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Case report



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Gallstone ileus in an elderly patient. Case report

AIM: To report another case of gallstone ileus in an elderly patient that was treated with simple enterolithotomy.

MATERIAL OF STUDY: We report a case of 84 years old female that was admitted with intestinal obstruction. A CT scan suggested small bowel obstruction secondary to gallstone ileus. In relation to the overall clinical condition, we decided to perform a simple enterolithotomy.

DISCUSSION: The first case of a cholecystointestinal fistula with a gallstone within the gastrointestinal tract was described in 1654 by Thomas Bartholin in a necropsy study. It constitutes the etiologic factor in less than 5% of cases of intestinal obstruction, but up to one quarter of nonstrangulated small bowel obstructions in elderly patients.

CONCLUSION: In conclusion gallstone ileus is increasingly common, especially in the context of an aging population in developed healthcare system. It is an important differential diagnosis in elderly patients presenting with small bowel obstruction because it has a high mortality rate.

KEY WORDS: Enterolithotomy, Gallstone ileus, Intestinal obstruction

Introduction

Gallstone ileus is a mechanical intestinal obstruction due to gallstone impaction within the gastrointestinal tract. Gallstone ileus causes 25% of small bowel obstructions (SBOs) in patients 65 years or older¹. It is a rare complication of chronic calculous cholecystitis; the stone usually migrates through a cholecystoduodenal fistula and impacts at the terminal ileum (ileocecal valve), which has the narrowest intestinal lumen². Gallstone ileus has a high mortality rate (15-18%) and is an important differential diagnosis to consider, especially as the elderly population throughout the world continues to grow^{3,4}. Delay in the diagnosis of ileus increases the morbidity

and mortality; therefore, an early and focused approach towards an accurate diagnosis is warranted. We report a case of 84 years old female that was admitted with intestinal obstruction. A CT scan suggested small bowel obstruction secondary to gallstone ileus. In relation to the overall clinical condition, we decided to perform a simple enterolithotomy.

Case presentation

A 84 years old woman was admitted in our unit with a 3 day history of abdominal colicky pain associated with bilious vomiting and obstipation. She had no fever. Her medical history was unremarkable except for hypertension. She had no abdominal surgery in the past. The laboratory results revealed leukocytosis and elevated blood urea nitrogen and serum creatinine. A computed tomography scan of abdomen revealed small obstruction with transition in the distal ileum probably due to obstructing gallstone. After an adequate hydration, according to the age and to the general condition of the patient, she was taken for a median laparotomy. Explored the abdominal cavity, there

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Fig. 1: Minilaparotomy.



Fig. 2: The dilated jejunal loop obstructed by the gallstone.



Fig. 3: Enterotomy with stone extraction.

was evidence of distension of small bowel and about 20 cm from ileocaecal valve a large gallstone was found impacted in the ileum. A proximal longitudinal enterotomy was made to extract the stone and it was closed trasversely. The postoperative recovery was uneventful and the patient was discharged at 4 st postoperative day in a good general condition.

Discussion

In 1654, Thomas Bartholin⁵ described a cholecysto-intestinal fistula with a gallstone within the gastrointestinal tract in a necropsy study. It is estimated that GSI complicates 0.4-1.5% of all cases of cholelithiasis; however the true incidence of this condition is unclear⁶. It constitutes the etiologic factor in less than 5% of cases of intestinal obstruction, but up to one quarter of nonstrangulated small bowel obstructions in elderly patients¹. Accordingly to the predominance of female patients in gallstone disease, the majority of gallstone ileus patients correspond to the female gender, with variable percentages from 72%90%^{7,8}. Pathogenesis of GSI is believed to involve the formation of a biliary-enteric fistula following acute cholecystitis, thereby allowing gallstone passage from the gallbladder to the enteric tract³. The most frequent fistula occurs between the gall-bladder and the duodenum, due to their proximity⁷⁻¹⁰ but the stomach, small bowel and colon may also be involved¹¹⁻¹³. The majority of gallstones smaller than 2 to 2.5 cm may pass spontaneously through a normal gastrointestinal tract and will be excreted uneventfully in the stools¹¹⁻¹³. Nakao et al found that impacted gallstones ranged in size from 210 cm, with a mean of 4.3 cm⁷. The most common intestinal obstruction will be the terminal ileum and the ileocecal valve because of their relatively narrow lumen

