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Unusual Biliary Complication in the Modern Surgical Century: Bouveret's Syndrome

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Case Presentation: Here in, we report the case of a 60-year-old female patient who presented dyspepsia with vomiting of solids and liquids foods in the preceding weeks. Severe dehydration and asthenia concomitant. The examination showed epigastric pain with tympanic percussion. Laboratory: mild leukocytosis and hypokalemia. MRI: an image of 34 x 56 mm endoluminal hypointense is observed in duodenum compatible with biliary lithiasis. A suspicion of a fistula between the gallbladder and the duodenum was considered.

Conclusion: Bouveret's Syndrome is rare, so the diagnosis is of exclusion. The ideal treatment is endoscopic, but if this route fails, surgery is necessary, prioritizing the mini-invasive approach.

Keywords: bouveret's syndrome, fistula, gallstone ileus, mini-invasive approach, duodenal obstruction, enterolithotomy.

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Case Report

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Abbreviations: MRI: Magnetic Resonance Imaging, CT: Computed Tomography.

1. INTRODUCTION

Bouveret's syndrome, described by French physician Léon Bouveret in 1896, is a rare type of gallstone ileus.^{1,2-4}

It occurs in elderly patients and consists of duodenal obstruction secondary to the passage of a stone through a fistula between the gallbladder and the duodenum. Clinical presentation, a 60-year-old female patient who came to the consultation because she was suffering dyspepsia with vomiting of solids and liquids foods during the preceding weeks. Severe dehydration and asthenia concomitant. A physical examination showed epigastric pain on deep palpation with tympanic percussion. Laboratory tests showed mild leukocytosis and hypokalemia. An abdominal ultrasound showed a collapsed gallbladder with thickened walls.

Computed Tomography (CT) of the abdomen is the method of choice to confirm the diagnosis, with a sensitivity of 93% and a specificity of 100%. However, in 15-25% of cases, the stones appear isodense and surrounded by fluid, making them difficult to identify.⁵ Magnetic resonance imaging (MRI) is more sensitive and specific. They can recognize the site of impaction, size of the stone, identify the fistula, and provide an appropriate view of the biliary tract.⁵⁻⁸

In this clinical case, MRI showed a dilated intrahepatic bile duct, a common bile duct of 7mm, and a distended stomach. In the second duodenal portion, an image of 34 x 56 mm endoluminal hypointense showed the fistula connecting the gallbladder with the duodenum and wall thickening. (Figure 1)

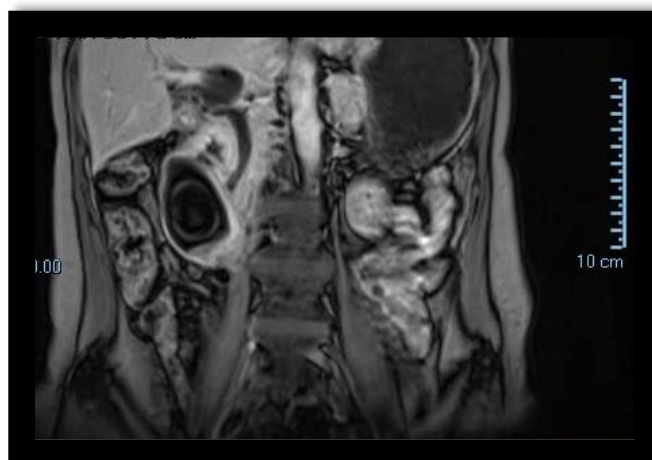


Figure 1: Endoluminal stone in second duodenal portion 34 x 56 mm. (green arrow)

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Bilioenteric fistula appears in 2-3% of cases of cholelithiasis. This communication allows the migration of the stone through the bowel, causing an intestinal obstruction (biliary ileus). Gallbladder and duodenal fistulas are the most frequent, followed by gallbladder and colon and gallbladder and stomach fistulas. Only 6% of stones associated with fistula cause obstruction because of their big size. The most common site of occlusion is the small intestine.⁹

When the stone is accommodated into the duodenum, and it obstructs the gastric emptying is called Bouveret's Syndrome, an entity that represents only 1-3% of cases of gallstone ileus.¹⁰

