

Gallstone Ileus: A Case Report

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Abstract

Intestinal obstruction is a common emergency in surgical practice but rarely, it may be caused by gallstone impaction leading to a condition what is called as "Gallstone Ileus" (GI). The intestinal obstruction due to Gallstone impaction occurs due to a fistula in the biliary-enteric tract. It is a rare presentation accounting for only 0.1% of all causes of intestinal obstruction. A 70 year old female, presented with features of Intestinal obstruction for 1 week. Ultrasound of the abdomen revealed distended bowel loops and contracted gallbladder. Computerized tomography scan suggested contracted gallbladder with hyperdense contents with air foci in the gallbladder and common bile duct with a hypodense lesion in the jejunal loop with air foci and calcifications causing luminal occlusion with dilated proximal bowel loop. Laparotomy revealed a 3 cm stone impacted in jejunum 2 feet distal to Duodenojejunal (DJ) flexure with proximal dilatation of the jejunum. Enterotomy was done and the stone was removed. The bowel was decompressed and enterotomy was closed primarily. The patient has been on follow up without any complaints for the last 6 months.

Keywords: Intestine; Gallbladder; Abdomen; Acute; Pneumobilia

Introduction

Intestinal obstruction is a common surgical emergency. One of the rare causes of intestinal obstruction is "Gallstone Ileus" (GI). This condition was described by Thomas Bartholin in 1654. Less than 0.1% of cases of intestinal obstruction are due to this condition. The gallstone may get impacted in the pylorus or proximal duodenum and may present with symptoms of gastric outlet obstruction (Bouveret's syndrome). Gallstone ileus is characterized by Rigler's triad which is a set of radiographic findings: pneumobilia, small-bowel obstruction, and an ectopic gallstone. This condition is found more among the elderly, who may have a concomitant medical illness. Associated Cardiovascular, pulmonary, and metabolic diseases may affect the prognosis. The condition can be treated by performing a laparotomy and enterolithotomy. As the patient has cholecystitis and cholecystoenteric fistula which can be dealt at the same sitting or if needed is managed at a later date.

Case Report

70 years female presented in emergency with complaints of foul-smelling vomiting for 1 week associated with pain in the upper abdomen and progressive abdominal distention. On physical

examination, the abdomen was distended with tenderness present in right hypochondrium. Bowel sounds were present. There was no comorbid illness.

On investigations, total count was 16,020 cells/cumm, total bilirubin 1.1 mg/dL, SGOT/SGPT-151/73 IU, ALP-263 IU. Rest other blood parameters were within normal limits. Plain X-ray abdomen showed few air and fluid levels. Ultrasonography abdomen was suggestive of the contracted gallbladder with a diffuse thickness of gallbladder and ill-defined wall with air foci noted in the gallbladder and common bile duct suggestive of bilioenteric fistula. Stomach and proximal bowels were grossly distended with a large hyperechoic lesion noted in small bowel loop with posterior acoustic shadowing suggestive of small bowel obstruction because of gallstone. Computerized tomography scan was suggestive of the contracted gallbladder with hyperdense contents with air foci in the gallbladder and common bile duct with a hypodense lesion in the jejunal loop with air foci and calcifications causing luminal occlusion with dilated proximal bowel loop (Figure 1). Diagnosis of small intestinal obstruction secondary to calculus in the small intestine was confirmed. The patient was started on IV fluids and antibiotics. Ryle's tube was inserted which revealed 1.5 L feculent content. After resuscitation, laparotomy was done under general anesthesia. A 3 cm stone was impacted in

