

Images of Interest / Imagens de Interesse

Cholecystobulbar Fistula Associated with Bouveret Syndrome and Ileal Obstruction

Fístula Colecistobulbar Associada a Síndrome de Bouveret e Obstrução Ileal

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Abstract

Gallstone ileus is a very rare clinical entity, secondary to the fistulization between the gallbladder and gastrointestinal tract, and it is characterized by an impacted stone along the path. Obstruction at the level of the gastric outlet is defined as Bouveret's syndrome and it's an uncommon form of gallstone ileus. A 65-year-old male was admitted to the hospital due to symptoms of intestinal obstruction. Radiological and endoscopic studies revealed two impacted gallstones, one in the gastric lumen and other in the distal ileum. He was submitted to surgery. Clinical findings and therapeutic approach represent a challenge in this pathology.

Keywords

Bouveret's syndrome; Gallstone ileus; Intestinal obstruction; Gallstones.

Resumo

O ileus biliar é uma entidade clínica rara, secundária à fistulização entre a vesícula biliar e o trato gastrointestinal, e é caracterizada pela impactação de um foco de litíase ao longo do trajeto. A obstrução ao nível gástrico/duodenal é definida como síndrome de Bouveret e é uma forma incomum de ileus biliar. Apresentamos um homem de 65 anos que foi internado por sintomas de obstrução intestinal. Estudos imagiológicos e endoscópicos revelaram a presença de dois focos de litíase, um a nível do lúmen gástrico e outro no íleo distal. O doente foi submetido a cirurgia. Os achados clínicos e a abordagem terapêutica representam um desafio desta patologia.

Palavras-chave

Síndrome de Bouveret; Ileus biliar; Obstrução intestinal; Litíase.

Case Presentation

We present a case of a 65-year-old male that presented to the emergency department due to a 3-day history of vomiting and abdominal pain. He also complained of postprandial fullness, anorexia, and weight loss in the past 3 months. He had a history of cholelithiasis and was on the waiting list for cholecystectomy. On examination, he had a distended, tender abdomen in the upper quadrants and right iliac fossa. Laboratory test results showed a mild neutrophilic leukocytosis, anemia, and C-reactive protein of 3.99 mg/dL (normal range <0.5 mg/dL). Abdominal ultrasound performed in the emergency department showed multiple hypodense hepatic nodules, cholelithiasis without signs of cholecystitis and heterogeneous intragastric content. Subsequently, he performed a CT abdominal scan which showed large gallstones impacted in the duodenum, causing gastric outlet obstruction (Bouveret's syndrome). It also suggested the presence of a cholecystoduodenal fistula (Figure 1). No dilation of small bowel loops or any intraluminal content was identified. He was admitted for additional study. For better characterization of the liver lesions, an abdominal MRI was performed, characterizing the liver nodules as hemangiomas. Also, several dilated fluid-filled small bowel loops could now be observed, and a large gallstone was found in the ileum, suggesting migration of one of the previously identified in the duodenum on the initial CT scan. In the stomach, another gallstone could be identified. (Figure 2). Esophagogastroduodenoscopy showed one large black stone of 6-7cm in the distal antrum. The

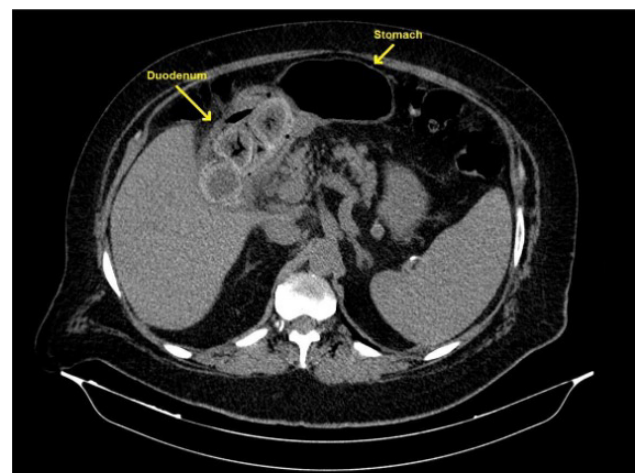


Figure 1 – Unenhanced axial CT slice showing large gallstones impacted in the duodenum, causing gastric outlet obstruction (Bouveret syndrome). The gallbladder was contracted, suggesting that a cholecystoduodenal fistula had been formed, from which the stones passed to the duodenum.

patient underwent an exploratory laparotomy with intra-abdominal examination, and two stones were identified, one at the gastric level and the other at the distal ileum, close to the ileocecal valve. Gastrolithotomy and enterolithotomy were performed with stone removal. The patient recovery was unremarkable.

