



Laparoscopic Management of Bouveret's Syndrome With Cholecysto-duodenal Fistula - A rare case report

KEYWORDS

Bouveret's syndrome , cholecysto-duodenal fistula .

Aditya Yelikar

chief resident, Dept Of Surgery, MGM's Medical College And Hospital, Aurangabad, Maharashtra

Abdul Quayyum Khan

Associate Professor, Dept Of Surgery, MGM's Medical College And Hospital, Aurangabad, Maharashtra

Pravin Suryawanshi

Professor And Head , Dept Of Surgery, MGM's Medical College And Hospital, Aurangabad, Maharashtra

ABSTRACT

A rare case of gastric outlet obstruction secondary to a large gall stone (Bouveret's syndrome) presenting with abdominal pain, vomiting was reported . she underwent ERCP 1 year back for CBD stones and distal CBD stricture . the stones were removed and a stent was placed across the stricture . after 1 year she was taken up for CBD stent removal but surprisingly there was a large impacted stone in the pylorus . the endoscopic removal of the stone was unsuccessful because of the large size of the stone that got stuck up in pylorus .the patient was managed surgically by laparoscopic CBD exploration with enterotomy with cholecystectomy and fistulectomy with primary closure of the duodenal defect. The procedure was uneventful . she was discharged home well . thus we can say that Bouveret's syndrome should be managed endoscopically and if failed laparoscopic management can be attempted successfully .

INTRODUCTION :

Obstruction at the level of gastric outlet by a gall stone is defined as Bouveret's syndrome. In 1896 Leon Bouveret reported the first two cases of gastric outlet obstruction because of gall stones (1) .The syndrome is uncommon form of gall stone ileus , predominates in elderly women and represents 1-3% of cases (2) . The management is endoscopic or surgical in one or two steps . early endoscopic or surgical treatment in bouveret's syndrome improves the prognosis .

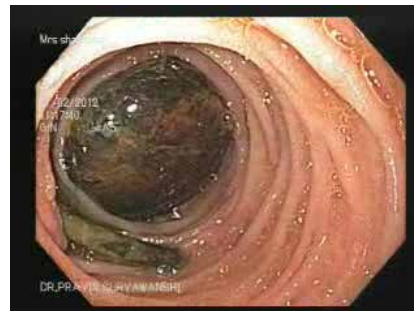
CASE REPORT :

A 55 years old female was admitted with complains of pain in right upper abdomen ,fever,backache. Her ultrasound showed features of cholelithiasis ,cholecystitis,pancreatitis. lipase was 13510 amylase 2845 TLC 9900 ,total bili 7.1 direct-5.1 ,enzymes were marginally raised. Her ERCP was done after pancreatitis was settled which showed terminal CBD stricture with distal CBD calculus with proximal CBD dilatation.stone was extracted using balloon and a CBD stent was placed.patient was discharged home and was advised stent removal and laproscopic cholecystectomy after 6 weeks .but patient did not turn up .

Surprisingly she came after 8 months with c/o pain in right upper abdomen,abdominal distention,vomitings,fever. Her usg showed features of cholecystitis with pneumobilia.bili total-1.4 TLC-9800 .xray abdomen was non significant. she was taken up next day for oesophago-gastroduodenoscopy (to rule out gastritis) . CBD stent was seen . There was e/o a fistulous opening (duodenum suggesting cholecysto-duodenal fistula) and two gall stones in the 2nd and 3rd part of duodenum .one stone was small and mobile which was extracted. Second stone was large occupying the entire lumen of the duodenum and was impacted at the junction of 2nd nd 3rd part of duodenum. Multiple attempts were made to remove the stone with the help of balloon , grasper & other foreign body removing forceps . The CBD stent was removed as it was coming in the way to remove the stone . but stone could not be removed (because of the large size of the stone) beyond the pylorus into the stomach . Decision was taken to post her for laparoscopic CBD exploration.

She was posted for surgery after 4 days and on day of surgery the intraop findings showed a cholecystoduodenal fistula with a contracted gall bladder . there were dense adhesions between the gall bladder and duodenum . on inspection of small bowel the stone was identified in proximal jejunum with proximal jejuna dilatation . Her cholecystectomy was done followed by enterotomy at proximal jejunum over the im-

acted gall stone and stone was extracted. the ports were removed and through a right subcostal incision the fistulous opening in the duodenum was excised circumferentially upto healthy margins and was closed primarily (duodenal exclusion) .the fistula tract was also excised . jejuna incision was anastomosed to the stomach (gastro-jejunosomy) . a drain was kept around second part of duodenum . the procedure was uneventfull .



