International Journal of Research in Medical Sciences
Amador OE et al. Int J Res Med Sci. 2024 Sep;12(9):3434-3436
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20242626

Case Report

Gallstone ileus resolved with enterolithotomy: a case report and literature review

Olga E. Amador[1]*, Gabriel Gutierrez[1], Miguel A. Echeverry[2], Francisco Ayón[1], Santiago S. Ávila[1], Arturo E. C. Baldenebro[2]

[1]Department of General Surgery, Hospital General de Mazatlán "Dr. Martiniano Carvajal", Mazatlán, Sinaloa, Mexico
[2]Department of Surgery, Instituto Mexicano del Seguro Social, Leon, Mexico

Received: 12 July 2024
Accepted: 21 August 2024

***Correspondence:**
Dr. Olga E. Amador,
E-mail: olga.eamador@hotmail.com

ABSTRACT

Gallstone ileus is considered a rare complication in patients with cholelithiasis, occurring in up to 0.1-0.5%. It represents 4% of the causes of intestinal obstruction. Its prevalence increases with age, being observed up to 25% in patients over 65 years of age and has a predominance in the female gender. The occlusion can occur from the stomach to the rectum, being more common in the small intestine. We present a case of gallstone ileus that required surgical treatment which resolved the occlusion condition with a good evolution and a favorable discharge.

Keywords: Gallstone ileus, Bilioenteric fistula, Acute intestinal obstruction

INTRODUCTION

Gallstone ileus is considered a rare complication of patients with cholelithiasis, occurring in up to 0.1-0.5%.[1-3] It represents 4% of the causes of intestinal obstruction.[1-3] Its prevalence increases with age, being observed in 25% in patients over 65 years of age with a predominance in the female gender.[3] The occlusion can occur from the stomach to the rectum, being more common in the small intestine.[1,3,4]A bilioenteric fistula allows stones to pass into the intestinal tract causing mechanical obstruction.[2-4] The clinical picture is generally nonspecific, the symptoms are related to the site of obstruction.[2,4] Clinical episodes can be acute, intermittent or chronic depending on their presentation.[3,4] Generally the diagnosis is made within the first 7 days of the onset of symptoms and will mostly require surgical treatment by enterolithotomy.[4,5]

Pathophysiology

This entity appears when a biliary stone migrates through an enterobiliary fistula.[4,5] Chronic inflammation due to gallstones generates adhesions in adjacent structures.[1,5] The combination of this inflammation and the pressure of the gallstone causes erosion in the gallbladder wall, creating a fistula between the gallbladder and the portion that is attached to the intestinal portion, facilitating the passage of stones through it.[3,5] The most frequent site of fistula occurs in the duodenum in 85% of the cases.[2,5] The rest of the location includes cholecysto-gastric, cholecysto-jejunal, cholecysto-colonic, cholecysto-ileal, and common bile duct-duodenal fistulas, in order of frequency.[1,3,5] Depending on where the mechanical obstruction is located, symptoms will be induced; highlighting in one of the presentations the Bouveret syndrome in which the impacted stone is observed at the level of the duodenum causing gastric occlusion on the other hand the Barnard syndrome in which the occlusion is at the level of the ileocecal valve, causing a more distal occlusion.[1-3] The size of the stone is important since there is the possibility that it will spontaneously pass through the intestinal tract, reducing symptoms, or failing that, it will impact some part of it, causing greater symptoms compatible with intestinal obstruction.[1-3] Gallstones larger than 2.5 cm do not pass through the ileocecal valve.[1-3]

CASE REPORT

Symptoms are usually nonspecific, which results in a delay in diagnosis and timely treatment.[3-5] Gallstone ileus is characterized by either acute or chronic colic abdominal pain and will depend on the location of the occlusion of the symptoms.[2-5] The most frequent symptoms are: abdominal pain, abdominal distension, nausea and vomiting.[4,5] Hydroelectrolyte imbalance may be found in some patients.[4,5] Gallstone ileus can be suspected in those patients who present the Triad of Mordor, which consists of a history of gallstones, acute cholecystitis and the appearance of clinical signs of intestinal obstruction. This relationship can occur in 10-30% of cases.[2-5] Although it has been documented that the patient comes late to be evaluated and the confirmatory diagnosis of this pathology is obtained on the seventh day after the onset of symptoms.[1,4,5]

