

Small Bowel Obstruction Leading to Discovery of Gallstone Ileus Intraoperatively: A Case Report

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INTRODUCTION

Gallstone ileus is a rare cause of intestinal obstruction that requires a high index of suspicion to diagnose. The patient population most likely to develop gallstone ileus are women, with an increase in incidence in patients above the age of 65¹. Patients with gallstone ileus present as a typical small bowel obstruction case, with non-specific symptoms of abdominal pain, nausea, vomiting, and constipation⁵. These symptoms tend to wax and wane, as the gallstone progresses through the gastrointestinal tract. In diagnosing gallstone ileus, CT is typically the modality of choice because it has been shown to have 93% sensitivity and 100% specificity⁷. Since the presentation of gallstone ileus is both rare and non-specific, treatment may be delayed if not diagnosed immediately. Due to the pathophysiology of gallstone ileus, adhesions and fistulas may be formed, leading to complications such as pressure necrosis and inflammation of gastrointestinal structures⁵.

Here we present a case of an 83 year old female who was suspected to have a small bowel obstruction due to stricture formation as seen on CT, but was discovered to have a gallstone ileus intraoperatively during an exploratory laparotomy. Despite gallstone ileus being a rare cause of small bowel obstruction, it should still be considered in patients of older age even without CT findings, due to its high morbidity and mortality rate and surgical indications.

CASE PRESENTATION

HPI: An 83-year-old female presented to the Emergency Department with nausea and vomiting onset 4 days prior. The patient reported difficulty holding down solids and liquids since the onset of her symptoms. She reported associated intermittent lightheadedness, but denied any other symptoms including abdominal pain, fever, chills, constipation, hematemesis, or hemochezia. The patient did not endorse any sick contacts.

PMHx: HTN, GERD, arthritis, osteoporosis, post herpetic neuralgia

PSurgHx: Appendectomy, hysterectomy

Medications: Alendronate sodium, Calcium carbonate, Glucosamine Chondroitin, Lyrica

Allergies: NKA

Physical Exam on Arrival: Patient's vitals were all within normal limits. Physical exam was notable for dry mucous membranes and a soft, non-distended abdomen without any tenderness or guarding.

Labs: WBC 15.4, Na 132, Cl 93, BUN 28, Creatinine 1.47

Imaging: CT abd/pelvis showed findings consistent with small bowel obstruction with transition point at the level of the ileum, right lower quadrant abdomen. A defined mass lesion was not visualized, though wall thickening of the ileum was present, raising the possibility of stricture formation.



Figure 1. CT scan findings consistent with small bowel obstruction with a transition point at the level of the ileum with wall thickening, without defined mass lesion.



Figure 2. Small bowel follow-through study showing an abnormal obstructed gas pattern with air-filled dilated loops of small bowel.

CLINICAL COURSE

The patient was admitted and general surgery was consulted on the case. The patient was made NPO and an NG tube was placed with low intermittent suction for decompression. A small bowel follow through study was then performed which showed findings suggesting small bowel obstruction. The patient was failing to progress with non-operative management, so with shared decision making, an exploratory laparotomy was agreed upon and performed two days later. Upon entry into the abdomen, multiple dilated loops of bowel were noted, with discovery of a hard intra-luminal mass in the small bowel. With a notable transition point and decompressed bowel distally, the mass was likely the cause of the obstruction and a decision was made to remove it. A large stone consistent with a gallstone was milked from the bowel and a formal diagnosis of gallstone ileus was made. Upon return of bowel function, the patient's NG tube was removed two days post surgery with advancement of her diet as tolerated. The patient was stable for discharge home five days post surgery.

DISCUSSION AND CONCLUSION

In this case, our patient had a unique case of gallstone ileus. This is because there was no evidence of a gallstone ileus on CT scan, which is considered the gold standard for diagnosis. The findings on CT scan include signs of small bowel obstruction, ectopic gallstone, abnormal gallbladder with complete air collection, presence of air-fluid level, or fluid accumulation within an irregular wall⁷. As for our patient, only thickening of the ileum with a transition point was present, which supported the initial reasoning of stricture formation. In addition, 50% of patients will have a history of biliary pathology, such as biliary colic, cholelithiasis and cholecystitis, which wasn't present in our patient³.

Surgical management is preferred in most cases, because it decreases the mortality rate when compared to medical management⁶. There are three different surgical approaches, single stage, two-stage, or simple enterolithotomy. In the single stage procedure, enterolithotomy, cholecystectomy and fistula repair are performed at the same time. In a two stage procedure, enterolithotomy is performed initially, then a cholecystectomy and fistula repair is performed 4-6 weeks later. This is typically done in younger patients with recurrent biliary complications². The third option is a simple enterolithotomy, which was done in our patient. In comparing mortality rates, a rate of 11.7% was present for patients who underwent enterolithotomy alone versus 16.9% for patients who had the one-stage surgery⁴.

In conclusion, gallstone ileus presents as a diagnostic challenge, as it often mimics other etiologies of small bowel obstruction. In the absence of CT findings, it still cannot be ruled out, as we saw in our patient case. It is important to be included in the differential diagnosis, especially in those who fit the clinical demographics, since early intervention is associated with decreased morbidity and mortality rates.

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