A RARE CASE OF GALLSTONE OBSTRUCTION IN THE SIGMOID COLON THRU A CHOLECYSTODUODENAL FISTULA IN A 41-YEAR-OLD FILIPINO FEMALE. A CASE REPORT.

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ABSTRACT

Gallstone ileus is an uncommon complication of cholelithiasis. It is caused by impaction of a gallstone seen in the ileum, the narrowest segment of the intestine. Gallstone obstructing the sigmoid colon is rare.

We report a case of a 41-year-old female with acute onset of mid-abdominal colicky pain for one week with loss of appetite, vomiting, and abdominal distention. She had occasional flatus but no bowel movement for 3 days. No previous abdominal surgeries.

Abdominal CT scan revealed absent gallbladder with pneumobilia, dilated bowel segments and presence of a hypodense ovoid structure with peripheral calcification in the distal sigmoid colon.

MRCP showed a sac-like fluid filled structure in the gallbladder fossa with filling defects, representing the gallbladder with intraluminal air and a thin fluid intensity tubular structure arising from the second portion of the duodenum connecting the sac-like structure in the gallbladder fossa, suspicious of a fistulous tract.

Colonoscopy revealed an obstructing gallstone located 25 cm from the anal verge. Several attempts were made to remove the stone from the sigmoid colon using a snare to defragment the stone however it would only slide over its superficial surface. Other attempts were also unsuccessful using a loop basket, Injection of mineral oil for lubrication, and a posterior balloon sweep. The stone could not traverse the sigmoid curve. A balloon (1.8 cm) was also distended at the recto-sigmoid area to detect or dilate any strictures however no stricture was appreciated.

Castor oil 60 ml per orem was given post colonoscopy in an attempt to naturally push the stone downwards. Few hours after, spontaneous passage per anus of the impacted stone measuring 3 x 4 cm was achieved. A plain film of the abdomen showed decompression of the gaseously dilated small bowel segments. Patient improved and was discharged the following day.

We highlight the rarity of a large gallstone passing thru a cholecystoduodenal fistula traversing the ileum and obstructing the sigmoid colon. Surgery is the primary treatment of gallstone ileus. However in this case, the effective treatment was simply using a laxative to naturally expel the gallstone after several failed attempts to remove by colonoscopy

Keywords: Gallstone Ileus, Bowel Obstruction, Cholecystoduodenal fistula

INTRODUCTION

Gallstone ileus is an important, though infrequent cause of mechanical bowel obstruction, affecting older adult patients. It accounts to 1 to 4% of all gallstone cases[1].

The term gallstone ileus is a misnomer because this condition represents a true mechanical obstruction of the intestine by a gallstone within the intestinal lumen after being passed through a biliary-enteric fistula.

Most commonly, gallstone large enough enter the bowel via a cholecystoduodenal fistula. A gallstone size of at least 2 cm is required to cause intestinal obstruction in the absence of a stricture.

We present a case of a 41-year-old female with no co-morbidities and no prior abdominal surgeries, who came in with a chief complaint of mid-abdominal colicky pain.

1 week before admission, the patient started to have colicky abdominal pain (8/10), associated with 5 episodes of vomiting, loss of appetite and abdominal distention. She had no fever nor diarrhea.

She sought consult to other hospitals where she was managed as a case of acute gastritis and constipation, she was given proton-pump inhibitor and a laxative which afforded temporary relief however she had recurrence of abdominal pain and distention with no bowel movement prompting consult in our institution. Her brother had cholecystectomy due to gallstones.

The patient was seen awake, afebrile comfortable, vital signs within normal limit. She is overweight. Conjunctiva was pink, anicteric sclera, no neck vein engorgement, clear breath sounds, regular cardiac rate and rhythm. Abdomen was globularly distended, hypoactive, tympanitic, soft non-tender in all quadrants. Rectal exam is unremarkable.

Plain film of the abdomen showed gaseous dilatation of some small bowel segments indicative of Ileus. Liver and spleen were not enlarged. (Figure 1.)

