Case Report

Gallstone ileus: the importance of individualized management

Soulé-Martínez Christian Enrique1*, Alfaro-Ponce David2, Castellanos-Aguilar Leonel1, Jaimes-Durán Edwing Michel1, Banegas-Ruiz Rodrigo3, Barajas-Colón José Ángel4, Valderrama-Treviño Alan Isaac1

1Department of General Surgery, North Central Hospital of PEMEX, Mexico City, Mexico
2Department of General Surgery, Villahermosa Regional Hospital of PEMEX, Villahermosa, Mexico
3Department of Traumatology, Hand Surgery and Microsurgery, National Institute of Rehabilitation “Luis Guillermo Ibarra Ibarra, Mexico City, Mexico
4Department of Angiology and Vascular Surgery, XXI Century National Medical Center, Mexico City, Mexico

Received: 08 July 2021
Accepted: 23 July 2021

*Correspondence:
Dr. Soulé-Martínez Christian Enrique,
E-mail: christiansoule10@gmail.com

ABSTRACT

Gallstone ileus represents a complication of cholelithiasis, which in the literature has been reported as a rare cause of mechanical intestinal obstruction, however, the reported incidence is not so low, especially after 65 years of age. The formation of a biliary enteric fistula allows the passage of a large gallstone into the intestine, usually impacting the distal intestine. It is associated with a mortality that ranges between 12 and 27%. Treatment is surgical, although there is no consensus on which of the surgical techniques is the one of choice. We report the case of an 87-year-old male patient who was admitted to the emergency department with intestinal obstruction. He was diagnosed with gallstone ileus and was treated surgically with exploratory laparotomy, enterotomy with stone extraction, and primary closure. The evolution was favorable and without complications.

Keywords: Cholelithiasis, Gallstone ileus, Bowel obstruction, Cholecystoduodenal fistula

INTRODUCTION

Since its first description in 1654 by Thomas Bartolin, gallstone ileus (GI) has been a recurrently reported surgical pathology.1 Its incidence indicates that it is not so infrequent, the etiology being 25% of mechanical intestinal occlusions in patients older than 65 years and 1-3% in the general population (3.5:1 more common in women).2 Additionally, patients with gallstones larger than 2.5 cm are at increased risk of developing GI.3 When the GI occludes the outlet of the stomach, it is known as Bouveret syndrome, but it is more common for the occlusion to present at the level of the terminal ileum or the ileocecal valve, known as Barnard syndrome.4,5 The clinical picture is characterized by abdominal pain accompanied by symptoms of intestinal obstruction with several days of evolution (4-8 days).6-8 Preoperative diagnosis can be made employing plain radiography in 10-20% and by contrast tomography in 77% of cases, in which Rigler's triad (small bowel obstruction, pneumobilia, and ectopic gallstone) is evident.2 Usually, it is diagnosed in 50% of cases during the intraoperative period,6 it is then when the surgeon is faced with the decision to perform the only enterolithotomy, enterolithotomy with cholecystectomy at the same time, or enterolithotomy with delayed cholecystectomy.

CASE REPORT

An 87-year-old male patient without comorbidities, with a surgical history of open prostatectomy and left inguinal plasty. He went to the emergency room due to intolerance to the oral route, nausea, and vomiting of gastric contents.
on several occasions, of 3 days of evolution, associated with general malaise.

Upon admission, he found tension abdominal distension, increased peristalsis, and bloating on percussion.

Simple abdominal tomography shows a distended gallbladder, filled by air, with a 1 cm thickened wall, a 10 mm diameter common bile duct, a dilated stomach, a dilated small intestine with a 5 cm diameter to the proximal ileum, where a stone of approximately 2.5 cm is identified (Figure 1 A, B).

Figure 1 (A, B): Simple computed tomography with the presence of a 2.5 cm gallstone in the proximal ileum.

Laboratory tests reported leucocytosis of 18.3x10³/ml, neutrophils 16.6x10³/ml, hemoglobin 14.2 g/dl, hematocrit 42.3%, platelets 382x10³/ml, creatinine 3.77 mg/dl, urea 176.3 mg/dl, TP 11.5 (74%), TPT 22.4.

The diagnosis of probable gallstone ileus is integrated. A nasogastric tube is placed with an immediate discharge of 300 ml of the intestinal type.

