

Biliary ileus resolved by laparoscopy

Íleo biliar resuelto por laparoscopia

Daniel Ríos-Cruz,* Fidel Alfonso Hernández-Linares,* Natividad Cabrera-Valladares,†
Sofía Magaly Flores-Hidalgo,‡ Wendy López-Pérez,‡ Myrtha Guadalupe Vera-Ruiz‡

Keywords:

Biliary ileus,
laparoscopy,
cholelithiasis.

Palabras clave:

Íleo biliar,
laparoscopia,
colecistitis.

ABSTRACT

Introduction: Biliary ileus is a mechanical obstruction of the gastrointestinal tract caused by impaction of one or more gallbladder stones into the intestinal lumen through a bilio-enteric fistula. **Case report:** A 59-year-old woman with multiple comorbidities came to the emergency room with intestinal obstruction; imaging studies identified pneumobilia and intestinal loops distension, so it was decided to take her to the operating room for a probable biliary ileus and perform diagnostic laparoscopy, after which a 3.5 cm diameter lithium was found nestled in the terminal ileum. **Conclusion:** Biliary ileus is a rare complication of cholelithiasis. Treatment integrates rehydration and surgery to correct the cause of intestinal obstruction.

RESUMEN

Introducción: El íleo biliar es una obstrucción mecánica del tracto gastrointestinal y está causada por la impacción de uno o más litos de la vesícula biliar dentro de la luz intestinal a través de una fistula bilioentérica. **Caso clínico:** Mujer de 59 años con múltiples comorbilidades. Acude a urgencias por cuadro de obstrucción intestinal; mediante imagen se identifica pneumobilia y distensión de asas intestinales, por lo que se decidió ingresar a quirófano por un probable íleo biliar y realizar laparoscopia diagnóstica, tras lo cual se encontró un lito de 3.5 cm de diámetro enclavado en el íleon terminal. **Conclusión:** El íleo biliar es una complicación rara de la colecistitis. El tratamiento integra la rehidratación y cirugía para corregir la causa de la obstrucción intestinal.

INTRODUCTION

Biliary ileus (BI) is defined as a mechanical intestinal obstruction secondary to the presence of a gallstone in the intestinal lumen.¹ It is a rare and potentially serious complication of cholelithiasis, accounting for 1-4% of all intestinal obstructions in adults. The most frequent cause is the impaction of a stone in the ileum after passing through a bilioenteric fistula, usually cholecysticoduodenal (68-95%).² This occurs when there are recurrent episodes of acute cholecystitis that produce inflammation and adhesions between the gallbladder and the digestive tract.³ In most cases, the obstruction occurs in the terminal ileum (60%), followed by the proximal ileum (25%) and, more rarely, in the jejunum (9%), sigmoid colon (4%) or duodenum (2%).⁴ It mostly occurs in patients over 65 years of age where it can

reach up to 25% of small bowel obstructions;⁵ it is more prevalent in women, with a female to male ratio of 3.6:1. The mortality rate associated with biliary ileus ranges from 12 to 27%, and the morbidity rate reaches 50%, due to the advanced age of patients, associated pathologies (usually severe), late hospital admission and delayed therapeutic treatment.⁶

CLINICAL CASE

This is the case of a 59-year-old female patient with a history of a stroke event five years ago, type 2 diabetes under control with oral hypoglycemic agents (metformin 850 mg every 12 hours and glibenclamide 5 mg every 24 hours), hiatal hernia and ischemic heart disease under control. She also took acetylsalicylic acid 100 mg orally every 24 hours and atorvastatin

* Department of Surgery, Hospital General Regional No. 1, Instituto Mexicano del Seguro Social, Cuernavaca, Morelos.
† School of Medicine, Universidad Latinoamericana, Cuernavaca, Morelos.

Received: 04/03/2019
Accepted: 10/30/2019



How to cite: Ríos-Cruz D, Hernández-Linares FA, Cabrera-Valladares N, Flores-Hidalgo SM, López-Pérez W, Vera-Ruiz MG. Biliary ileus resolved by laparoscopy. Cir Gen. 2021; 43(1): 47-50.

40 mg orally every 24 hours. Her condition began with nausea and vomiting of brown gastrointestinal contents, which led to intolerance to the oral route accompanied by pain in the epigastrium zone and referred in intensity of 7/10. She self-medicated with antispasmodics and nonsteroidal anti-inflammatory drugs (NSAIDs), with partial improvement; 48 hours after the onset of symptoms, the intensity of pain increased and she presented abdominal distension, as well as inability to pass gases through the rectum. On admission to the emergency department, the patient was found to be dehydrated, with distended abdomen, painful on superficial palpation and metallic noises on auscultation. A gastric tube was placed, and the aspirated liquid was fecaloid in appearance. Biochemically she had acute renal failure, hydro electrolyte imbalance and metabolic acidosis lab results. Radiographically, there were dilated small bowel loops, pneumobilia (Figure 1) and evidence of intestinal occlusion. In view of this, a laparoscopic surgical exploration was decided which showed dilatation of small bowel loops up to a segment of ileum, located 150 cm from the ileocecal valve, where a protrusion was observed that marked the end of the intestinal dilatation and that corresponded to a 3.5



Figure 1: Plain abdominal X-ray showing dilated small bowel loops. The arrow shows pneumobilia.