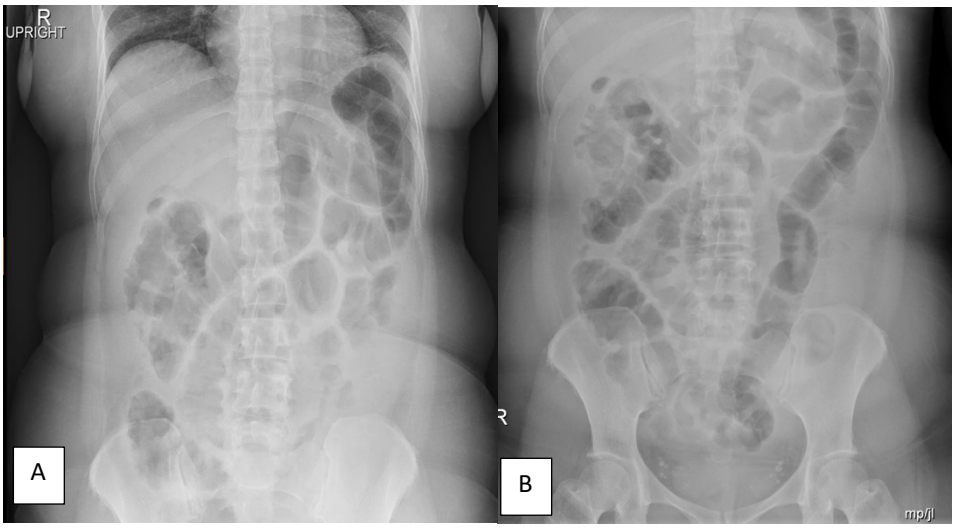

FIGURE 1. Plain film of the abdomen. a. Upright, b. Supine

Baseline laboratory results showed mild hypokalemia at 3.4. Complete blood count, creatinine, BUN were all unremarkable. (Figure 2.)

CBC			ELECTROLYTES	
Hemoglobin	14.30		Sodium	135
HCT	42.10		Potassium	3.4 L
RBC	5.0		Creatinine	0.62
WBC	9.6		BUN	34.83
Differentials				
Eosinophils	1			
Segmenters	68			
Lymphocytes	18 L			
Monocytes	13 H			
Platelet Count	423,000			

FIGURE 2. Baseline laboratory results.

A plain CT scan of the abdomen revealed a non-visualized gallbladder. Branching air density was noted within the biliary tree representing aerobilia. (Figure 3.)

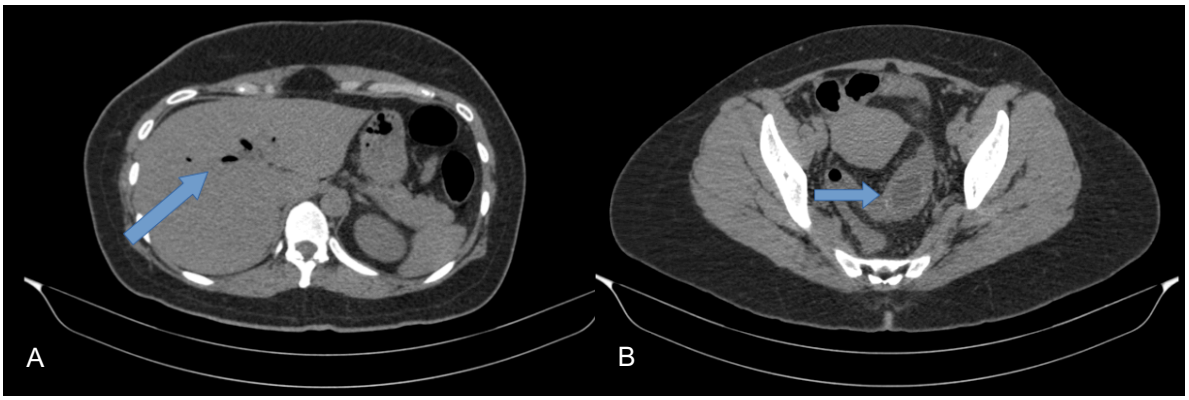

FIGURE 3. CT SCAN OF THE ABDOMEN SHOWING A. AEROBILIA, B. HYPODENSE OVOID STRUCTURE IN THE DISTAL SIGMOID COLON

A hypodense ovoid structure with peripheral calcification measuring 3.4 x 2.7 x 2.3 centimeters was noted in the distal sigmoid colon.

Sub-mucosal edema involving a short segment of the mid-ileum was noted as well as focal dilatation of the proximal jejunum with air-fluid level. No demonstrable transition zone.

