Case Report

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Gall stone ileus- a rare cause of intestinal obstruction: a case report and review of literature

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ABSTRACT

Gall stone ileus is an uncommon and potentially serious complication of cholelithiasis. The formation of fistula between the gallbladder and duodenum may allow the gallstone to enter the intestinal tract. It carries a significant morbidity and mortality due to the advanced age of patients and high incidence of concomitant diseases. Here we report a case of a 75-year-old male patient who is a known diabetic, hypertensive and COPD with a recent history of surgery for obstructed umbilical hernia. He presented in the emergency department with small bowel obstruction owing to a large stone in ileum. The clinical presentation, radiological features, operative procedure and literature review are presented.

Keywords: Enterolithotomy, Gallstone ileus, Intestinal obstruction

INTRODUCTION

Gall stone induced intestinal obstruction also referred to as Gall stone ileus is an uncommon and potentially serious complication of cholelithiasis. It occurs when gall stones migrate from the gall bladder to the bowel through fistula, cholecystoenteric causing obstruction. Cholecysto duodenal fistulas are the most frequent (75%), followed by cholecystocolic fistulas (10-20%) and other types (15%). Gall stone ileus accounts for only 1-4% of all cases of intestinal obstruction. In patients with cholelithiasis only 0.3-0.5% develop gall stone ileus. However, the incidence is 25% in elderly patients over 65 years of age.1 Gall stone obstruction causes a significant complication rate, mortality ranges between 12 and 18 % particularly in older patients who often have co morbid illness that increases the operative risk.2

CASE REPORT

A 75-year-old male patient presented in emergency department with 4 days' history of abdominal distension and fever. He had absolute constipation for 3 days. He is a chronic smoker and a known case of COPD. hypertension and diabetes. He was operated for umbilical hernia elsewhere 10 days back and referred here for further management. Physical examination significant for massive abdominal distension without signs of peritoneal irritation. Patient was not clinically jaundiced. There was a midline incisional scar in the region of umbilicus. Bowel sounds were reduced. Digital rectal examination revealed empty rectum. Patient was resuscitated. X ray abdomen showed dilated small bowel loops along with few air fluid levels, there was free gas under diaphragm probably due to previous laparotomy. Ultrasound abdomen revealed edematous, and dilated small bowel loops with sluggish peristalsis. Diagnosis of sub-acute intestinal obstruction was made and the patient was put on conservative management. Blood investigations showed Hb 13.5g/dl, WBC 15,200/cumm of which 85% were polymorphs. His serum electrolytes, renal function and liver function tests were normal. There was no improvement in his general condition with time and his obstruction was not relieved. To clarify the etiology an abdominal CT scan was obtained. The CT scan showed Pneumobilia (Figure 1), cholecystoduodenal fistula, dilated small bowel and intral luminal abnormal shadow in the terminal ileum (Figure 2), suggestive of gall stone ileus.

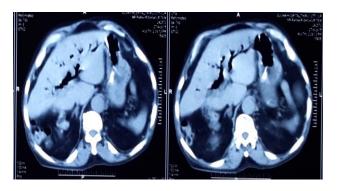


Figure 1: Upper abdominal CT scan; pneumobilia.

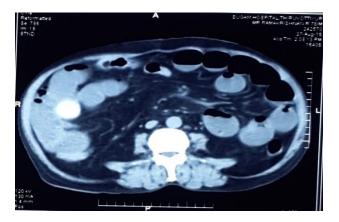


Figure 2: Lower abdominal CT scan showing impacted gall stone in the terminal ileum with small bowel obstruction.

Emergency exploratory laparotomy was done. Intraoperatively there was a 3.5cm obstructing calculus in the terminal ileum (Figure 3 and 5). The stone was removed via a longitudinal enterotomy (Figure 4) on the antimesenteric border, proximal to the site of impaction. The bowel was closed transversely to avoid narrowing of the lumen. The remainder of small intestine was carefully inspected for additional calculi. Cholecystoenteric fistula could not be identified due to dense pericholecystic adhesions. Due to the poor general condition of the patient and concomitant diseases, cholecystectomy and fistula closure were not carried out. Postoperative recovery was uneventful except for wound infection and hypokalemia that were corrected and the patient was discharged 20 days' post-surgery.



Figure 3: Impacted stone in the terminal ileum causing intestinal obstruction.



Figure 4: Enterolithotomy.



Figure 5: Extracted gallstone.

DISCUSSION

Gall stone ileus occurs more frequently in women and the ratio ranges from 4:1 to 16:1.³ Biliary enteric fistula is the major pathologic mechanism of gall stone ileus. It is believed that pericholecystic inflammation after cholecystitis, as well as the pressure necrosis by gall stone against the biliary wall may lead to formation of biliary enteric fistula. Fistula formation is a complication of 2-3% of all cases of calculus cholecystitis.⁴ The clinical features of Gall stone ileus are similar to that of mechanical obstruction.⁵ Abdominal pain and vomiting are the most common clinical presentations. Concomitant

diseases are present in as many as 80-90% of cases, as seen in our patient who had COPD, diabetes mellitus and hypertension.⁶ Additional risk factor in our patient is the History of recent surgery for obstructed umbilical hernia.

The diagnosis of gall stone ileus is difficult, usually depending on the radiographic findings. In about 50% of cases the diagnosis is usually made at laparotomy.¹

Lassandro et al compared the clinical value of plain abdominal film, ultrasound abdomen and CT abdomen in diagnosing 27 cases of gall stone ileus, and found that the Rigler's triad (Mechanical small bowel obstruction, ectopic gall stone and pneumobilia on abdominal X ray film presents 14.81% in plain abdominal film,11.11% in abdominal ultrasound and 77.78% in CT Abdomen, respectively. So the CT offers a crucial evidence for the diagnosis and management of Gall stone ileus.

Gall stone ileus usually require emergency surgery to relieve intestinal obstruction. The debate is about the choice of the procedure, whether a one stage or two stage surgical procedure or enterolithotomy alone. One stage procedure includes enterolithotomy, cholecystectomy and fistula repair. The two-stage procedure includes initial urgent enterolithotomy followed 4-6 weeks later by cholecystectomy and fistula closure. However enterolithotomy alone is the preferred procedure in an emergency setting as done in our case.8 Reisner et al reviewed a series of 1001 cases and concluded that (enterolithotomy procedure cholecystectomy and fistula closure) carries an associated mortality of 16.9%, compared to 11.7% for simple enterolithotomy.1 Wound infection and dehiscence have been cited as the most common complication after surgery as occurred in our case. Recently laparoscopic guided enterolithotomy has been the preferred surgical technique in gall stone ileus and care should be taken to inspect the whole small bowel for further stones because the incidence of second stone has been reported in 3-15% of patients.

CONCLUSION

To conclude gall stone ileus is often a misdiagnosed entity and carries a significant morbidity and mortality due to the advanced age of patients and high incidence of concomitant diseases. A high index of suspicion is

needed in elderly patients with intestinal obstruction to ensure a rapid diagnosis and management in order to reduce the mortality.

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