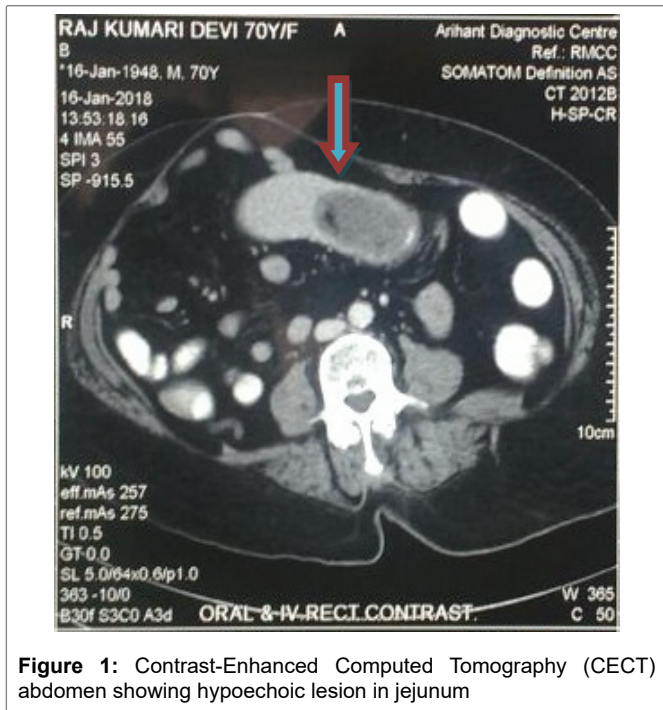


Figure 1: Contrast-Enhanced Computed Tomography (CECT) abdomen showing hypoechoic lesion in jejunum

jejunum 2 feet distal to DJ flexure (Figure 2,3) with proximal dilatation of the jejunum. The incision was made just proximal to stone and stone was removed and the bowel was decompressed. Primary closure of jejunum in transverse fashion was done (Figure 4). Dense adhesions were present between the gallbladder and the second part of the duodenum. Gallbladder was not visualized so nothing was done for gallbladder. In the postoperative period, the patient was stable and recovered well. She improved gradually and was allowed liquids orally on day 4. She passed flatus on day four and passed stool on day 5. She was discharged on Postoperative day 11 under stable conditions. The patient has been on follow up without any complaints.

Discussion

Gallstone Ileus (GI) affects females more as compared to the males, the ratio being male:female=3:5 [1]. This entity develops in 0.3%-0.5% of patients with cholelithiasis [2]. Initially the patient has acute cholecystitis and because of inflammation in the gallbladder along with surrounding structures, adhesions form. The inflammation, adhesion along with pressure effect of Gallstone leads to erosion of the wall of the gallbladder, causing a fistula between the gallbladder and surrounding structure as adjacent bowel and the Gallstone may pass through it into the bowel [3]. Sometimes a gallstone may enter into the duodenum through the common bile duct and rarely through a dilated papilla of Vater. Mostly fistula occurs between the gallbladder and the duodenum but the stomach, small bowel and the transverse portion of the colon may be involved. Sometimes Gallstone may pass after Endoscopic Retrograde Cholangiopancreatography (ERCP) and sphincterotomy leading to gallstones impaction in the bowel. Rarely spilled stones during laparoscopic cholecystectomy may also lead to this unusual condition. In order to cause obstruction, the diameter of gallstone should be more than 2 cm. The most common site of impaction is ileum (60.5%), followed by jejunum (16.1%), stomach (14.2%), colon (4.1%), and duodenum (3.5%). In 1.3% cases, Gallstone has been found to pass spontaneously [4,5]. There are several radiographic findings in Gallstone ileus like the presence of gas in the biliary system; bowel obstruction; gallstone in an abnormal position