MRCP showed a sac-like fluid filled structure in the gallbladder fossa with intraluminal filling defects that may represent the gallbladder with intraluminal air. Thin fluid intensity tubular structure arising from the second portion of the duodenum, which appears to connect with the sac like structure in the gallbladder fossa, suspicious of a fistulous tract. Mild common bile duct dilatation was noted (7mm).

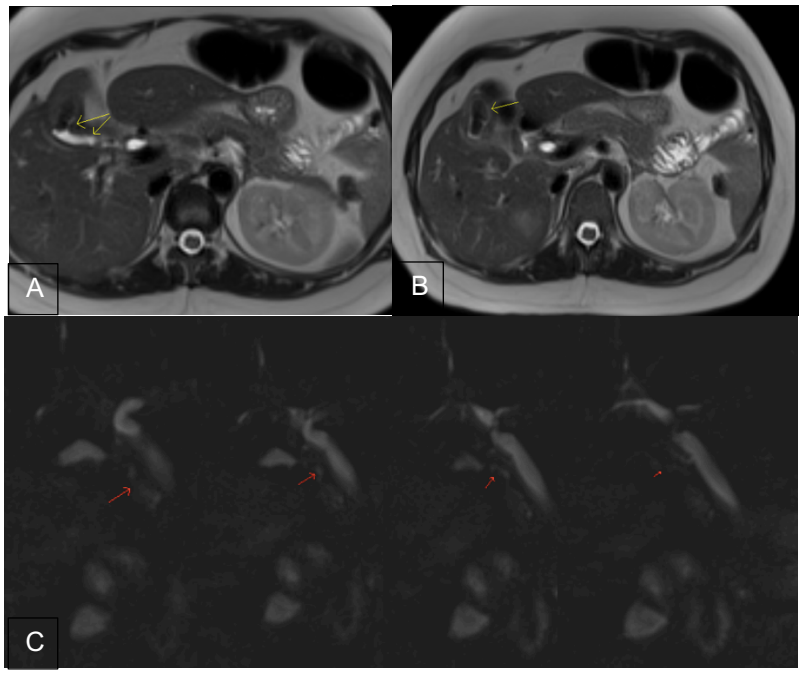

FIGURE 4. Magnetic resonance imaging. a & b. a sac-like fluid filled structure in the gallbladder fossa, c. fistula connecting the gallbladder and duodenum shown in the red arrow.

The patient was hydrated, antibiotics started and hypokalemia corrected. On the 2nd hospital day, the patient had flatus however still no bowel movement. She denies vomiting and abdominal pain. The abdomen was still slightly globular, hypoactive with no localizing tenderness. The patient was referred to surgery for evaluation. However, no surgical intervention as of that time was needed and suggested to do colonoscopy.

On the 3rd hospital day, the patient was scheduled for colonoscopy. She had flatus with minimal soft stools after giving fleet enema. Abdomen was still slightly distended, normoactive bowel sounds, soft non-tender in all quadrants. On colonoscopy, an obstructing yellowish-black gallstone located 25 cm from the anal verge was seen. There was difficulty negotiating the scope beyond this level. (Figure 5)

figure 5. A yellowish-black gallstone was seen 25cm from the anal verge.

Several attempts were made to remove the stone from the sigmoid colon using a snare to fragmentize the stone however it would only slide over its superficial surface.

Other attempts were also unsuccessful using a loop basket, Injection of mineral oil posterior and around the stone for lubrication, and a posterior balloon sweep. The stone could not traverse the sigmoid curve. A balloon (1.8 cm) was also inflated at the recto-sigmoid area to detect or dilate any strictures however no stricture was appreciated.

After several attempts, a mucosal defect was seen hence we decided to end the procedure. Post operatively, patient had stable vital signs, the abdomen was soft, no signs of perforation.

In an attempt to naturally push the stone downwards, a laxative using castor oil 60 ml was given by mouth post colonoscopy. Few hours after, spontaneous passage per anus of the impacted stone measuring 3.5 x 2.7 cm was achieved.

