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Case Report

Bouveret Syndrome Manifesting as Upper GI Bleeding: A Rare Case Report

Mohamed Kharief[1]*, Mohammed Ali Hasabarsoul[2], Roz O'Byrne[3], Ahamed Ibrahim[4], Muhammad Waseem Abbas[4], Zaeem Sohail Jafar[4], Musaab mohamed abdalla hamed[5] and Mary Alice Chocas[6]

[1]*Gastroenterology Registrar, University Hospital Waterford, Waterford, Ireland*

[2]*Consultant Physician & Gastroenterologist*

[3]*Gastroenterology SPR*

[4]*SHO*

[5]*Orthopaedic and Trauma Surgeon*

[6]*Intern*

***Corresponding Author:** Mohamed Kharief, Gastroenterology Registrar, University Hospital Waterford, Waterford, Ireland.

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Abstract

Bouveret syndrome is an uncommon complication of gallstone disease that can lead to gastric outlet obstruction and, more rarely, gastrointestinal bleeding. We present the case of an elderly male with a known history of cholelithiasis who was admitted with coffee-ground vomiting. Investigations revealed a large gallstone impacted in the duodenum and the presence of a cholecysto-duodenal fistula with associated bleeding. Endoscopic evaluation identified fresh blood at the site of impaction, and subsequent imaging confirmed the diagnosis. The patient underwent surgical removal of the stone with a favourable recovery. This case highlights an unusual bleeding presentation of Bouveret syndrome, underscoring the need for high clinical vigilance and prompt multidisciplinary management in such rare scenarios.

Highlights:

- Bouveret syndrome is a rare complication of gallstone disease, usually presenting with gastric outlet obstruction.
- Upper gastrointestinal bleeding is a rare and atypical manifestation, often leading to delayed diagnosis.
- The Rigler triad (pneumobilia, small bowel obstruction, and ectopic gallstone) is suggestive but not always seen on plain films.
- Computed tomography (CT) and upper endoscopy are key to establishing a timely and accurate diagnosis.
- Endoscopic stone removal may be attempted, but surgical intervention is often required, particularly for large impacted stones.
- Multidisciplinary assessment and individualized treatment planning are essential, especially in elderly or frail patients.

Keywords: Bouveret Syndrome; GI Bleeding; Manifesting

Introduction

Gastrointestinal (GI) bleeding is a common clinical concern with a wide range of potential causes, including esophageal varices, peptic ulcers, and lower GI lesions. However, it is exceedingly rare for gallstone disease to manifest as upper GI bleeding. More frequently, gallstones present with conditions such as acute cholecystitis, choledocholithiasis, cholangitis, or pancreatitis.

A particularly rare complication is gallstone ileus, where a stone passes from the gallbladder into the bowel through a fistula, typically leading to mechanical obstruction in the small intestine. A variant of this condition, known as Bouveret syndrome, occurs when the stone becomes impacted proximally in the pylorus or duodenum. This results from a cholecysto-enteric fistula, most often between the gallbladder and duodenum.

First alluded to in the 18th century and later described by Bouveret in 1896 [1], the condition is very uncommon. Gallstone ileus affects approximately 0.3–0.5% of patients with cholelithiasis, and Bouveret syndrome accounts for only 1-3% of these cases [2]. Diagnosis may be delayed due to non-specific presentations, particularly in elderly patients.

In this report, we present a case of Bouveret syndrome that is uniquely presented as upper GI bleeding without the typical features of gastric outlet obstruction. The case underscores the importance of maintaining clinical suspicion for atypical complications of gallstone disease, especially in older adults, and emphasizes the role of early endoscopic and imaging evaluation in guiding timely intervention.

Case Report

An 89-year-old male presented to the emergency department with three episodes of coffee-ground vomitus. He denied heartburn, melena, abdominal distension, nausea, vomiting, constipation, or weight loss. His medical history included hypertension, atrial fibrillation (on a direct oral anticoagulant), gastroesophageal reflux disease, chronic kidney disease, and cholelithiasis. On physical examination, he was afebrile, normotensive, with irregular heartbeats. His abdomen was soft, non-tender, not distended, with no organomegaly; bowel sounds were present. Chest and heart exams were unremarkable. Blood tests showed a haemoglobin level of 13.8 g/dL, CRP 41.4 mg/L, and white blood cell count of 17.8 $x10^9$/L. Chest X-ray revealed mild cardiomegaly without consolidation or effusion (Figure 1).

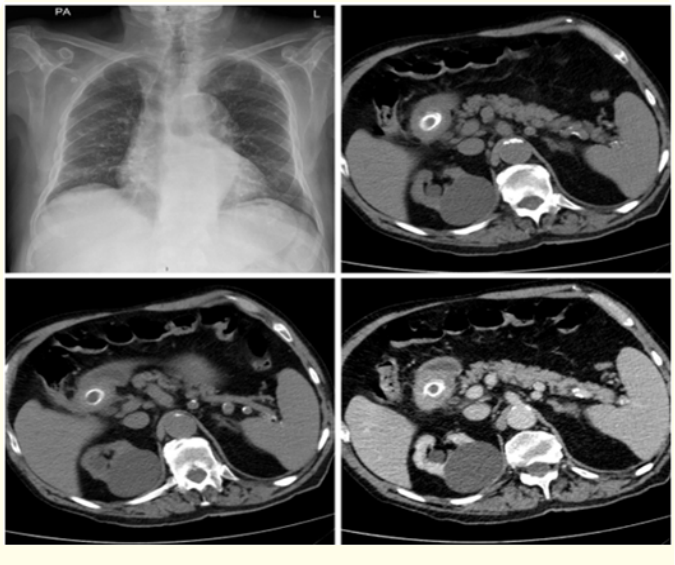

Figure 1: Clear CXR (top right) & multiple CT scan images showing impacted duodenal gallstone.

