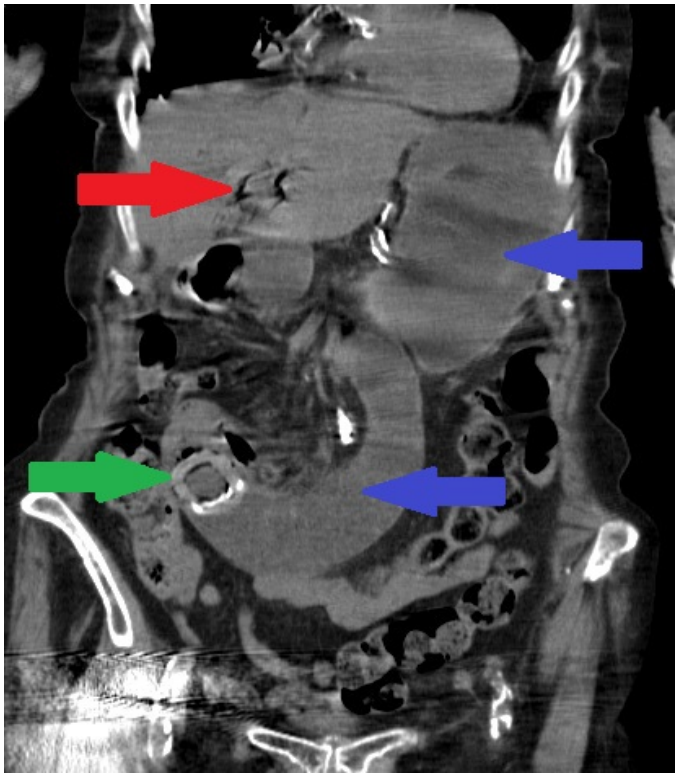

Figure 1: Abdominal CT scan shows the classic Rigler triad: an aberrant stone in the right lower quadrant (green arrow), pneumobilia (red arrow) and distension of stomach, duodenum and jejunum (blue arrows)

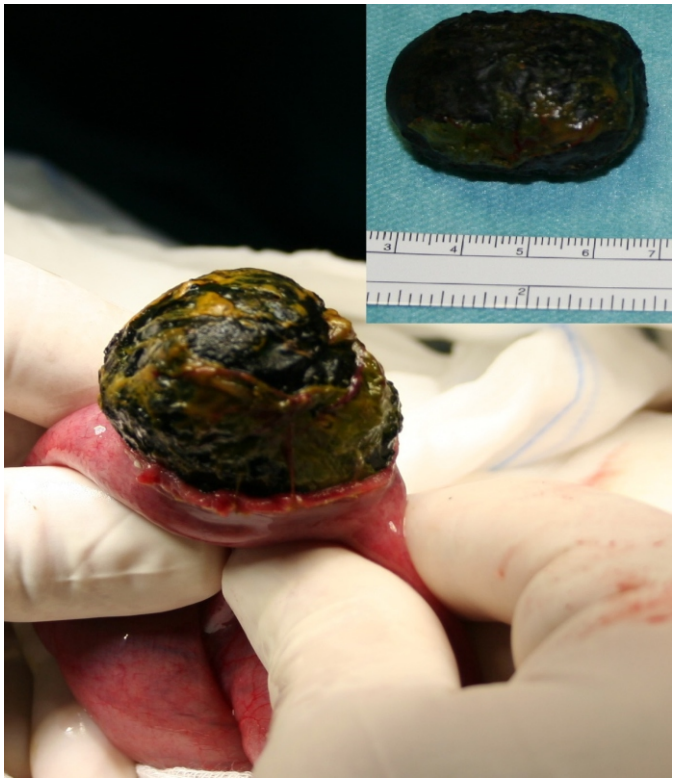

Figure 2: Enterotomy and gallstone extraction from first jejunum loop

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