An exploratory laparotomy was performed, finding gallstone in the small intestine 50 cm from the Treitz ligament, without dilatation of the bowel loops. A longitudinal enterotomy is performed at the antimesenteric border (Figure 2), a gallstone of approximately 5x2 cm is removed (Figure 3 and 4) and primary closure is carried out (Figure 5). After the pneumatic test without leakage, closed-type drainage directed to the pelvic cavity was placed and the surgical procedure was completed after 60 minutes, with bleeding reported in 10 ml.

Figure 2: Enterotomy at the antimesenteric border.

Figure 3: Gallstone removal.

Figure 4: 5.5×2 cm gallstone.
The surgical approach is almost always by laparotomy, only 10% is attempted to be resolved by laparoscopy, and the conversion rate is as high as 53.3% of the cases.2

It must be taken into account that, if it is decided to perform the only entero-lithotomy and the gallbladder pathology is not definitively resolved, recurrence presents mortality of 12-20%.16

This is why the treatment must be individualized in each patient, taking into account age, functional reserve, and material and human resources available.

CONCLUSION

GI is an increasingly common pathology; it should be borne in mind when approaching a patient over 65 years of age with intestinal obstruction. Timely diagnosis and preoperative stabilization are crucial in the outcome. Despite attempts to establish algorithms to decide its surgical management, to date, there are none validated and there is no infallible method. The decision will always depend on the experience of the surgeon and the resources available to him.

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

REFERENCES

1. Laurenco S, Pereira AM, Reis J, Guimaraes M, Nora M. Gallstone ileus: An Improbable Cause of Mechanical Small Bowel Obstruction. Cureus.2020;12(11):1-6.
2. Noah AO, Wadoodi A, Priest O. Gallstone ileus: a not-so-rare cause of bowel obstruction in the elderly. BMJ Case Rep. 2012:1-2.
3. Singh G, Merali N, Shiroi S, Drymousis P, Singh S, Veeramootoo D. A case report and review of the literature of Bouveret, Syndrome. Ann R Coll Surg Engl. 2020;102:15-9.
4. Salazar-Jimenez MI, Alvarado-Duran J, Fermin-Contreras MR, Rivero-Yañez F, Lupian-Angulo AI, Herrera Gonzalez A. Revisión del manejo quirúrgico. Cir Cir. 2018;86:182-6.
5. Freeman MH, Mullen MG, Friel CM. The progression of cholelithiasis to gallstone ileus: do large gallstones warrant surgery? J Gastrointest Surg. 2016; 20(6):1278-80.
6. Dunphy L, Al-Shoek I. Gallstone ileus managed with enterolithotomy. BMJ Case Rep. 2019;12:1-4.
7. Aguilar-Espinosa F, Gálvez-Romero JL, Falfán-Moreno J, Guerrero-Martínez GA, Vargas-Solis F. Sangrado de tono digestivo y delirium, resto en el diagnóstico del ileo biliar: reporte de un caso y revisión de bibliografía. Cir Cir. 2017;299:1-5
8. Pratas N, Salvador D, Costa CS. Gallstone ileus caused by a gallstone impacted at a cecum neoplasm. A case report. Int J Surg Case Rep. 2020;77:107-10.
9. Marcucci V, Diko S, Christian D. Gallstone ileus in a patent with amyotrophic lateral sclerosis: A case report. Int J Surg Case Rep. 2021;79:210-14.
10. Yang KJ, Chang CK. Bouveret Syndrome: A rare case of instance and treatment in a younger patient. Case Rep Gastroenterol. 2020;1-3.
11. Scuderi V, Adamo V, Naddeo M, Di Natale W, Boglione L, Cavalli S. Gallstone ileus: monocentryczna experience looking for the adequate approach. Updates Surg. 2018;70;503-11.
12. Mir S, Hussain Z, Davey A. Management and outcome of recurrent gallstone ileus: a systematic review. World J Gastroenterol. 2015;7:152-15.
13. Rabie MA, Sokker A. Colecystolithotomy, a new approach to reduce recurrent gallstone ileus. Acute Med Surg. 2019;6:95-100.
14. Hussain J, Alrashed AM, Alkhadher T, Wood S, Behbedhadi AD, Termos S. Gall stone ileus: Unfamiliar cause of bowel obstruction. Case and literature review. Int J Surg Case Rep. 2018;49:44-50.
15. Halabi W, Kang C, Ketana N, Lafaro K, Nguyen V, Stamos M et al. Surgery for gallstone ileus. Ann Surg. 2014;259(2):329-35.
16. Hao J, Chong J, Jing-Gang M, Lie-Zhi W, Lei M, Kun-Peng W. Rare recurrent gallstone ileus: A case report. World J Clin Cases. 2020;8(10);2023-7.