1. ERCP video showing the previously places CBD stent and a large GALL STONE



2. Large GALL STONE which was removed by ileotomy

There was persistent hypokalemia for 2-3 days in post op period . she was supplemented with i.v potassium. On POD 4 her abdominal drain showed slight bilious colour . she was started soft diet on POD 6. On the same day there was e/o thick yellowish fluid in the drain which was appx 1.5 litre/day for 8-10 days . Also on POD 8 there was bilious discharge from the wound site which was appx 200cc/day which suggested a entero-cutaneous fistula . She had anemia (hb 7) and hypokalemia k-2.5 . rest there was no abnormality in

blood counts. She used to tolerate orally and passed motion daily. On POD 10 her USG showed 150-200cc collection in right lumbar region. She was taken up for naso-jejunal tube insertion on POD 11 and was kept NBM for about 10 days following which there was drastic reduction in amount of abdominal drain from 1500cc to 50cc in 3-4 days. the fistulous opening at the wound site also closed spontaneously on POD 20. Her abdominal drain was removed on POD 23 she was discharged home on POD 25. she came for follow up after 15 days and was absolutely fine with no fresh complains.

DISCUSSION :

Gall stones have a 10% prevalence in the united states and western Europe. they are however asymptomatic in 25-30% of patients. Complications of gall stones are acute and chronic cholecystitis,pancreatitis,choolangitis,gangrenous gall bladder,etc.. rare complications include mirrizi's syndrome,cholecystoduodenal fistula.

Obstruction at the level of gastric outlet by a gall stone is defined as Bouveret's syndrome. In 1896 Leon Bouveret reported the first two cases of gastric outlet obstruction because of gall stones (1). The syndrome is uncommon form of gall stone ileus, predominates in elderly women and represents 1-3% of cases (2). Gall stone ileus is more common in elderly women (3) and has a high mortality rate of 12-18%. most patients have other concomitant diseases that may increase the operative risk (4,5).

The size of the gall stone, the duodenal-biliary process inflammatory process and cholecystoduodenal fistula are some of the factors that may cause a gall stone to impact at the duodenum (6). the insidious clinical presentation and the lack of specific signs of biliary disease are responsible for the delayed preop diagnosis which leads to an overall mortality rate of 15%. The signs of rigler's triad- small bowel obstruction,ectopic gall stone,pneumobilia are commonly seen on plain abdominal xrays (12).the presence of two of these radiological signs has been considered pathognomonic of gall stone ileus and is been found in 40-50% of cases (8,9). proponents of enterolithotomy performed alone question the need to repair the biliary fistula in the same setting as this would prolong the operative time (10,11). although sin-

gle stage procedure with enterolithotomy,cholecystectomy and repair of biliary fistula is performed to avoid future risk of recurrent gall stone ileus, cholangitis and cholecystitis (7).

In our case after establishing the diagnosis of bouveret syndrome the stone was tried to be removed endoscopically but it was unsuccessful due to the large size of the stone. the stone was removed by laparoscopic enterotomy. the large stone which was stuck up in the pylorus was found in the jejunum which was probably migrated as it was broken down into pieces during its handling while trying to remove it endoscopically. It was followed by cholecystectomy with fistulectomy and primary closure of the duodenal defect.

Bouveret's syndrome is associated with significant morbidity and mortality (18) but now a days with early diagnosis with modern radiology and advent of minimally invasive techniques has reduced the mortality rate to 12% (25). Endoscopic appearance of gall stone can be bizarre with fibrotic looking ulcers (13). The fistulous stoma was visualized in only 13% of examinations (14). ultrasound depicts the double arch sign which is considered pathognomonic of Bouveret syndrome (15,16). 9% Of patients have successful non surgical treatment (18) including endoscopic retrieval and endoscopic laser or mechanical lithotripsy (19,20) and only 5% respond to extracorporeal shock wave lithotripsy (21,22). Minimally invasive therapies such as endoscopic retrieval have a relatively low success rate (14). Endoscopic removal of the gall stone should be attempted to minimize the necessary surgical procedure whenever possible (23) but it is difficult and sometimes complicated (24).

CONCLUSION :

The treatment of choice for Bouveret syndrome is endoscopic removal of the stone. if endoscopic removal fails single staged surgery consisting of enterotomy with extraction of gall stone with cholecystectomy with fistulectomy and duodenal exclusion (heinicke-mickulicz duodenoplasty). In low risk patients staged laparoscopic management of gall stone ileus and the associated cholecystoduodenal fistula is feasible and appears to be safe (17).