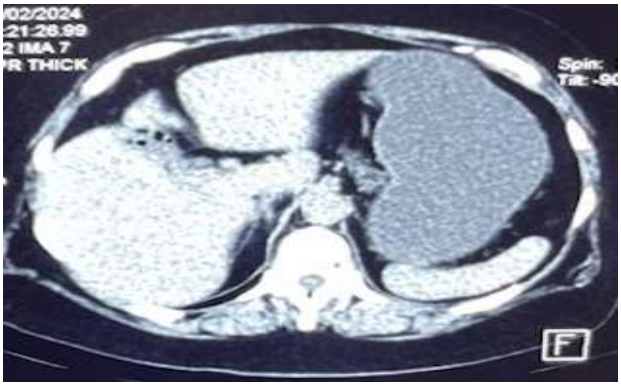

Figure 1: Simple abdominal tomography in which pneumobilia is observed.

Figure 2: Enterolithotomy at 170 cm.

Diagnosis

Unfortunately, the vast majority of the time the physical examination and laboratory tests do not guide towards any etiological diagnosis, so its diagnosis in 50% of cases is made through surgery.[7-9] This type of patient should be approached as in any type of intestinal obstruction, laboratory tests including liver function tests are requested, as well as imaging studies to support the diagnosis; It begins with taking a simple abdominal X-ray, which has up to 70% diagnostic sensitivity because bile stones are visible in 10%.[5-8] In the literature, Rigler's triad is described, consisting of pneumobilia, distention of intestinal loops and visible stone, which is present in 40% of cases and is considered pathognomonic of gallstone ileus.[1,5] Abdominal ultrasound is more useful in these cases to evaluate signs of acute cholecystitis, aerobilia or to demonstrate intestinal lithiasis, which usually goes unnoticed with said study. The imaging study of choice is contrast-enhanced abdominal tomography, maintaining a sensitivity greater than 90%.[1,5,6]

Figure 3: Gallstone.

Treatment

The therapeutic pillar continues to be surgical in which it can be performed; enterolithotomy, enterolithotomy plus cholecystectomy and fistula closure or enterolithotomy with cholecystectomy in the second stage with an interval of 4-6 weeks.[7-10] The first option is the most recommended because it reduces complications with less prolonged surgery for patients.[7] In this intervention, a mortality rate of 12% is estimated with a recurrence of up to 5%.[1,8-10] On the contrary, in patients who undergo enterolithotomy plus cholecystectomy, a mortality of almost 17% has been estimated.[6,7,10]

Case

A 65-year-old female patient with a surgical history of cesarean section and myomectomy 30 and 32 years ago respectively, was referred from her community hospital because she reported having abdominal pain for 7 days with diet intolerance, without peristalsis and absence of evacuations. Previously treated with antibiotic therapy and intravenous solutions without reporting improvement, that's why she was referred to our hospital. The initial management in our hospital for this patient was placement of a nasogastric tube, intravenous solutions in addition to analgesia for 48 hours, however the patient wasn't improving whit this measures so a contrast-enhanced abdominal tomography was performed, which reported small bowel obstruction due to probable biliary stone. Due to the above as well as the absence of clinical improvement, surgical treatment was decided and an

exploratory laparotomy was performed after 72 hours of her arriving at our hospital. As intraoperative findings, a foreign body was identified at 170 cm from the fixed loop that caused total obstruction, enterolithotomy was performed, extracting bile stone measuring approximately 3×5 cm, primary intestinal closure was done without incidents, adhesions were observed in the region of the gallbladder bed causing bleeding easily after removing adhesions, so it was decided not to perform cholecystectomy during this surgical shift. The patient presented an adequate clinical evolution in her immediate post-surgery, reporting a decrease in abdominal pain, channeling gases and presenting liquid evacuations, tolerating oral administration without eventualities, so it was decided to discharge her from hospital with subsequent follow-up consultation for management of the fistula and cholecystectomy in a second stage.