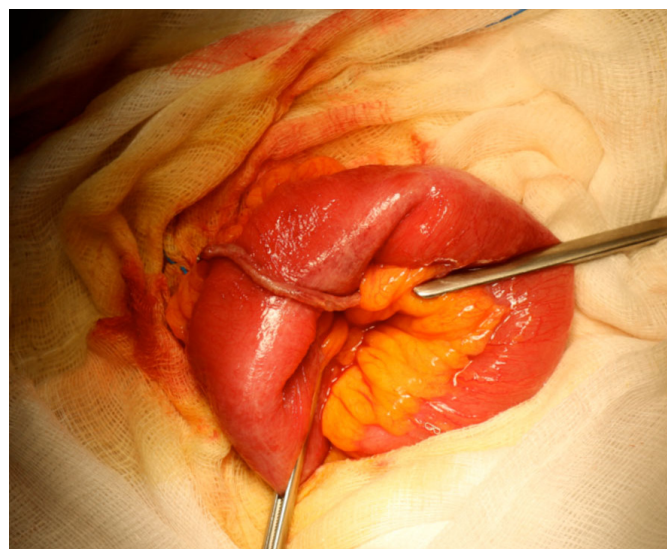


Fig. 4: Trasverse closure of enterotomy.

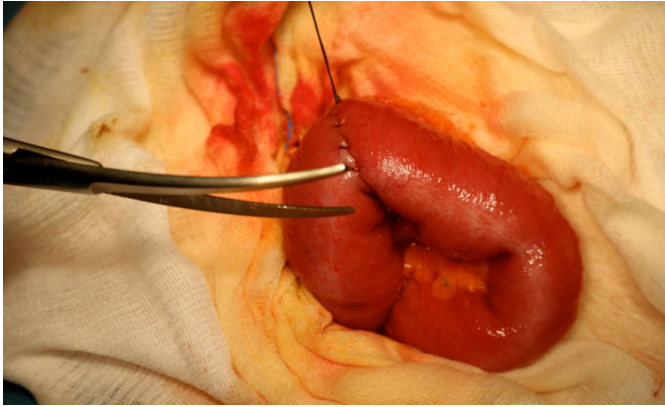


Fig. 5: Overlock continuous suture.

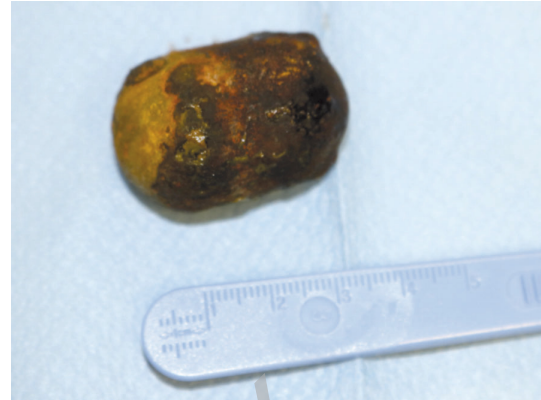


Fig. 6: The gallstone after removal.

