



BOUVERET'S SYNDROME: A CHALLENGING CASE OF GASTRIC OUTLET OBSTRUCTION.

Marrium Gul¹, Irfan Qadir², Muhammad Qasim Butt³

1. MBBS
House Officer Surgery
CMH Multan.
2. MBBS
Resident General Surgery
Combined Military Hospital Multan.
3. FCPS (General Surgery)
Assistant Professor General Surgery
Classified Surgical Specialist
General Surgery
Combined Military Hospital, Multan.

Correspondence Address:

Dr. Irfan Qadir
House No. 3821-8D, Tippu Sultan
Colony,
Near Old Sabzi Mandi, Multan.
irfanqadir88@gmail.com

Article received on:

03/07/2019

Accepted for publication:

14/10/2019

ABSTRACT... Bouveret's syndrome causes gastric outlet obstruction when a gallstone is impacted in the duodenum or stomach via a bilioenteric fistula. We present case of a 40-year-old female presented with epigastric pain and intractable vomiting for 2 days. Her physical examination and laboratory workup including blood analysis, amylase test and lipase test were normal. Plain abdominal X-ray did not show any signs of small bowel obstruction. A nasogastric tube was placed and drained 2.5 L of gastric contents immediately. Esophagogastroduodenoscopy showed a dilated stomach with excessive secretions and a large blackish-brown hard stone in the duodenal bulb. After failed attempt at endoscopic extraction, patient underwent laparotomy and removal of stone via duodenal incision. Subsequently, the patient exhibited a good postoperative recovery. The condition of the patient has remained stable after being followed up for one year.

Key words: Bouveret's Syndrome, Cholelithiasis, Gastric Outlet Obstruction, Gall Bladder, Pakistan.

Article Citation: Gul M, Qadir I, Butt MQ. Bouveret's syndrome: A challenging case of gastric outlet obstruction. Professional Med J 2020; 27(6):1316-1319.
DOI: 10.29309/TPMJ/2020.27.06.3894

INTRODUCTION

Bouveret syndrome is a rare form of gallstone induced ileus accounting for only 1-3% of cases.^{1,2} It is caused by the passage of a large gallstone through a cholecysto-duodenal fistula and impaction into the duodenum, resulting in gastric outlet obstruction with epigastric pain and postprandial vomiting.³ Until 2008, up to 300 cases had been reported in the world literature.⁴ Despite advancements in diagnostics and intensive care facilities morbidity and mortality rates still remain high, estimated at 60% and 12%– 30% respectively. Advanced age and associated comorbidities are major adverse prognostic factors.^{4,5} We present a case of Bouveret syndrome in a young otherwise healthy female with successful surgical management following endoscopic treatment failure, followed by a review of the literature.

Case Presentation

A 40-year-old female was admitted in the gastroenterology service with complaints of intractable vomiting for two days. She also

reported progressively increasing upper abdominal pain and vomiting over last one month. Nausea and vomiting frequently occurred after meals. However, patient denied any history of fever, jaundice, melena or hematemesis. Laboratory workup, including blood analysis, liver function test, amylase test and lipase test, done in the outpatient department were normal. Past history was significant for acute cholecystitis one year back which was managed conservatively.

Physical examination was significant for mild tenderness in the epigastric area. Bowel sounds were normal. Plain abdominal X-ray did not show any signs of small bowel obstruction. A nasogastric tube was placed and drained 2.5 L of gastric contents immediately. Intravenous antibiotics and proton pump inhibitor therapy were started.

Esophagogastroduodenoscopy was done next day which revealed a normal esophagus and a dilated stomach with excessive secretions. A large blackish-brown hard stone was observed

in the duodenal bulb. Endoscopic retrieval of the gallstone using a basket and mechanical lithotripsy was unsuccessful. Patient was thereafter referred to general surgery service.

Upper midline laparotomy was done. During the operation, multiple adhesions among the

gallbladder, duodenal bulb and omentum were observed. Gall bladder was contracted and shriveled. Palpation for second part of duodenum revealed a large hard stone inside the duodenum. Subsequently, stone removal was done via duodenal incision, primary repair of duodenum and placement of drain into hepato-renal pouch.



Figure-1.

A: EGD showing stone in second part of duodenum
B: Intra-operative picture of stone being retrieved from duodenum
C: Pear shaped stone after removal

Post operatively, patient was managed with IV fluids, antibiotics and kept NPO. Oral diet was started on third post-operative day and progressed gradually. She was discharged on fourth post-operative day and remains symptom free during 1 year follow up.

DISCUSSION

For optimal outcome of Bouveret's syndrome, a prompt diagnosis is required given the high incidence of co-morbidities in affected patient population. Clinically, patients present with gastric outlet obstruction, with predominant symptoms of nausea, postprandial vomiting, and epigastric pain.³ The major risk factors for developing this syndrome include advanced age (more than 70 years), female gender, gallstones larger than 2.5 cm and postsurgical altered GI anatomy.^{6,7}

Initial investigation of choice would be an abdominal radiograph; however, the classic Rigler's triad (pneumobilia, SBO and gallstone) has only been reported 30-35% of cases. Ultrasound can be helpful to show biliary pathology, however contrast enhanced CT is ultimately required to confirm the diagnosis of obstruction and stone. It has a high sensitivity (93%), specificity (100%) and accuracy (99%)

according to Yu et al.⁸ In recent years, magnetic resonance cholangiopancreatography has proved efficacious in diagnosing this condition.³ Esophagogastroduodenoscopy may be performed for both diagnostic and therapeutic purposes. However, the ability to remove impacted gallstones endoscopically is still limited.⁹

