Bouveret's syndrome: an unusual case of pyloroduodenal obstruction

NJ Menon, PJ Reid, BF Ribeiro

INTRODUCTION

Intestinal obstruction from gall-stones is relatively infrequent. Even less frequent is the incidence of gastric outlet obstruction from gall-stones. Bouveret in 1896 described the syndrome of gastric outlet obstruction caused by gall-stone incarceration. This article reports a case of Bouveret's syndrome treated surgically by a single stage procedure.

DISCUSSION

Mechanical obstruction of the gastrointestinal tract by gall-stone incarceration is a rare occurrence. Courvioisier in 1854 reported the first case of cholecystoduodenal fistula with 'gall-stone ileus'. Even more infrequent is the syndrome of gastric outlet obstruction from gall-stones. The clinical entity was first described by Beaussier in 1770 and Bonnet in 1841 recorded two cases as autopsy finding. Leon Bouveret in 1896 made the first preoperative diagnosis and reported the syndrome of pyloroduodenal obstruction from gall-stones. Since his original description, around 240 cases of Bouveret's syndrome have been reported in the literature (Frattaroli et al, 1997).

Gall-stone intestinal obstruction is a rare complication of cholelithiasis. The primary pathology in Bouveret's syndrome is related to the presence of a cholecystoenteric fistula. Recurrent episodes of inflammation associated with reduced arterial blood supply to the wall of the gall bladder and increased intraluminal pressure may induce large stones to erode into the intestine. The fistula involves the duodenum in over three quarters of cases. The colon is involved in nearly 25% of cases and the stomach in less than 5% (Simonian, 1968). Once in the intestine, the gall-stone may be vomited, it may pass uneventfully through the rectum or may get impacted and cause intestinal obstruction. This may be acute or present with multiple episodes of 'tumbling' obstruction.

Gall-stone ileus as a complication of cholelithiasis occurs in 0.3–5% of cases. The most common site of impaction is the terminal ileum in 60%

Figure 1. Plain abdominal X-ray showing pneumobilia and loss of small bowel gas pattern.

CASE REPORT

A 64-year-old gentleman presented with a 5-day history of vomiting which he related to eating a reheated Chinese meal. He denied any abdominal pain, distension or constipation. He gave no significant past medical history but hospital records revealed previous asymptomatic gall-stones for which he was offered and declined laparoscopic cholecystectomy. Before his admission, he had no history of fat intolerance, biliary colic or jaundice.

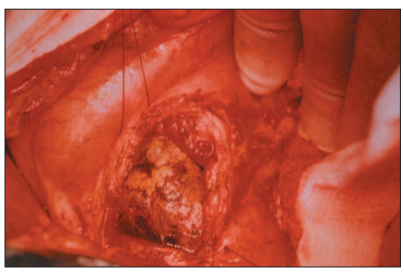
On examination, the patient was afebrile, dehydrated and anicteric. Abdominal examination showed no distension or tenderness. His hernial orifices were free and bowel sounds were normal.

Investigations including liver function tests and serum amylase were within normal limits. The plain film of the abdomen showed pneumobilia with no suggestion of ectopic gall-stone or small bowel obstruction (*Figure 1*). Upper gastrointestinal endoscopy showed evidence of gastric outlet obstruction with a large gall-stone in the proximal duodenum which could not be grasped. He therefore underwent laparotomy and the stone was removed through a duodenotomy.

A single stone measuring 5x3.5x2 cm was retrieved (*Figure 2*). The gall bladder was densely adherent to the first part of the duodenum and the duodenotomy was made at the site of this cholecystoduodenal fistula (*Figure 3*). There were no other stones in the gall bladder. Cholecystectomy was performed and the duodenal opening was closed as a pyloroplasty. He made a smooth postoperative recovery and has been doing well since discharge.

Figure 2. Gall-stone retrieved from duodenum.

Figure 3. Duodenotomy through the site of cholecystoduodenal fistula showing the stone in the first part of duodenum.



Mr NJ Menon is Associate Specialist, **Dr PJ Reid** is Senior House Officer and **Mr BF Ribeiro** is Consultant Surgeon in the Department of General Surgery, Basildon Hospital, Nethermayne, Essex SS16 5NL

Correspondence to: Mr NJ Menon

or proximal ileum in 24%. More rarely involved are the distal jejunum (9%), colon (4%) and rectum (2%). In only 1–3% of cases of gall-stone ileus is the duodenum implicated (Langhorst et al, 2000). Typically the patient is a female with non-specific symptoms. Nausea and vomiting, fever, right upper quadrant pain and weight loss may be present. Cases of gall-stone emesis (Shalowitz, 1989), gastrointestinal bleeding (Andersson et al, 2000) and obstructive jaundice from extrinsic compression of the common bile duct have been described.

The diagnosis is made from plain abdominal X-ray which may show Rigler's triad of pneumobilia, dilated loops of small bowel and ectopic position of the gall-stone (Tuney and Cimsit, 2000; Worsey and Fazio, 2001). Balthazar and Chechter in 1978 described a radiological sign of double air-fluid levels in the right upper quadrant as a frequent finding in gall-stone ileus. This corresponds to air in the gall bladder and air in the adjacent duodenum. An upper gastrointestinal series may show the site of biliary-enteric fistula. Ultrasound examination or computed tomography can be used to confirm the diagnosis. The diagnosis is made at endoscopy in about 60% of the cases (Frattaroli et al, 1997).

Treatment of gall-stone ileus has historically been by surgery. Endoscopic retrieval, mechanical and electrohydraulic lithotripsy, and fragmentation using laser are other treatment options (Langhorst et al, 2000). Owing to associated comorbidity in the ageing population normally presenting with this condition, morbidity close to 65% and mortality of 20–30% has been reported (Printen and Safie-Shirazi, 1973). More recent reports suggest mortality rates of 19–24% with surgery (Rodriguez-Sanjuan et al, 1997).

Removal of the offending stone through a duodenotomy without cholecystectomy could be done in a sick patient since the cholecystoduodenal fistula will heal spontaneously with time. At laparotomy, it is essential to examine the whole of the gastrointestinal tract to rule out any other synchronous gall-stones (Romano et al, 1997). A single stage procedure with cholecystectomy could be attempted in a stable patient since this reduces subsequent biliary complications like cholangitis or recurrent cholecystitis (Ezberci et al, 2000).

CONCLUSION

Bouveret's syndrome of gastric outlet obstruction from gall-stones is uncommon. This paper reports a case of Bouveret's syndrome which was successfully treated by a one-stage surgical procedure. HM

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