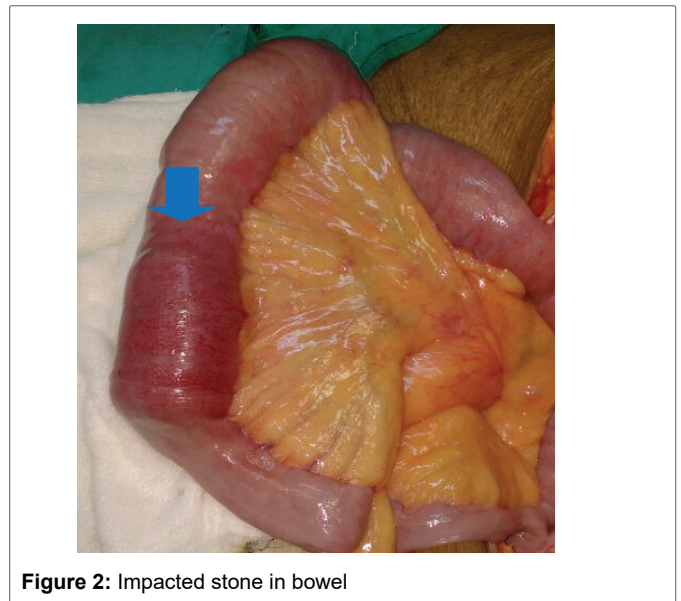


Figure 2: Impacted stone in bowel

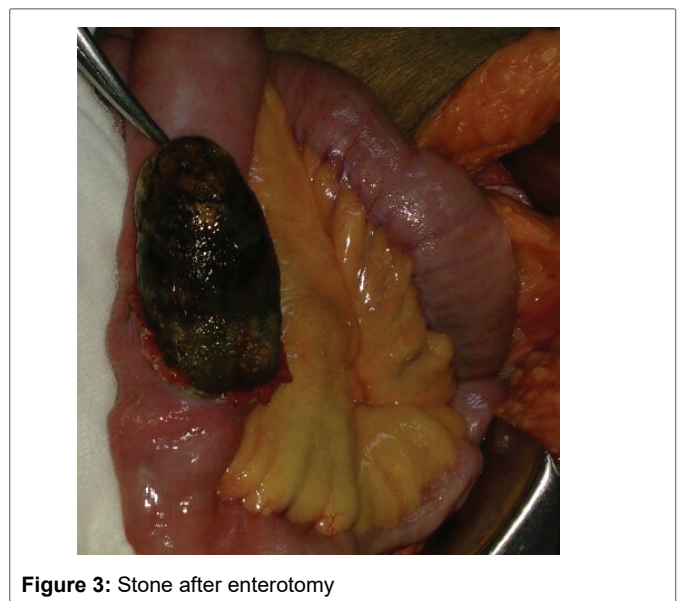


Figure 3: Stone after enterotomy

and alteration in the site of previously observed gallstone. Earlier it was difficult to diagnose gallstone ileus but with the advent of new imaging techniques like Computed Tomography (CT) scan and Magnetic Resonance Imaging (MRI), the task has become much easier [6,7].

Management of GI is still a controversial topic and has several options. The most important controversy in the management of gallstone ileus is whether biliary surgery should be carried out at the first operation after removal of stone from the bowel (one-stage procedure), or biliary surgery is performed later (two-stage procedure) or not at all. Majority of the time, enterotomy with stone extraction alone is carried out but other options are bowel resection alone, enterolithotomy, cholecystectomy and fistula closure; and bowel resection with fistula closure [4,8]. As the patients are elderly with comorbid illness, cholecystectomy may or may not be done in the first operation. According to different authors, enterolithotomy alone is the best option for most patients with gallstone ileus. The one-stage procedure of combining biliary surgery should be offered



Figure 4: Primary Repair of enterotomy

only to highly selected patients with absolute indications for biliary surgery at the time of presentation in a patient fit for tolerating both operations [9]. The patient has to be followed if the patient present with cholecystitis then cholecystectomy is required. Most of the time patient remains asymptomatic for a gallbladder problem. In more than 50% of cases, the fistulous tract closes spontaneously [7]. It has been noted that 5% of patients who undergo enterolithotomy alone come with a relapse of biliary symptoms and 10% require an unplanned reoperation. The laparoscopic technique may be considered as an option to treat such cases [8,10].

Conclusion

Even with the advancement in the imaging techniques and operative options, Gallstone ileus continues to be the most tricky and arduous cause for the mechanical intestinal obstruction. The condition is associated with the significant rate of mortality and morbidity as it affects older people and is associated with severe concomitant

diseases. Surgical treatment of Gallstone ileus is the removal of the stone by enterotomy. Whether to perform a cholecystectomy at the time of laparotomy remains controversial as many patients remain asymptomatic and it is difficult to carry out cholecystectomy in the first sitting because of dense adhesions and associated comorbid conditions as usually, these patients are elderly patients. In our patient, we only did enterolithotomy and the patient has been asymptomatic in follow up.

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