Gallstone ileus is a rare complication in patients with cholelithiasis. It's commonly associated with small bowel obstruction. In patients with intestinal obstruction, this clinical

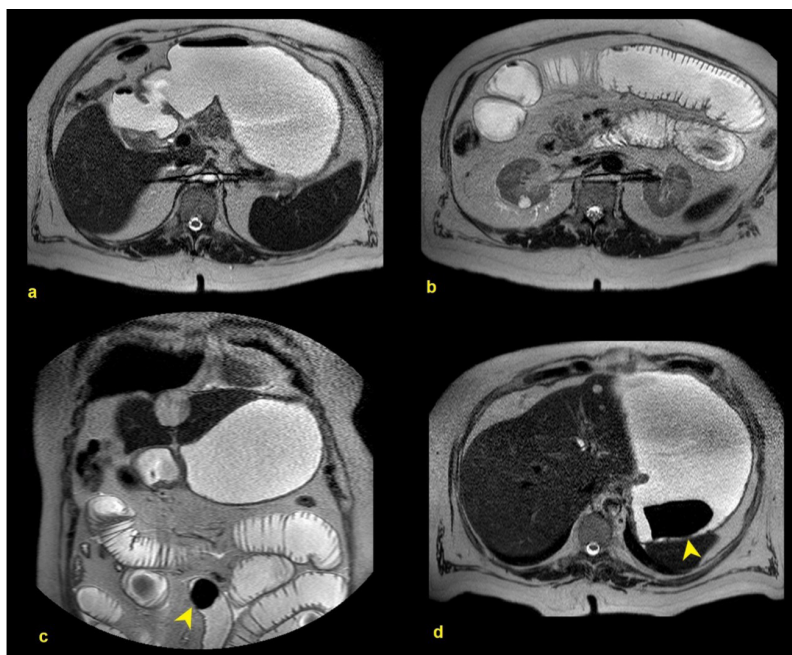


Figure 2 – T2-weighted axial (a, b, d) and coronal (c) images of an MRI performed one week later. No gallstones were identified in the duodenum (a). Instead, several dilated fluid-filled small bowel loops could now be observed (b). Even though the MRI did not include the pelvis, the cause of the obstruction was a large gallstone that was found in the ileum (c, arrowhead). In the stomach, another gallstone could be appreciated (d, arrowhead).

entity is the cause in 1 to 4% of cases. It generally occurs after the development of a fistula between the gallbladder and small bowel, the majority located in duodenum. It's more common in female patients, in the elderly and in patients with multiple comorbidities. The majority of stones are impacted in the distal ileum and ileocecal valve, which account for 60–85% of cases, because of their relatively narrow lumen and less active peristalsis.^{1,2,3} The most frequent clinical presentation is with symptoms of small bowel obstruction. In the clinical setting of bowel perforation, patients present with systemic signs and symptoms. Diagnosis is made with abdominal x-ray, CT-scan, ultrasonography, or MR cholangiopancreatography.⁴

Proximal obstruction of the gastric outlet or duodenum occurs rarely (4%) and is known as Bouveret syndrome, a rare form of gallstone ileus. The stone migrates through a cholecystogastric or cholecystoduodenal fistula. Bouveret syndrome represents ~1%–3% of cases of gallstone ileus. Bouveret's syndrome imagiological workup is similar to distal obstructions.⁵ The cornerstone treatment of gallstone ileus, including Bouveret's syndrome, is surgical removal of the gallstone (enterolithotomy or bowel resection), cholecystectomy and fistulae closure. Mortality rates revealed considerable reductions in the past years, to current rates of less than 7%.⁶

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

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Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Proteção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

References

1. Clavien PA, Richon J, Burgan S, et al. Gallstone ileus. *Br J Surg.* 1990;77:737-42.
2. Halabi WJ, Kang CY, Ketana N, et al. Surgery for gallstone ileus: a nationwide comparison of trends and outcomes. *Ann Surg.* 2014;259:329-35.
3. Reisner RM, Cohen JR. Gallstone ileus: a review of 1001 reported cases. *Am Surg.* 1994;60:441-6.
4. Alemi F, Seiser N, Ayloo S. Gallstone disease: cholecystitis, mirizzi syndrome, bouveret syndrome, gallstone ileus. *Surg Clin North Am.* 2019 Apr;99:231-44.
5. Haddad FG, Mansour W, Deeb L. Bouveret's syndrome: literature review. *Cureus.* 2018;10:e2299.
6. Nuño-Guzmán CM, Marín-Contreras ME, Figueroa-Sánchez M, Corona JL. Gallstone ileus, clinical presentation, diagnostic and treatment approach. *World J Gastrointest Surg.* 2016;8:65-76.