Figure 2: The enterotomy and the stone coming out of the lumen of the small bowel are seen.

cm interlocked biliary stone. An enterotomy with stone extraction were performed. The closure was in one plane, with continuous suture with 2-0 Prolene (Figure 2). During the intraoperative period, the patient had hemodynamic instability, so it was necessary to start support with norepinephrine (16 mg in 250 ml of 0.9% saline solution) at a rate of 8 ml/h, dose that was decreased until completely discontinued after 48 hours. Subsequently, she evolved favorably, being discharged on the fifth day while maintaining hemodynamic stability, tolerating the oral route and with no data of systemic inflammatory response. Currently, one year after surgery, she continues to be seen as an outpatient with no complications related to the surgical event.

DISCUSSION

Biliary ileus represents 0.5% of cholelithiasis complications and it is a rare and potentially serious event. It occurs more frequently in elderly women. It accounts for 1-4% of all intestinal obstructions in adults over 65 years of age implying a high risk of complications, with a mortality of 12-27%.⁷ It is a pathology that is not usually diagnosed prematurely, due to the similarity of symptoms with more common acute abdominal conditions, and the diagnosis is usually done by intraoperatively. Our case is a 59-year-old woman with associated comorbidities. These findings correspond to those published by Sánchez-Pérez and collaborators,² who studied a group of patients

with a diagnosis of intestinal obstruction; of which, 10 cases were caused by biliary ileus; eight were women and the mean age of presentation was 61.9 years. This causes patients to present to the emergency department in poor condition. They usually present with acute renal failure due to dehydration and acid-base imbalance. In our case, the patient presented to the hospital with 48 hours of evolution without tolerance to the oral route, during which time she did not have an adequate food and liquid intake. This conditioned the patient to present acute renal failure due to dehydration and metabolic acidosis together with data of a systemic inflammatory response, findings that this type of patients usually have.²

For a biliary ileus to occur, there must be a bilioenteric fistula, mostly cholecysto-duodenal (68-95%), which appears as secondary to recurrent episodes of acute cholecystitis that produce inflammation and adhesions between the gallbladder and the digestive tract. The stone must have a diameter ≥ 2 -2.5 cm to cause obstruction.⁸ Approximately, only 50% of patients presenting with biliary ileus are aware of having cholelithiasis, being reluctant to elective surgery. The rest of the patients report a history of non-specific abdominal pain, treated as dyspepsia or functional disorders of the colon, and the diagnosis is made intraoperatively as in this case. Our patient was unaware of the history of cholelithiasis and reported abdominal pain in upper quadrants with the ingestion of gastric irritant foods, rich in cholecystokinetic food, which was controlled with antacids, proton pump inhibitors and antispasmodics, so she never sought medical attention. This pattern has been occurring repeated approximately every three weeks for "his entire adult life".

Radiographic findings in a simple abdominal projection include: pneumobilia, evidence of intestinal obstruction, an image suggestive of a stone in intestinal loops, and changes in the location of the stone as was visualized in a previous radiograph.⁹⁻¹³ The use of computed tomography scan is an important diagnostic support since it has a diagnostic sensitivity, specificity, and accuracy of 93, 100 and 99%, respectively, as has been reported.¹³ Initial treatment requires IV solution administration, as

these patients usually present with dehydration. The laparoscopic surgical approach offers more advantages compared to open surgery; recovery requires less time. However, it represents a technical challenge, especially when the intestinal loops are edematous and dilated.¹⁴ In our case, we preferred the laparoscopic approach over the open approach because of the advantages that minimally invasive surgery offers. The patient did not present complications related to the surgical event. There is controversy regarding the management of bilioenteric fistula. On the one hand, only enterotomy, removal of the stone and primary closure is preferred, and on the other, in addition to the above, dismantling of the fistula and cholecystectomy are performed.⁸ It has been reported that elderly patients with multiple comorbidities represent a real challenge, since there is a considerable increase in leakage, both intestinal and biliary, when performing all the procedures described in a single surgery.¹⁵ In our case, we decided to perform only enterotomy, removal of the stone and primary closure due to the patient's condition at the time of admission to the operating room and due to the intraoperative hemodynamic instability. We made the decision to resolve the emergency.

As reported by Halabi WJ et al, 5% of patients who underwent enterolithotomy as the only treatment will develop biliary symptoms and 10% will require another emergency operation. In the presence of residual stones, the estimated prevalence of recurrence is 5 to 17% and more than half of these recurrences will be within six months of initial presentation.¹⁵ Because of this, if the gallbladder is preserved at the first surgery, deferred cholecystectomy should be performed.

In his article, Salvador Eloy García-Valenzuela and his colleagues present a couple of cases with biliary ileus resolved, one by laparoscopy and the other by conventional open surgery. They point out that they were different scenarios, had different comorbidity factors and different surgical procedures were performed, but the patients evolved satisfactorily, and they concluded that both surgical procedures are valid, and the choice is made by the surgeon, considering the

nutritional factors, the comorbidities of each patient and his/her own experience.¹⁶ Therefore, the decision to submit our patient to laparoscopic procedure was based on the wide experience in laparoscopy of our team, being a successful procedure and demonstrating that this condition can be solved by this approach.

CONCLUSION

Biliary ileus is a rare pathology that mainly affects elderly people, predominantly women. Enterolithotomy with removal of the ileum is the most frequently performed procedure due to its low incidence of complications.

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Ethical considerations and responsibility: This paper has patient's authorization, and bioethical research regulations were followed.

Disclosure: The authors declare that there is no conflict of interest in carrying out this work.

Correspondence:

Daniel Ríos-Cruz

Hospital Center Vista Hermosa.

Office 109.

E-mail: dr_rioscruz@outlook.com