





# Rare cause of duodenal obstruction: Bouveret syndrome

Eyüp Murat Yılmaz<sup>1</sup> , Erdem Barış Cartı<sup>1</sup> , Altay Kandemir<sup>2</sup> 

## ABSTRACT

Gallstone ileus is a relatively rare pathology, most commonly obstructing the terminal ileum. Bouveret syndrome is a syndrome found particularly in elderly patients, which develops as the result of a cholecystoenteric fistula. It leads to the gastric outlet obstruction and has an incidence of less than 1%. In this report, we presented a 95-year-old patient diagnosed with Bouveret syndrome.

**Keywords:** Bouveret syndrome, gallstone ileus, Obstruction

## INTRODUCTION

Bouveret syndrome was first defined by Leon Bouveret, and it is described as the gastric outlet obstruction occurring as the result of a cholecystoduodenal or a cholecystogastric fistula (1). Nonspecific symptoms such as nausea, vomiting, and abdominal pain are observed due to developing a proximal obstruction in this syndrome, which is usually seen with less than 1% incidence (2, 3). Although ultrasonography is the first used imaging method for diagnosis, computerized tomography and magnetic resonance cholangiopancreatography can provide more precise information (4). Endoscopic, laparoscopic, and open surgical methods can be used for its treatment. In this report, we presented a 95-year-old patient who was admitted to the emergency service with the complaint of nausea and vomiting and who was diagnosed with Bouveret syndrome.

## CASE PRESENTATION

A 95-year-old female patient was admitted to the emergency service with the complaints of abdominal pain, nausea, and bilious vomiting that lasted for approximately 2 days. A physical examination revealed tenderness at her right subcostal region, with the absence of defense and rebound findings. The Murphy's sign was not present. Her bowel sounds were normal. The gas and stool discharge were absent for the past 2 days. A rectal examination showed that the stool was present with no palpable mass. Other systemic examination findings were reported as normal. Regarding her laboratory results, the liver function tests, renal function tests, and bilirubin values were interpreted as normal. The leucocyte count was measured as 8500/mm<sup>3</sup>, and the complete blood count findings were normal. No pathology was detected in the chest x-ray. Erect abdominal x-ray was obtained in the patient, and a minimum amount of the air-fluid levels was observed in the small bowel at the epigastric region. The abdominal tomography revealed a gallbladder stone leading to a near-complete obstruction in the second portion of the duodenum. The patient was admitted to the ward, a nasogastric tube was inserted, and the oral intake was discontinued. The patient was hydrated, and bilious drainage of approximately 500–750 cc/day was observed through the nasogastric tube. It was decided to remove the stone through an endoscopic intervention. The patient was consulted with the Gastroenterology Department, and an endoscopic retrograde cholangiopancreatography was performed. The stone was attempted to be extracted by using the basket method, but it was observed that the size of the stone was too big. The stone was partially fragmented, and the procedure was terminated. A larger basket was brought in; however, it was observed that the stone was not in the duodenum and had moved further into the duodenum. Because ileus continued, laparotomy was decided to be performed. The patient and her relatives were informed about the disease and its complications, and written informed consent was obtained. The patient was taken to the operating room. Epidural anesthesia was preferred due to the advanced age of the patient. The gallstone causing complete obstruction at the location 10 cm distally to the Treitz ligament was observed (Figure 1). The attempt to move the stone to another site by squeezing the intestine was unsuccessful. Enterotomy was performed at the site of the obstruction, and the stone was extracted (Figure 2). Then, the enterotomy site was repaired primarily by Gambee-type sutures, and the procedure was completed. The patient was followed postoperatively at the surgical ward. Liquid diet was started on the 4th postoperative day and was tolerated well. Then, following the gas–stool discharge, the patient's oral food intake was increased, and she was discharged to follow-up on the 6th postoperative day.

## ORCID IDs of the authors:

E.M.M. 0000-0002-0808-5067;  
E.B.C. 0000-0002-7139-0339;  
A.K. 0000-0002-2918-3811.

## Cite this paper as:

Yılmaz EM, Cartı EB, Kandemir A. Rare cause of duodenal obstruction: Bouveret syndrome. Turk J Surg 2018; 10.5152/turkjsurg.2017.3794.

<sup>1</sup>Department of General Surgery, Adnan Menderes University School of Medicine, Aydın, Turkey

<sup>2</sup>Department of Gastroenterology, Adnan Menderes University School of Medicine, Aydın, Turkey

## Corresponding Author

**Eyüp Murat Yılmaz**  
e-mail: drmyilmaz80@gmail.com

Received: 12.12.2016  
Accepted: 05.06.2017  
Available Online Date: 28.08.2018

©Copyright 2018  
by Turkish Surgical Association  
Available online at  
www.turkjsurg.com



Figure 1. Gallstone that cause complete obstruction



Figure 2. Stone removal with enterotomy

## DISCUSSION

The incidence of ileus related to gallbladder stones is quite low (0.3%–0.4%), and approximately 90% of these stones obstruct the terminal ileum (3, 5). While a smaller portion of these stones obstruct the jejunum, duodenal and gastric outlet obstructions are seen with an incidence of less than 1% (1). The most typical reason of such a duodenal obstruction is Bouveret syndrome, which is a cholecystoenteric fistula.

