Gallstone Ileus Presenting as Suspected Bouveret Syndrome: A Diagnostic and Therapeutic Challenge

Íleus Biliar em Suspeita de Síndrome de Bouveret: Um Desafio Diagnóstico e Terapêutico

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Abstract:

Biliary ileus is a rare cause of intestinal obstruction, resulting from the migration of a gallstone through a bilioenteric fistula, with subsequent impaction in the gastrointestinal tract. Bouveret syndrome is a rare subtype of biliary ileus that occurs due to the impaction of a gallstone in the pyloric canal or the duodenum. Despite its low incidence, this clinical condition is associated with a significant mortality rate, which can reach up to 15%. Thus, early diagnosis, based on a high index of clinical suspicion and timely treatment are essential.

The authors present a clinical case of probable Bouveret syndrome, highlighting the associated diagnostic and therapeutic challenges, given that no specific treatment has been established. This diagnosis should be considered in cases of proximal intestinal obstruction, despite its rarity.

Keywords: Gallstones/diagnosis; Gallstones/diagnostic imaging; Intestinal Obstruction/etiology.

Resumo:

O íleus biliar é uma causa rara de obstrução intestinal, resultante da migração de um cálculo biliar através de uma fístula bílio-entérica, com subsequente impactação no trato gastrointestinal. A síndrome de Bouveret é um subtipo raro de íleus biliar que ocorre devido a impactação de cálculo biliar no canal pilórico ou no duodeno. Apesar da sua baixa incidência, esta condição clínica está associada a uma taxa de mortalidade significativa, podendo atingir os 15%. Assim, é fundamental um diagnóstico precoce, baseado numa elevada suspeição clínica e um tratamento atempado.

Os autores apresentam um caso clínico de provável síndrome de Bouveret, destacando os desafios diagnósticos e terapêuticos associados, uma vez que não existe um tratamento específico estabelecido. Este diagnóstico deve ser considerado em casos de obstrução intestinal proximal, apesar da sua raridade.

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Palavras-chave: Cálculos Biliares/diagnóstico; Cálculos Biliares/diagnóstico por imagem; Obstrução Intestinal/etiologia.

Learning Points

1. The presentation of Bouveret syndrome is often nonspecific, with fluctuating symptoms due to gallstone migration.
2. The classic radiologic sign of gallstone ileus is Rigler's triad: pneumobilia, bowel obstruction and an ectopic gallstone.
3. Diagnosis and management rely on clinical, radiologic and endoscopic assessments, with early intervention improving outcomes.

Introduction

Gallstone ileus is a rare but potentially severe complication of cholelithiasis, affecting approximately 0.3%-0.5% of patients with gallstones.[1] It results from the migration of a gallstone through a bilioenteric fistula, typically following an episode of acute cholecystitis.[2] Bouveret syndrome is an uncommon subtype of gallstone ileus and is characterized by the impaction of a gallstone in the pyloric canal or duodenum, leading to gastric outlet obstruction.[1,3]

Although rare, Bouveret syndrome carries a high mortality rate, particularly among elderly patients with multiple comorbidities.[3] The clinical presentation is often nonspecific, with symptoms such as nausea, vomiting and abdominal distension, which may mimic other gastrointestinal disorders. Radiological imaging, particularly computed tomography (CT) plays a crucial role in diagnosis, often revealing Rigler's triad -pneumobilia, an ectopic gallstone, and bowel obstruction.[4]

Management strategies include surgical and endoscopic approaches. Less invasive techniques such as endoscopic extraction are preferred in selected cases, but surgical intervention remains the mainstay of treatment when other methods fail.[5,6] Addressing the bilioenteric fistula is often deferred due to high surgical risk.

Case Report

An 89-year-old woman was admitted to the emergency room with a two-day history of anorexia, nausea and vomiting. She denied fever, abdominal pain or gastrointestinal bleeding. Her medical history included asymptomatic gallstones, gallbladder polyps, renal cysts, ischemic heart disease and hypertension.

Physical examination revealed dehydration and a distended abdomen, though bowel sounds were present, with no signs of peritoneal irritation. A nasogastric tube was placed draining bilious content. Laboratory findings were unremarkable. Abdominal radiography (Fig. 1) showed no air-fluid levels while ultrasound revealed a partially collapsed gallbladder with multiple stones (Fig. 2).

Upper gastrointestinal endoscopy was performed, revealing biliary content and antral gastropathy.

Subsequent abdominal CT identified pneumobilia (Fig. 3A), small bowel distension and a large gallstone impacted in the distal ileum, consistent with Rigler's triad. Additionally, a fistula between the gallbladder and the second portion of the duodenum was noted (Fig. 3B). The initial presentation suggested a proximal obstruction, possibly due to Bouveret syndrome, but further imaging confirmed the stone's migration and impaction in the distal ileum (Fig. 3C and D), making the final diagnosis consistent with gallstone ileus.