The optimal treatment for Bouveret's syndrome remains controversial; options include endoscopic treatment, extracorporeal shockwave lithotripsy, intracorporeal electrohydraulic lithotripsy, open or laparoscopic surgery.¹⁰ Before embarking on any treatment strategy, parameters such as patient's age, comorbidities, general condition, the location of the obstruction, the size of the stone and fistula should be taken into consideration.^{4,5}

Endoscopic or percutaneous approaches should always be attempted prior to surgery, as most of the patients are likely to be poor surgical candidates.^{10,11} However, despite some reports of success, 91% of patients will have to undergo surgery for definitive treatment.^{11,12}

Choice of procedure includes single stage surgery (refers to a combination of enterolithotomy plus cholecystectomy and fistula repair), a two stage

procedure (enterolithotomy and stone retrieval initially with cholecystectomy and fistula repair at a later date) or simple extraction of the stone without fistula repair.¹ Single stage surgery is usually preferred in selected low-risk patients with a mortality of 20% to 30%. In critically ill patients a two-stage approach may be adopted. This approach carries a 5% risk of recurrence of gallstone ileus before the second stage and a reported mortality of 12%.^{4,5,13} Based on studies comparing combined cholecystectomy and fistula closure to enterolithotomy alone, some authors advocate that simple extraction of the stone is adequate treatment for most patients as this procedure is associated with less complications, lower mortality rates and the fact that recurrence of gall stone ileus is a rare event.¹³⁻¹⁵ In this report, patient was treated with simple stone extraction without any intervention on the fistula. During 1 year follow up, our patient has not developed symptoms or required a second surgery due to development of associated pathology.

CONCLUSION

For optimized outcome the medical and perioperative management and type of surgery are tailored to the condition of the patient. An initial endoscopic effort should be generally performed. In cases requiring surgical intervention, we recommend the simple extraction of the stone without fistula repair.

Competing interests

The authors declare that they have no competing interests.

Acknowledgement

There are no acknowledgments.

Copyright© 14 Oct, 2019.

REFERENCES

1. Yang D, Wang Z, Duan ZJ, Jin S. **Laparoscopic treatment of an upper gastrointestinal obstruction due to Bouveret's syndrome.** World J Gastroenterol. Oct 28; 19(40):6943-6.
2. Cappell MS, Davis M. **Characterization of Bouveret's syndrome: A comprehensive review of 128 cases.** Am J Gastroenterol. 2006 Sep; 101(9):2139-46.
3. Nabais C, Salustio R, Morujao I, Sousa FV, Porto E, Cardoso C, et al. **Gastric outlet obstruction in a patient with Bouveret's syndrome: A case report.** BMC Res Notes. 6:195.
4. Iancu C, Bodea R, Al Hajjar N, Todea-Iancu D, Bala O, Acalovschi I. **Bouveret syndrome associated with acute gangrenous cholecystitis.** J Gastrointest Liver Dis. 2008 Mar; 17(1):87-90.
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; 839370.
6. Gajendran M, Muniraj T, Gelrud A. **A challenging case of gastric outlet obstruction (Bouveret's syndrome): A case report.** J Med Case Rep.5:497.
7. Koulaouzidis A, Moschos J. **Bouveret's syndrome. Narrative review.** Ann Hepatol. 2007 Apr-Jun; 6(2):89-91.
8. Yu CY, Lin CC, Shyu RY, Hsieh CB, Wu HS, Tyan YS, et al. **Value of CT in the diagnosis and management of gallstone ileus.** World J Gastroenterol. 2005 Apr 14; 11(14):2142-7.
9. Ayantunde AA, Agrawal A. **Gallstone ileus: diagnosis and management.** World J Surg. 2007 Jun; 31(6):1292-7.
10. Doycheva I, Limaye A, Suman A, Forsmark CE, Sultan S. **Bouveret's syndrome: Case report and review of the literature.** Gastroenterol Res Pract. 2009; 2009:914951.
11. Nickel F, Muller-Eschner MM, Chu J, von Tengg-Kobligk H, Muller-Stich BP. **Bouveret's syndrome: presentation of two cases with review of the literature and development of a surgical treatment strategy.** BMC Surg. 13:33.
12. Katsinelos P, Dimiropoulos S, Tsolkas P, Baltagiannis S, Kapelidis P, Galanis I, et al. **Successful treatment of duodenal bulb obstruction caused by a gallstone (Bouveret's syndrome) after endoscopic mechanical lithotripsy.** Surg Endosc. 2002 Sep; 16(9):1363.
13. O'Neill C, Colquhoun P, Schlachta CM, Etemad-Rezai R, Jayaraman S. **Gastric outlet obstruction secondary to biliary calculi: 2 cases of Bouveret syndrome.** Can J Surg. 2009 Feb; 52(1):E16-8.
14. Brennan GB, Rosenberg RD, Arora S. **Bouveret syndrome.** Radiographics. 2004 Jul-Aug; 24(4):1171-5.
15. Thompson RJ, Gidwani A, Caddy G, McKenna E, McCallion K. **Endoscopically assisted minimally invasive surgery for gallstones.** Ir J Med Sci. 2009 Mar; 178(1):85-7.

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Marriam Gul	Data collection, literature search, manuscript writing.	
2	Irfan Qadir	Data collection, literature search, manuscript writing.	
3	Muhammad Qasim Butt	Patient care, manuscript writing	