He was managed with intravenous fluids, temporary cessation of anticoagulation, IV proton pump inhibitor, antiemetics, and antibiotics, and planned for gastroscopy the next morning. Gastroscopy showed a large stone-like mass impacted at the duodenal cap, not amenable to passage or flushing, with streaks of fresh blood around it-no endoscopic intervention was required (Figure 2). The findings were consistent with Bouveret syndrome[1]. CT abdomen/pelvis and CT angiography confirmed a cholecysto-duodenal fistula and a large gallstone in the second part of the duodenum, with free air within the gallbladder. The patient underwent laparotomy with gastrostomy and removal of gallstones from the D1 and D2 segments 5 days after admission. Post-operatively, he developed wound dehiscence and a small subhepatic abscess, requiring a re-look laparotomy on Day 9 for fascial closure and drainage. He made a full recovery and was discharged two weeks later. At 6-week follow-up, he remained well.

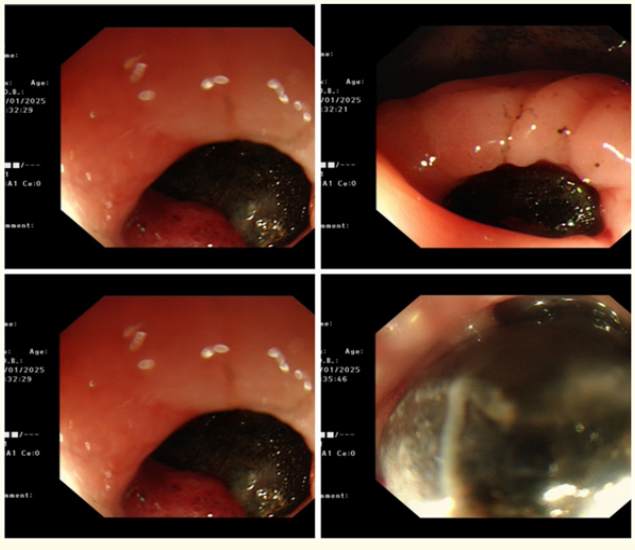

Figure 2: Gastroscopy image demonstrating stone impacted in the duodenum with fresh blood.

Discussion

This case illustrates an unusual presentation of Bouveret syndrome, where upper GI bleeding was the sole clinical manifestation. While Bouveret syndrome typically presents with symptoms of gastric outlet obstruction-such as nausea, vomiting, or epigastric pain-this patient did not exhibit any such features. This highlights the diagnostic challenge in elderly patients, who may have atypical or subtle symptoms.

The underlying pathophysiology of Bouveret syndrome involves increased intraluminal pressure resulting from obstruction, which subsequently causes localized ischemia and necrosis of the intestinal wall. This process facilitates the perforation of the gallstone through the gastrointestinal tract walls and its migration into the intestines. Generally, gallstones smaller than 2.5 cm tend to pass through the small bowel spontaneously, whereas larger stones are more likely to become lodged at the gastric outlet or proximal duodenum [6].

The diagnosis of Bouveret syndrome is strongly suggested by the Rigler triad-comprising small bowel obstruction, pneumobilia, and an ectopic gallstone-which is considered nearly pathognomonic. However, this triad is visible in only about 30–35% of cases on standard radiographs, and is more reliably detected using computed tomography (CT) imaging [6]. The development of a cholecysto-duodenal fistula likely permitted the passage of a large gallstone into the duodenum, resulting in local mucosal erosion and bleeding. Although gastrointestinal haemorrhage is not a classic feature of Bouveret syndrome, a few published cases have reported similar bleeding due to ulceration or fistula formation [3,4]. CT imaging and endoscopy remain the cornerstones of diagnosis, with CT providing high sensitivity for detecting pneumobilia, ectopic gallstones, and fistulae [2]. In our case, early gastroscopy allowed direct visualisation of the impacted stone and associated bleeding, supporting the diagnosis. Therapeutic approaches depend on patient fitness, stone location and size, and local expertise. While endoscopic retrieval or lithotripsy can be attempted in selected cases [2,5], surgical intervention remains the most definitive approach-particularly when endoscopic clearance is not feasible. However, surgery in elderly, frail patients is associated with increased morbidity. Our patient underwent surgery but developed postoperative complications, reinforcing the importance of individualized treatment planning.

Conclusion

Bouveret syndrome is a rare but serious complication of gallstone disease that poses diagnostic and therapeutic challenges. Endoscopic and radiological evaluations are key to diagnosis. Given the absence of strict guidelines; surgery is often curative while non-surgical options should be considered, especially in high-risk patients.

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