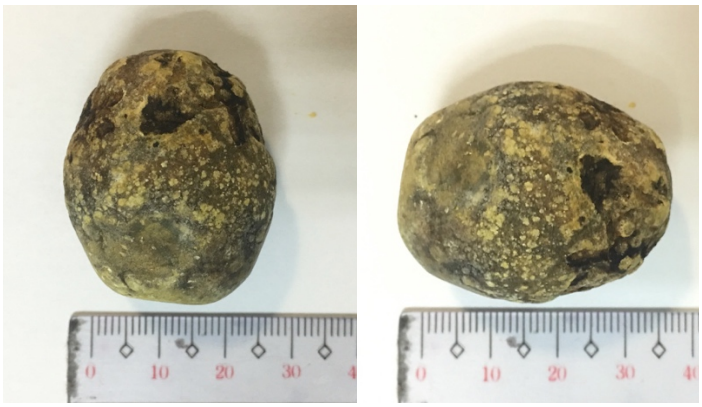

FIGURE 6. GALLSTONE MEASURING 3.5 X 2.7 CM IN DIAMETER

A repeat plain film of the abdomen showed decompression of the gaseously dilated small bowel segments. Patient improved and was discharged.

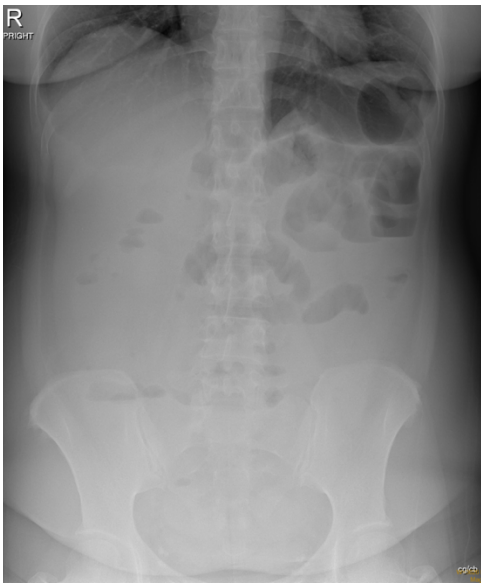

FIGURE 7. PLAIN FILM OF THE ABDOMEN AFTER SPONTANEOUS PASSAGE OF GALLSTONES.

DISCUSSION

Gallstone ileus is an important, though infrequent, cause of mechanical bowel obstruction, affecting older adult patients. It accounts to 1 to 4% of all gallstone cases[1].

The term gallstone ileus is a misnomer because this condition represents a true mechanical obstruction of the intestine by a gallstone within the intestinal lumen after being passed through a biliary-enteric fistula.

Most commonly, gallstone large enough enter the bowel via a cholecystoduodenal fistula. A gallstone size of at least 2 cm is required to cause intestinal obstruction in the absence of a stricture.

In our patient, she had a 3.5 x 2.7cm gallstone enough to produce a fistulous tract and cause obstruction.

The following sequence is responsible for most cases of fistula formation that lead to gallstone ileus. Pericholecystic inflammation after cholecystitis leads to the development of adhesions between the biliary and enteric system. Pressure necrosis by the gallstone against the biliary wall then causes erosion and fistula formation. Gallstone erodes away thru the fistula and lodges in the intestine[2].

The most common site of obstruction is the ileum, which is the narrowest segment of the intestine, followed by the jejunum, then stomach and colon[3,4].

In our patient, the stone was able to pass thru the ileum however obstructed at the sigmoid colon which makes this case unusual.

The classic radiologic features of gallstone ileus include pneumobilia, intestinal obstruction, aberrant gallstone location known as rigler's triad[5]. All three were present in this case. The diagnosis is often delayed since symptoms may be intermittent and investigations fail to identify the cause of the obstruction.

The recommended primary treatment for gallstone ileus is surgery, usually by operative enterolithotomy[6]. Endoscopic removal of the stone with or without lithotripsy also has been reported[7]. As of this time, there is no current published case report in the Philippines. However a case report from Italy by Pezzoli et. Al in 2015 where in a patient with gallstone ileus was treated with non-surgical conservative method by initially doing extracorporeal shock wave lithotripsy to fragmentize the stones then ileocolic stenosis

was endoscopically dilated and the stone was extracted[8]. The procedure was successful without complications.

What is unique about this case is that after several attempts to endoscopically remove of the stone, a simple use of a laxative was needed to naturally push the gallstone out of the intestine still sparing the patient from surgery.

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