Complications are dehydration and gastrointestinal bleeding.^{5,9}

In the clinical case presented, endoscopic extraction was attempted, which showed a stone of 5 cm in the second duodenal portion, which was immobile and whose removal was unsuccessful. (Figure 2)

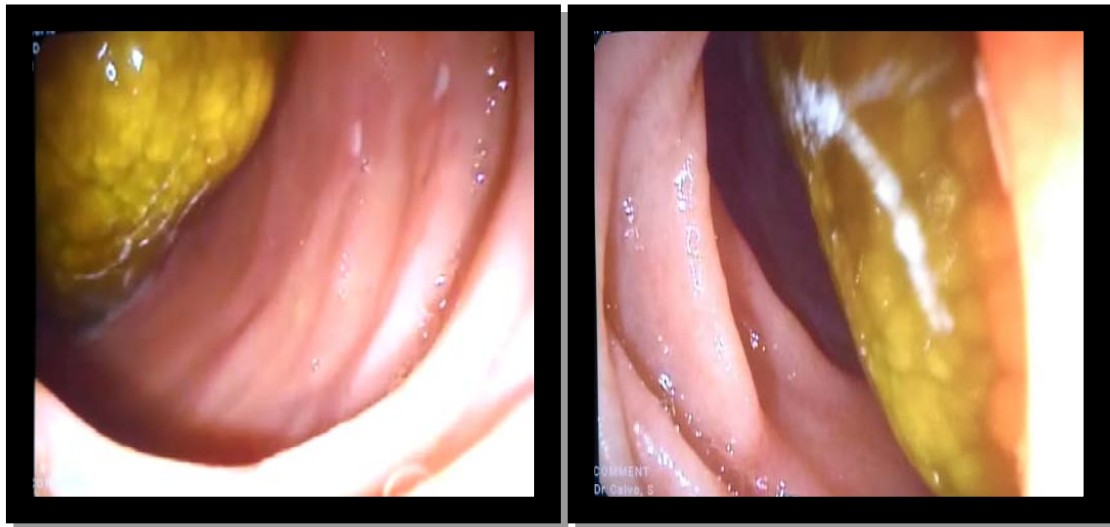


Figure 2: Endoscopic image of stone in second duodenal portion

Surgical treatment included three approaches: a) one-stage approach (by opening the small bowel and to remove the stone/gastrotomy, cholecystectomy and fistula closure), b) two-stage approach (by opening the small bowel and to remove the stone/gastrotomy and subsequent cholecystectomy and fistula closure deferred) and c) by opening the small bowel and to remove the stone/gastrotomy alone.^{2,4,5,11,12}

When the endoscopic resolution failed, we decided laparoscopic minimally invasive approach. Intraoperatively an inflammatory plastron was recognized in the right upper quadrant. Therefore, this made it difficult to visualize the gallbladder and its abnormal communication with the digestive tract. Due to the subacute inflammatory process and prioritizing the patient's safety, we decided to remove the stone by gastrotomy, leaving the treatment of the vesicular pathology and fistula for eventually the second time.

By opening the small bowel and to remove the stone / gastrotomy is less morbid. The recurrence of obstruction by a new stone is 2-5%, which mostly occurs in the first six months.¹²

Individual determinants of mortality, described as the patient's physical condition and the time delay from initial symptoms to surgery, are parameters in decision-making. Our team prioritizes the individualization of surgical treatment with the premise

"LESS IS BETTER." As we showed in this clinical case, the minimally invasive option is feasible and safe, although its use worldwide is around 10%, with conversion rates of 53%.^{4,9,10,14}

In patients with associated pathologies, in which the delay in diagnosis and age over 65 years increases morbimortality, by opening the small bowel and to remove the stone / gastrotomy alone by laparoscopy is the best option. On the other hand, in younger patients, without associated morbidities, with the good physical condition and without a long delay in diagnosis, it could opt for the resolution at a one-stage approach, which shows almost similar mortality.¹⁵

In conclusion, Bouveret's Syndrome is rare, so the diagnosis is of exclusion. The ideal treatment is endoscopic, but if this route fails, surgery is necessary, prioritizing the mini-invasive approach.

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