The patient underwent an enterolithotomy with no major complications and was discharged five days later.

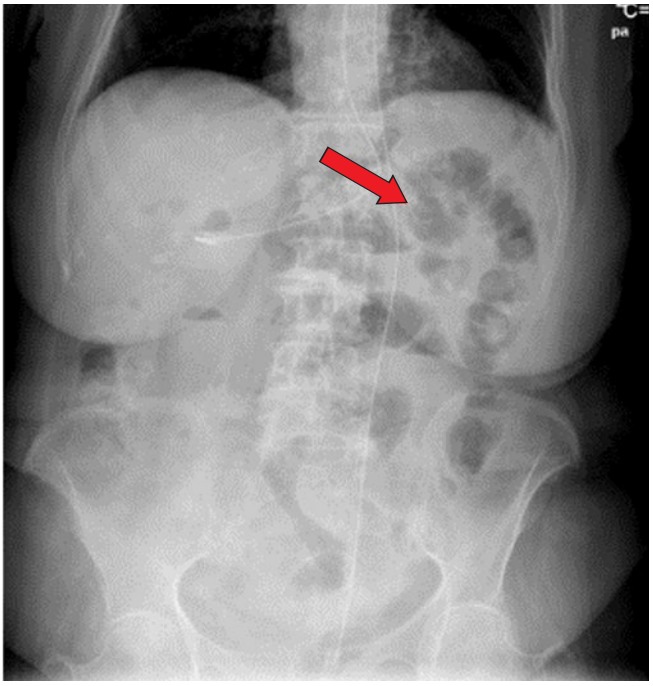

Figure 1: Abdominal x-ray with air-fluid levels.

Discussion

Bouveret syndrome is a rare and severe variant of gallstone ileus. Predominantly affecting elderly women, it presents with vague symptoms, leading to diagnostic delays.[7,8]

In this case, the patient initially exhibited symptoms suggestive of gastric outlet obstruction, but imaging findings confirmed distal migration of the gallstone.

Although upper gastrointestinal endoscopy suggested proximal obstruction, it did not locate the gallstone, reinforcing the superior diagnostic value of CT.[8] The progression from suspected Bouveret syndrome to gallstone ileus highlights the dynamic nature of the condition.

Surgical intervention remains the standard treatment. Isolated enterolithotomy, without cholecystectomy or fistula

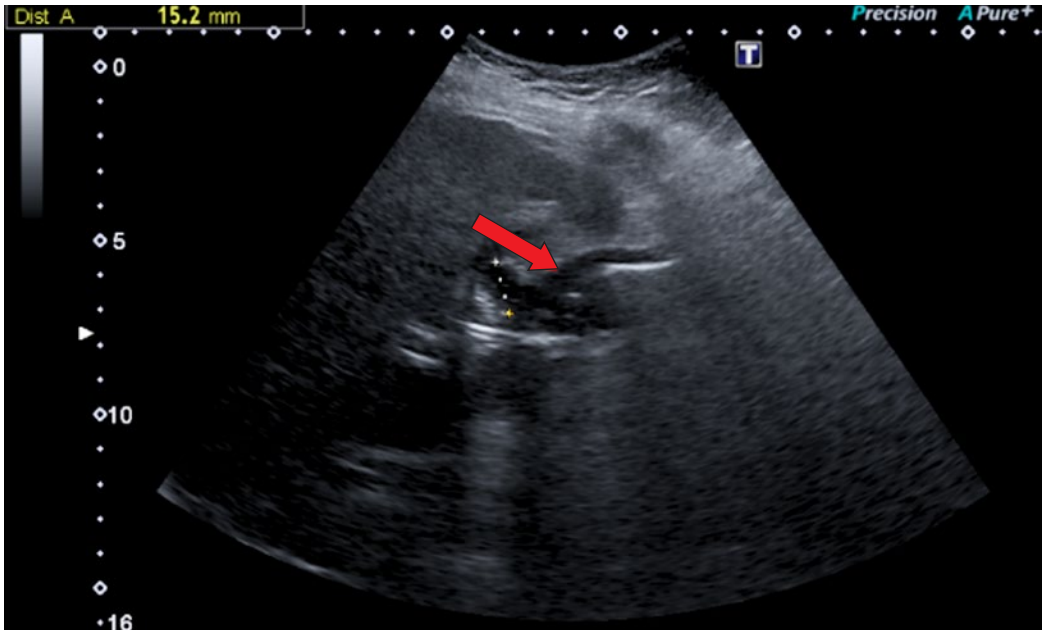

Figure 2: Abdominal ultrasound: collapsed gallbladder with multiple stones.

