

## Obstruction of the duodenum due to a biliary calculus (Bouveret's syndrome)

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*Duodenal obstruction by a gallstone is a very uncommon clinical condition. The gallstone obstruction of duodenum is usually discovered by gastrointestinal endoscopy or x-ray examination of the upper gastrointestinal tract. Here, we report the case of a 76-year-old woman with a gastric outlet obstruction due to gallstone. The obstruction was initially diagnosed by the ultrasound of the upper abdomen and was later confirmed by gastroscopy. The attempt of endoscopic extraction of gallstone from the duodenum was unsuccessful and was consequently removed by surgical procedure.*

*Key words: cholelithiasis-complications; duodenal obstruction*

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### Introduction

The intestinal obstruction secondary to a gallstone is an unusual complication of cholelithiasis and accounts for 1% of all cases of intestinal obstruction, however the incidence of this condition rises up to 25% in those over age 70.<sup>1</sup> The stone usually lodges at the terminal ileum, the narrowest portion of normal gut, but stones can be impacted in pylorus, duodenum, jejunum or colon. The duodenal obstruction by a gallstone is a very rare condition.<sup>2,3</sup> In recent years, diagnosis has been facilitated by endoscopy and several cases have been reported.<sup>4-8</sup> Here, we report a case of duodenal obstruction in which the

diagnosis of gallstone obstruction was made endoscopically and relieved by surgical procedure.

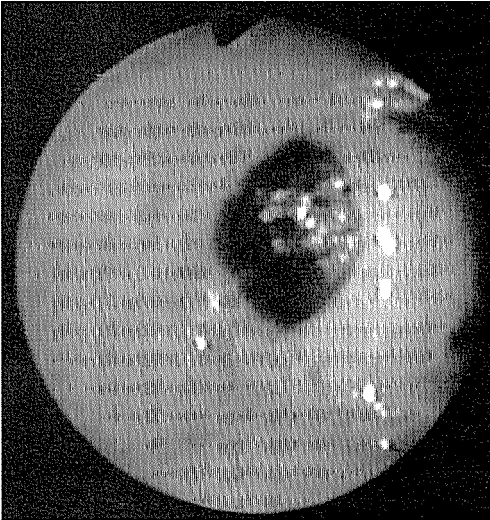
### Case report

A 76 year-old woman was admitted to hospital because of nausea and vomiting. The nausea and vomiting were lasting for the last three weeks. Since then, she lost appetite and 4 kg of body weight. During last seven days vomiting was persistent. The patient stopped eating and she just drank milk and yoghurt.

The patient had been well until about six months earlier when she had pain in the upper abdomen. At that time, the pain was treated symptomatically with H<sub>2</sub>-receptor antagonist, antacids and diet. The peptic ulcer disease as the cause of this pain was

not confirmed by endoscopic examination at that time. However, with this treatment she felt better until the admission to our hospital. She had no previous history of cholelithiasis attacks.

At the admission, physical examination disclosed dehydration, tenderness and epigastric distension. Laboratory tests were performed. The laboratory analysis revealed normal liver function and prerenal azotemia with hypokalemia, hypochloremia and alkalosis. Ultrasound examination of the upper abdomen was performed. It showed a high density mass of 5 cm in diameter at the projection of bulbus duodeni. The endoscopic examination revealed one large, round, hard, black-green mass projecting through pylorus (Figure 1). Moreover, by endoscopic examina-



**Figure 1.** Gallstone projecting through pylorus at the endoscopy.

tion we observed an ulcer of the anterior wall of the duodenal bulb with bulb deformation, dilatation of stomach and reflux esophagitis "Savari Miller gr III". This mass was interpreted as a gallstone obstructing duodenum and the x-ray examination of the upper abdomen was considered unnecessary.

We were not able to remove the gallstone by endoscopic mechanical lithotripsy. After correction of dehydration, metabolic alkalosis and hypokalemia, a successful removal was performed by surgical procedure. The surgical procedure was performed by enterotomy proximal to the stone, and removing offending calculi with closure of the intestine. The patient's condition allowed us to perform concomitant cholecystectomy with fistula closure. The opening of cholecystoenteric fistula was on the anterior wall of the duodenal bulb. The patient's post-operative condition was good.

## Discussion

Bouveret described duodenal obstruction due to biliary stone in 1896. Bouveret's syndrome is characterised by signs of ileus like abdominal pain, vomiting and dehydration. Patients usually had a prior history of symptomatic biliary tract disease. However, the patient has not mentioned abdominal pain, biliary colic as well as fever. Fifty-eight cases of this rare clinical entity were described by Simonian in 1968<sup>2</sup> and since then others<sup>4-8</sup> have reported several new cases. It is important to note that most reported new cases were diagnosed by endoscopic examination of stomach and duodenum. Bouveret's syndrome may occur in 1% to 3% of patients with cholecystoenteric fistula.<sup>9</sup> The occurrence of cholecystoenteric fistulas has been reported in 0.09% to 3.2% of patients with biliary disease.<sup>9</sup> Gallstone ileus is a complication in 0.3% to 0.5% of all cases of cholelithiasis.<sup>3</sup> It is important to have in mind that ileus could be caused by a gallstone. Moreover, the incidence of gallstone ileus rises significantly in patients over 65 years of age.<sup>1,3</sup> Here, we showed that the ultrasound examination of the upper abdomen could give the first indication of a gallstone. This is to our knowledge the first report that this easy and fast diagnostic

approach can be used. The usual initial diagnostic step is the x-ray examination of the abdomen, which must comprise, in differential diagnosis, other causes of intestinal obstruction like duodenal neoplasm, duodenal polyp and finally foreign body.<sup>2</sup> However, here the final diagnosis of Bouveret's syndrome was established by the endoscopic examination of the stomach, as it was described by others.<sup>4-8</sup> It is possible that the stone may be endoscopically removed or, at least, manipulated in stomach so that after relieving the obstruction, the patients will go for definitive surgical treatment with fistula closing and cholecystectomy, especially in patients in good health condition where is likely that gallstone ileus occur again.<sup>5,6</sup> Surgical procedure can be considered as only definitive treatment for Bouveret's syndrome.

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