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Case Report

Rigler's triad in gallstone ileus: a case report

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ABSTRACT

Gallstone ileus, a rare complication of cholelithiasis. This condition occurs when a large gallstone causes mechanical obstruction within the gastrointestinal (GI) tract, often due to a fistula between the gallbladder and the duodenum or stomach. Bouveret syndrome, a subset of gallstone ileus, involves gastric outlet obstruction caused by a gallstone. Here, we present the case of a 61-year-old female admitted with acute biliary pancreatitis, later diagnosed with gallstone ileus. Imaging revealed Rigler's triad, and surgical intervention included an exploratory laparotomy, enterolithotomy, and staged management of a cholecystoenteric fistula. Despite successful surgery, the patient's follow-up was limited due to voluntary discharge. This case highlights the complexity of gallstone ileus management and underscores the challenges in determining the optimal surgical approach, particularly in transient patient populations.

Keywords: Riglers triad, Gallstone Ileus, Gallstone disease

INTRODUCTION

The term ''gallstone ileus'' was first coined in 1654 by Dr. Erasmus Bartholin, a Danish physician and mathematician, who upon examining an autopsy patient noticed a mechanical intestinal obstruction caused by impaction of one or more large gallstones within the gastrointestinal (GI) tract.[1]

Complications associated with cholelithiasis are common and include acute cholecystitis, choledocolithiasis, pancreatitis, and gallstone ileus.[2] Bouveret syndrome is a rare form of gallstone ileus secondary to an acquired fistula between the gallbladder and either the duodenum or stomach. Through the fistula, a gallstone may enter the enteric system and cause a gastric outlet obstruction. Gallstone ileus is extremely rare, complicating only 0.3-0.5% of patients with cholelithiasis. Bouveret syndrome represents 1-3% of cases of gallstone ileus.[3]

CASE REPORT

It was a 61-year-old female patient who was admitted to the General Hospital of Reynosa "Dr. José María Cantú Garza" for presenting with abdominal pain of sudden onset 5 days prior in the epigastrium with irradiation to the left iliac fossa. She also reported episodes of emesis with gastrobiliary content and the absence of bowel movements. Laboratory results showed an elevation of serum lipase, compatible with pancreatitis, leukocytosis, and no elevation of bilirubins.

During the physical examination, a 15-point Glasgow coma scale was found, euthermic, the patient presented with tachycardia of 120 bpm, normotensive. The abdomen was semi-globous and painful on deep palpation in the right hypochondrium and epigastrium, with a pain score of 10/10 on the EVA scale. There was a positive Murphy's sign and decreased or absent peristaltic noises. An

ultrasound confirmed the presence of cholecystolithiasis, and together with the laboratory results, she was admitted for the management of acute biliary pancreatitis. A simple and contrasted abdominal computed tomography (CT) scan and an abdominal X-ray were requested for control, which highlighted the radiological findings of Rigler's triad (Figures 1 and 2).

Figure 1: (A) Visible gas inside the bile duct (pneumobilia).

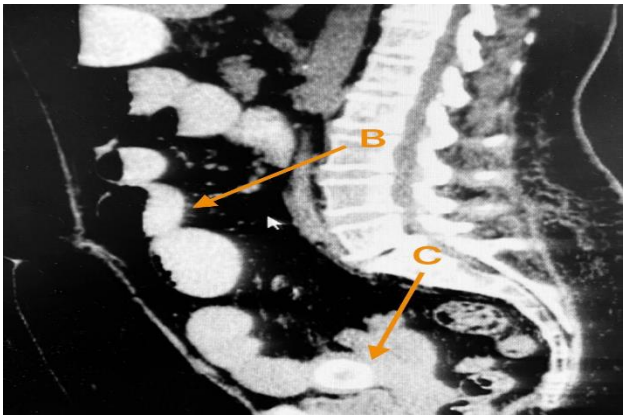

Figure 2: (B) Dilation of small intestine loops, and (C) presence of a gallstone in the ileum visualized by abdominal computed tomography in sagittal section.

Figure 3: Portion of the ileum in which the enterotomy is performed to extract the gallstone.

After the resolution of the acute pancreatitis, a surgical approach was performed as soon as possible via an exploratory laparotomy. The findings included a duodenal cholecyst fistula and an ovoid stone 1.7 meters from the angle of Treitz. An enterotomy was performed in the longitudinal direction on the antimesenteric side of the ileum (Figure 3), removing a stone from measuring 5×3 cm (Figure 4). The enterotomy was subsequently closed in 2 layers using Conell-Mayo and Lembert sutures, and the abdominal wall was closed in layers.

Figure 4: Gallstone obtained from the small bowel with dimensions of 5×3 cm.

Figure 5: Gallstone visualized in the small bowel (ileum) using abdominal computed tomography.

DISCUSSION

The biliary ileus is a rare complication in 0.3% to 0.5% of patients who have cholelithiasis. It usually occurs in adulthood (70-80 years old) and is more common in women than in men at a rate of 3.5-4.5:1. Gallbladders can enter the intestine through a fistulous path between the gallbladder and the duodenum, stomach or colon (Figure 5). The average size of the gallstones that are present is approximately 4 cm.[4] Most of the gallstones are commonly impacted on the distal ileus or ileocecal valve (60-75%). The proximal obstruction of gastric emptying or the duodenum occurs infrequently (4%) and is known as Bouveret syndrome.[5]

In the typical symptomatology of patients, it resembles a small intestine obstruction such as nausea, vomiting, abdominal distension and abdominal pain. Obstructive

symptoms can be intermittent, indicating that there is movement of the gallstones through the intestinal tract. Sometimes data of acute cholecystitis occur at the same time.[6]

Imaging studies can support us for the diagnosis, for example X-ray, computed axial tomography, abdominal ultrasound and cholangioresonance. There is no consensus or literature that mentions about which is the best surgical approach to the biliary ileum but there are different options: Exploratory laparotomy and enterolithotomy plus intestinal resection, exploratory laparotomy plus enterolithotomy plus intestinal resection plus cholecystectomy plus closure of the cholecystoenteric fistula (in a single stage) or the same previous procedure but in 2 stages or laparoscopically with a conversion rate to conventional surgery on 50% of occasions.[7]

On this occasion we present the case of a biliary ileum that presents characteristic data of the Rigler triad, which is present in less than 10% of cases, the diagnosis being incidental since the patient is diagnosed with acute biliary pancreatitis and due to the requested imaging study (abdomen CT) that presents the data of the Rigler triad: neumobilia, impacted gallstone at the ileon level, and intestinal oclussion data.

When performing the surgical approach, exploratory laparotomy plus enterolithotomy is performed at the level of the ileon and cholecystectomy and closure of the duodenal fistula in 2 stages. Subsequently, the patient requests her voluntary discharge from the hospital unit due to personal and family reasons.[8]

CONCLUSION

Having a biliary ileum, the case can be addressed for its resolution in different ways, there is no consensus that defines which method of approach and in how many stages it is the best for the surgical resolution of the problem, in our case the option of exploratory laparotomy + enterolithotomy is addressed with management of probable cholecystoenteric fistula in a 2ª stage. The exposed case could not be followed up with the patient since because it is a border area many patients are passing through or are foreigners, in our case the patient requested his voluntary discharge to return to his place of origin, so we do not know the conclusion of the condition as such, since it was discharged by tolerating orally, without pain and evacuating.

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