and potentially less active peristalsis. Symptoms of gallstone ileus may be vague, intermittent, or inconsistent^{1,14,15}. The presentation of gallstone ileus may be preceded by a history of prior biliary symptoms, with rates between 27% to 80% of patients^{1,8,9,16,17}. Gallstone ileus may be manifested as acute, intermittent or chronic episodes of gastrointestinal obstruction with Nausea, vomiting, crampy abdominal pain and variable distension^{10-12,18-20}. The accurate preoperative diagnosis of gallstone ileus has been reported in 43-73% of cases, with a delay of 2-4.5 days between admission and surgical intervention⁹. Although plain abdominal X-ray is a main tool in the assessment of small bowel obstruction, it has a sensitivity of only 40-70% in the diagnosis of gallstone ileus¹⁴. Ultrasonography may offer better results than plain X-ray, but its sensitivity is less than 75%. CT scan offers overall sensitivity, specificity, and accuracy of 93%, 100%, and 99%, respectively¹⁴. Rigler's triad, the radiologic evidence of ectopic gallstone, bowel obstruction, and pneumobilia, has been reported on CT scan imaging in 77% of cases²¹. The main treatment is relief of intestinal obstruction by extraction of the offending gallstone. There is no consensus on the indicated surgical procedure. The management of GSI depends on the size of the stone and the clinical condition of the patient. Options include: simple enterolithotomy; enterolithotomy, cholecystectomy and fistula closure (one stage procedure); enterolithotomy with cholecystectomy performed later (two stage procedure). Bowel resection is sometimes necessary, particularly in presence of ischemia, perforation or an underlying stenosis^{22,23}. Enterolithotomy has been the most commonly surgical procedure performed and consists in an exploratory laparotomy, a longitudinal incision on the anti mesenteric border proximal to the site of gallstone impaction, extraction of stone and transverse closure of enterotomy^{22,23}. Reisner et al. report a mortality rate of 11.7% for simple enterolithotomy compared to 16.7% for a one stage procedure and most reports favour enterolithotomy alone due to lower mortality and morbidity, although when bowel resection is required this margin of difference narrows^{24,25}. His

improvement in survival has been accompanied by an increase in the reporting of recurrence which is thought to occur in 5-8.2% of cases in patients undergoing enterolithotomy alone²⁶. Half of recurrences occur within one month of the index operation, but can occur up to 2 years later²⁷. According to different authors, enterolithotomy alone is the best option for elderly patients with multiple comorbidities. The one stage procedure should be offered only to highly selected young and hemodynamically patients with absolute indications for biliary surgery at the time of presentation and who have been adequately reanimated^{1,7,9,25,28}.

Conclusion

In conclusion gallstone ileus is increasingly common, especially in the context of an aging population in developed healthcare system. It is an important differential diagnosis in elderly patients presenting with small bowel obstruction because it has a high mortality rate. The main treatment is relief of intestinal obstruction by extraction of the offending gallstone. There are three surgical options: simple enterolithotomy; enterolithotomy, cholecystectomy and fistula closure (one stage procedure); enterolithotomy with cholecystectomy performed later (two stage procedure). The surgical procedure of choice should be that with the lowest risk of complications, dictated by the clinical condition of the patient. Moreover, early intervention improves the patient clinical outcome.

Riassunto

L'ileo biliare è una rara complicanza della colecistite cronica che provoca circa il 25% delle ostruzioni intestinali nei pazienti over 65 anni. La patogenesi è caratterizzata dalla formazione di una fistola colecisto-enterica attraverso cui avviene il passaggio di un calcolo biliare nel tratto enterico. Se il calcolo è di piccole dimensioni

ni può essere espulso naturalmente, viceversa rimarrà impattato, generalmente a livello della valvola ileocecale, determinando un'ostruzione meccanica. La morbidità e la mortalità associate all'ileo biliare sono molto alte anche in relazione a diagnosi tardiva. La terapia è pressochè chirurgica e comprende tre diverse opzioni: enterotomia semplice con estrazione del calcolo; enterotomia estrazione del calcolo e colecistectomia in unico tempo; enterotomia estrazione del calcolo e colecistectomia in due tempi. Generalmente la strategia chirurgica viene decisa in relazione all'età ed alle condizioni cliniche del paziente poiché la semplice enterotomia è ovviamente gravata da minore morbidità e mortalità. In questo articolo viene riportato il caso di una paziente di 84 anni ricoverata nella nostra UOC per occlusione intestinale e trattata chirurgicamente con l'enterotomia ed estrazione del calcolo

Recurrences

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