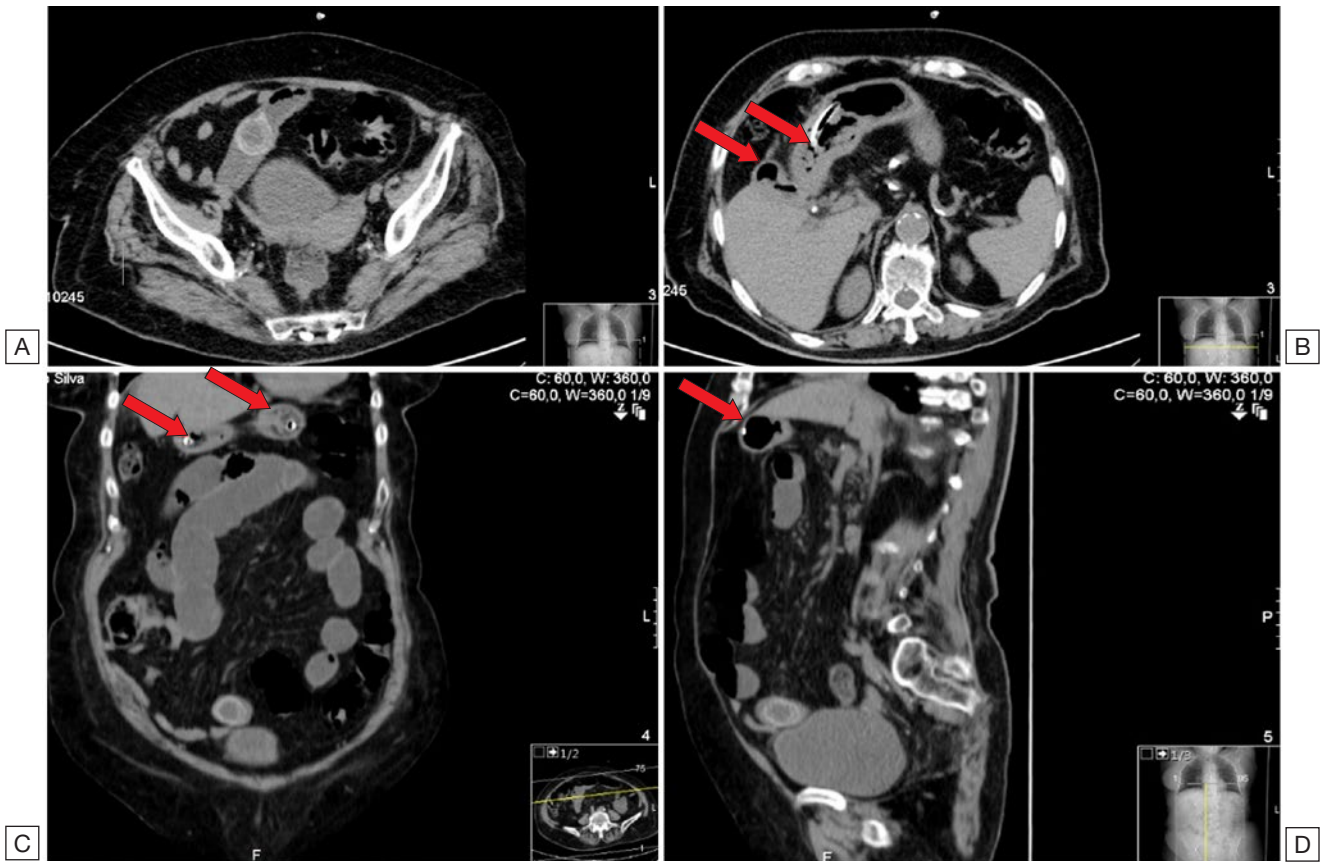

Figure 3: Abdominal and pelvic computed tomography: **A)** pneumobilia; **B)** fistulous communication between the gallbladder and the second portion of the duodenum; **C)** e **D)** impaction of a large stone in the distal ileum.

repair, is a widely accepted approach in elderly patients, reducing surgical morbidity.[8,9] Only a minority require subsequent fistula repair.[8]

Despite its rarity, Bouveret syndrome has a high mortality rate, emphasizing the need for early recognition and appropriate management. This case highlights the importance of clinical suspicion and imaging in diagnosis, as well as the safety of a minimally invasive surgical approach in high-risk patients.[10] ■

Contributorship Statement

AW, MP, CG - Study design, data collection, and manuscript writing.
NC, MS - Supervision and revision of the manuscript.
All authors approved the final version to be published.

Declaração de Contribuição

AW, MP, CG - Desenho do estudo, recolha de dados e elaboração do manuscrito.
NC, MS - Supervisão e revisão do manuscrito.
Todos os autores aprovaram a versão final a ser publicada.

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