REFERENCE

- 1) Bouveret L. stenose du pylore adherent a la vesicule (French). Rev Med 1896; 16: 1-16.
- 2) Langhorst J, Schumacher B, Deselaers T, Neuhaus H. successful endoscopic therapy of a gastric outlet obstruction due to a gall stone with intracorporeal laser lithotripsy: a case of Bouveret syndrome. Gastrointest Endosc 2000; 51: 209-13.
- 3) el-dhuwaib Y, ammori BJ, stagfed and complete management of cholelithiasis in patient with gall stone ileus and bile duct calculi. Surg Endosc 2003; 17: 988-89.
- 4) doko M, zovak M, kopljar M, glavan E, ljubicic N, hochstadter H. comparison of surgical treatments of gall stone ileus; preliminary report. World J surg 2003; 27: 400-404.
- 5) gurleyik G, gurleyik E, gall stone ileus: demographic and clinical criteria supporting preoperative diagnosis. Ulus Travma Derg 2001; 7: 32-34.
- 6) katsinelos P, Dimiropoulos S, Tsolkas P, successful treatment of duodenal bulb obstruction caused by a gall stone (bouveret's syndrome) after endoscopic mechanical lithotripsy. Surg Endosc 2002; 16: 1363.
- 7) vanlandingham SB, broders CWW, gall stone ileus. Surg Clin North Am 1982; 62: 241-7.
- 8) kasahara Y, umemura H, shiraha S, et al. gall stone ileus. review of 112 patients in the Japanese literature. Am J Surg 1980; 140: 437-40.
- 9) day EA, marks C. gall stone ileus. Review of literature and presentation of thirty four new cases. Am J Surg 1975; 129: 552-8.
- 10) hardy KJ, Fletcher DR, Jones RM. One hundred liver resections including comparison to non resected liver - mobilized patients ANZ J Surg 1998; 68: 716-21.
- 11) miyagawa S, makuuchi M, Kawasaki S, et al. criteria for safe hepatic resection. Am J Surg 1995; 169: 589-94.
- 12) Jarbou SM, al-Hammouri FA. gall stone ileus in the Jordanian Royal Medical Services in a 10-year period. East Mediterr Health J 2000; 6: 1117-1121.
- 13) Charalambous CP, Midwinter M, Bancewicz J. unusual presentation of Bouveret's syndrome. J Gastroenterol 2002; 37: 476-78.
- 14) Cappell Ms, Davis M. Characterization of Bouveret's syndrome: A comprehensive review of 128 cases. Am J Gastroenterol 2006; 101: 2139-46.
- 15) Pederson PR, Peterson KK, Topp SW. value of ultrasonography in the diagnosis of gall stone ileus (german). Radiologe 1988; 28: 479-80.
- 16) Saez GF, Lopez RJA, Martinez AA, Pena SJM, Calonge RJA, Munoz DF. Bouveret's syndrome: new cause of double -arch shadow sign in cholecystosonography. Eur J Radiol 1984; 4: 216-18.
- 17) Malvaux P, Degolla R, Saint-Hubert M, Farchakh E, Hauters P. laparoscopic treatment of a gastric outlet obstruction caused by a gall stone (Bouveret's syndrome). Surg Endosc 2002; 16: 1108-09.
- 18) Lowe AS, Stephenson S, Kay CL, May J. duodenal obstruction by gall stones (Bouveret's syndrome): a review of the literature. Endoscopy 2005; 37 (1): 82-87.
- 19) Katsinelos P, Dimiropoulos S, Tsolkas P, Baltagiannis S, Kapelidis P, Galanis I, Papaziogas B, et al. successful treatment of duodenal bulb obstruction caused by a gall stone (Bouveret's syndrome) after endoscopic mechanical lithotripsy. Surg Endosc 2002; 16: 1363.
- 20) Schneider MU, Matek W, Bauer R, Domschke W. Mechanical lithotripsy of bile duct stones in 209 patients: effect of technical advances. Endoscopy 1988; 20: 248-253.
- 21) Holl J, Sackmann M, Hoffmann R, Schussler P, Sauerbruch T, Jungst D, Paumgartner G. Shock-wave therapy of gastric outlet syndrome caused by a gall stone. Gastroenterology 1989; 97: 472-74.
- 22) Ondrejka P. Bouveret's syndrome treated by a combination of shock -wave lithotripsy (ESWL) and surgical intervention. Endoscopy 1999; 31: 834.
- 23) Wittenburgh H, Mossner J, Caca K. endoscopic treatment of duodenal obstruction due to a gall stone (Bouveret's syndrome). Ann Hepatol 2005; 4 (2): 132-4.
- 24) Moschos J, Pilpilidis I, Antonopoulos Z, Paikos D, Tzivis D, Kadis S, Katsos I, et al. complicated endoscopic management of Bouveret's syndrome. A case report and review. Rom J Gastroenterol 2005; 14: 75-7.
- 25) Frattaroli FM, Reggio D, Guadalaxara A, Illomei G, Lomanto D, Pappalardo G. Bouveret's syndrome: case report and review of the literature. Hepatogastroenterology 1997; 44: 1019-22.