DISCUSSION

Gallstone ileus is a rare clinical entity, 0.1-0.5%, over time it is a disease that has not seen a significant increase.[1,2] In a patient who reports abdominal pain compatible with acute cholecystitis and is associated with intestinal obstruction, the physician should suspect that the patient is suffering from gallstone ileus.[1,5,10] The treatment in all cases is surgical, as in our patients, the range of procedures ranges from enterolithotomy, enterolithotomy plus cholecystectomy or at intervals, all of them with a mostly favorable evolution.[7,8] In the case presented in this article, adhering to the international bibliography, it was decided to perform enterolithotomy without intervention of the biliary fistula.[8-10] The patient had an adequate evolution, obtaining resolution of the intestinal obstruction, without the presence of complications.[7,8] In this way, the possibilities of complications are reduced, which is why the vast majority of the time this intervention is chosen, resolving the occlusion condition and in a second stage planning management of the fistula and/or cholecystectomy.[7,8] In the case of our patient, adequate clinical evolution and favorable resolution of the occlusive condition was obtained.

CONCLUSION

Gallstone ileus is a rare pathology that generates intestinal obstruction. As its prevalence is low, clinical suspicion is affected, delaying diagnosis and treatment, causing high surgical risk, which is why it is recommended to perform laparotomy with only enterolithotomy and resolve it first. time the occlusion picture, in order to reduce complications.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Ploneda-Valencia CF, Gallo-Morales M, Rinchon C, Navarro-Muñiz E, Bautista-López CA, de la Cerda-Trujillo LF, et al. Gallstone ileus: An overview of the literature. Rev Gastroenterol Mex. 2017;82(3):248-54.
2. Belmontes M, Pintor JC. Gallstone ileus, an infrequent intestinal occlusion, case report and literature review. Revista de la Facultad de Medicina de la UNAM. 2015;58(1).
3. Nuño-Guzmán CM, Marín-Contreras ME, Figueroa-Sánchez M, Corona JL. Gallstone ileus, clinical presentation, diagnostic and treatment approach. World J Gastrointest Surg. 2016;8(1):65-76.
4. Turner AR, Sharma B, Mukherjee S. Gallstone Ileus. 2022. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2024.
5. Salazar-Jiménez MI, Alvarado-Durán J, Fermín-Contreras MR, Rivero-Yáñez F, Lupian-Angulo AI, Herrera-González A. Gallstone ileus, surgical management review. Cir Cir. 2018;86(2):182-6.
6. Farkas N, Kaur V, Shanmuganandan A, Black J, Redon C, Frampton AE, et al. A systematic review of gallstone sigmoid ileus management. Ann Med Surg (Lond). 2018;27:32-9.
7. Mancilla Ulloa FJ, Rayas Ruiz D. Biliary Ileus: Case Report and Review of the Literature. Cir Gen. 2014;36(2):121-5.
8. Halabi WJ, Kang CY, Ketana N, Lafaro KJ, Nguyen VQ, Stamos MJ, et al. Surgery for gallstone ileus: a nationwide comparison of trends and outcomes. Ann Surg. 2014;259(2):329-35.
9. Requena-López AA, Mata-Samperio BK, Solís-Almanza F, Casillas-Vargas R, Cuadra-Reyes LA. Comparison between surgical techniques in gallstone ileus and outcomes. Cir Cir. 2020;88(3):292-6.
10. Ramírez-Nava JR, Rentería-Palomo E, Delano-Alonso R, Valenzuela-Salazar C. Bowel obstruction for gall stone ileus, surgical management. Rev Fac Med (Méx). 2019;62(3):32-7.

Cite this article as: Amador OE, Gutierrez G, Echeverry MA, Ayón F, Ávila SS, Baldenebro AEC. Gallstone ileus resolved with enterolithotomy: a case report and literature review. Int J Res Med Sci 2024;12:3434-6.