Acute gastric outlet obstruction due to an impacted gallstone: the Bouveret's syndrome

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DESCRIPTION

A 59-year-old woman presented to the emergency department with a 3-day history of severe abdominal pain and recurrent vomiting.

On admission, the patient reported that the pain was accompanied by severe abdominal cramps and that projectile vomiting always occurred immediately after food intake. She denied fever, diarrhoea or the use of prescription medication. Her medical history was remarkable for cholelithiasis, appendectomy and hysterectomy.

Abdominal examination revealed mild epigastric tenderness, but no Murphy's sign. Laboratory tests showed an increased C reactive protein level of 120 mg/dL (reference range <5.0 mg/dL), but the remaining laboratory values were within the normal range.

After focused abdominal ultrasonography revealed signs of cholecystitis and a suspicious duodenal mass, oesophagogastroduodenoscopy demonstrated gastric outlet obstruction secondary to an impacted gallstone (figure 1A,B).

Based on these findings, Bouveret's syndrome was diagnosed. As endoscopic removal was unsuccessful, the patient underwent enterotomy for stone removal (figure 2). In a second operation 4 weeks later, cholecystectomy and surgical closure of a cholecystoduodenal fistula, which had developed due to chronic inflammation of the gallbladder, were performed. The postoperative course was uneventful, and the patient recovered completely.

Bouveret's syndrome is a very rare complication of cholelithiasis, characterised by gastric outlet obstruction caused by an impacted gallstone in the pylorus or proximal duodenum after its passage through a bilioenteric fistula.¹ It was first described by French surgeon M. Beaussier in 1770 and subsequently named after L. Bouveret, the French physician who published two comprehensive case reports of this rare disease in 1896.²

Gallstones may migrate via bilioenteric fistula into various parts of the digestive tract, including the ileocecal region (50%–90%), jejunum and ileum

Figure 2 Intraoperative view after enterotomy indicating the impacted gallstone in the duodenum (A). Completely removed gallstone after surgery, measuring 3 cm (B).

(20%–40%) and less commonly, the stomach or duodenum (<5 %) in which cases it is called Bouveret's syndrome.³ Typical clinical signs on physical examination are abdominal tenderness, abdominal distention, as well as signs of dehydration due to recurrent vomiting.^{1,4} Risk factors for Bouveret's syndrome include a history of cholelithiasis, gallstone diameter >2.5 cm, female gender and age >60 years.^{3,5}

Possible complications of Bouveret's syndrome encompass gastrointestinal bleeding, bowel perforation and migration of gallstones into more distal bowel segments, where they can no longer be reached endoscopically and may cause an ileus.^{6–8} Intestinal obstruction due to impacted gallstones may occur in up to 15% of cases, particularly in the presence of adhesions or strictures due to previous abdominal surgery.⁹

Treatment approaches to Bouveret's syndrome include mechanical or transendoscopic electrohydraulic lithotripsy with subsequent endoscopic retrieval or surgical removal of the obstructive gallstone, with or without concomitant cholecystectomy and fistula repair.^{1,4,5}

Although Bouveret's syndrome is a very uncommon condition, it should be considered in all patients who present with a history of gallstones and symptoms of acute gastric outlet obstruction.

Learning points

- ▶ Bouveret's syndrome represents a rare but serious complication of cholelithiasis and is characterised by gastric outlet obstruction secondary to an impacted gallstone in the duodenum or stomach.
- ▶ Bouveret's syndrome typically presents with abdominal pain, nausea and vomiting, and occurs most commonly in elderly women.
- ▶ Treatment of Bouveret's syndrome includes endoscopic retrieval or surgical removal of the obstructive gallstone with or without cholecystectomy and fistula repair.

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Figure 1 Oesophagogastroduodenoscopy showing a large gallstone in the duodenal bulb causing gastric outlet obstruction (A). The impacted gallstone revealed a pigmented and irregularly shaped structure leading to a subtotal obstruction of the duodenal lumen (B).

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