Typically, abdominal pain, nausea, and vomiting may be observed in Bouveret syndrome. Most of the cases are in the advanced age and manifest typical gallstone symptoms (6). Our patient was 95 years old and manifested all of the typical symptoms. While these symptoms are usually confused with those of pyloric stenosis or other gastric outlet obstructions, the diagnosis can be more easily made by modern imaging

methods today. In our case also, making the diagnosis was possible with computerized tomography. An initial attempt by endoscopic extraction of the stone was unsuccessful. The number of the cases in who the endoscopic extraction of gallstone is successful is limited (7).

While the surgical treatment is quite effective in Bouveret syndrome, the surgical method of choice is controversial. The main purpose should be to eliminate the symptoms with a minimal number of complications. Some authors prefer to remove the stone and close the enterotomy opening. Others claim that the probability of recurrent ileus due to fistula is present with such a method (6); therefore, they claim that cholecystectomy and fistula repair should be performed within the same session. The risk of biliary tract injury is quite high with such a preference (8). Reisner et al. (9) in their study reported that the mortality rate reached 16.9% in the single-stage cholecystectomy + enterotomy and fistula repair operations. In our case, we preferred to defer the cholecystectomy and fistula repair operation to the second stage due to an advanced age and extremely high amount of adhesions around the gallbladder and the biliary tract. It was reported in the literature that recurrence may develop at a rate of 4%–8% in cases in whom only the enterotomy was performed (10). Fifty percent of these recurrences develop within the following 2 years (11). We consider that meticulous planning should be done regarding mortality and morbidity in such cases. Since the age of our case was rather advanced, we preferred to discharge the patient to follow-up after providing information about the recurrence.

## CONCLUSION

As a conclusion, gallstone ileus is a rare disorder, most commonly obstructing the terminal ileum, whereas Bouveret syndrome is a much rarer cause of a proximal mechanical gastrointestinal obstruction. It should be kept in mind as a preliminary diagnosis in elderly patients admitted with typical complaints of abdominal pain, nausea, and vomiting. Various surgical methods are present, and the most appropriate method that causes the lowest morbidity should be preferred.

**Informed Consent:** Written informed consent was obtained from patient who participated in this study.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept - E.M.Y., A.K.; Design - E.M.Y., E.B.C.; Supervision - E.B.C., E.M.Y.; Resource - E.M.Y., A.K.; Materials - E.B.C.; Data Collection and/or Processing - A.K.; Analysis and/or Interpretation - A.K.; Literature Search - E.M.Y., E.B.C.; Writing Manuscript - E.M.Y.; Critical Reviews - E.M.Y.

**Conflict of Interest:** The authors have no conflicts of interest to declare.

**Financial Disclosure:** The authors declared that this study has received no financial support.

## REFERENCES

1. Bouveret L. Stenosedupuylore adherent a la vesicule [French]. *Revue Medicale (Paris)* 1896; 16: 1000-1011.
2. Algin O, Özmen E, Metim MR, Ersoy PE, Karaoğlanoğlu M. Bouveret syndrome: evaluation with multidetector computed tomography and contrast-enhanced magnetic resonance cholangiopancreatography. *Ulus Travma Acil Cerrahi Derg* 2013; 19: 375-379. [CrossRef]

3. Sağlam F, Sivriköz E, Alemdar A, Kamalı S, Arslan U, Güven H. Bouveret syndrome: A fatal diagnostic dilemma of gastric outlet obstruction. *Ulus Travma Acil Cerrahi Derg* 2015; 21: 157-159.
4. Gan S, Roy-Choudhury S, Agrawal S, Kumar H, Pallan A, Super P, et al. More than meets the eye: subtle but important CT findings in Bouveret's syndrome. *AJR Am J Roentgenol* 2008; 191: 182-185. [\[CrossRef\]](#)
5. Mavroeidis VK, Matthioudakis DI, Economou NK, Karanikas ID. Bouveret syndrome-the rarest variant of gallstone ileus: a case report and literature review. *Case Rep Surg* 2013; 2013: 839370. [\[CrossRef\]](#)
6. Matur R, Yücel T, Gürdal SÖ, Akpınar A. Bouveret'S syndrome: gastric outlet obstruction by a gallstone. *Ulus Travma Derg* 2002; 8: 179-182.
7. Schweiger F, Shinder R. Duodenalobctruction by a gallstone (Bouveret's Syndrome) managed by endoscopic stone extraction: A case report and review. *Can J Gastroenterol* 1997; 11: 493-496. [\[CrossRef\]](#)
8. Assisi A, Papotti R, Negri P, Bordoli M, Nardone A, Nespoli A. Acutecholeciysistitis and gallbladder neoplasm: the experience of 2215 case. *G chir* 1998; 19: 391-394.
9. Reisner RM, Cohen JR. Gallstone ileus: A review of 1001 reported cases. *Am Surg* 1994; 60: 441-446.
10. Hayes N, Saha S. Recurrent gallstone ileus. *Clin Med Res* 2012; 10: 236-239. [\[CrossRef\]](#)
11. Takata H, Yoshida H, Hirakata A, Watanabe M, Uchida E, Uchida E. Recurrent Gallstone Ileus Successfully Treated with Conservative Therapy. *J Nippon Med Sch* 2015; 82: 300-303. [\[CrossRef\]](#)