CLINICAL CASE

How correct is the postponed cholecystectomy during the coronavirus disease-19 pandemic process? Gallstone ileus is not a myth anymore

¿Qué tan correcta es la colecistectomía pospuesta durante el proceso pandémico de COVID-19? El íleo biliar ya no es un mito

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Abstract

Postponing elective surgeries during the coronavirus disease-19 (COVID-19) pandemic process increased the risk of severe complications of benign diseases. Gallstone ileus is one of the rare complications of cholelithiasis (0.3-0.5%). Recurrent episodes of acute cholecystitis are involved in pathophysiology. Demonstration of Rigler's triad on computed tomography is diagnostic. To reduce morbidity stepped surgery is recommended: remove the stone by enterotomy at the first operation and biliary surgery at the second operation. Gallstone ileus should be in the differential diagnosis of mechanical intestinal obstructions, especially in patients with a history of cholecystitis attacks during the COVID-19 pandemic process because elective surgeries stopped.

Key words: *Coronavirus disease-19 pandemic. Gallstone ileus. Acute cholecystitis. Postponed cholecystectomy.*

Resumen

Posponer cirugías electivas durante el proceso pandémico de Covid-19 aumentó el riesgo de complicaciones graves de enfermedades benignas. El íleo biliar es una de las raras complicaciones de la colelitiasis (0,3-0,5%). Los episodios recurrentes de colecistitis aguda están involucrados en la fisiopatología. La demostración de la tríada de Rigler en tomografía computarizada es diagnóstica. Para reducir la morbilidad se recomienda la cirugía dos etapas: extirpar el cálculo por enterotomía en la primera operación, cirugía biliar en la segunda operación. El íleo biliar debe estar en el diagnóstico diferencial de las obstrucciones intestinales mecánicas, especialmente en pacientes con antecedentes de ataques de colecistitis durante el proceso pandémico de Covid-19 porque las cirugías electivas se detuvieron.

Palabras clave: *Pandemia de coronavirus disease-19. Íleo por cálculos biliares. Colecistitis aguda. Colecistectomía pospuesta.*

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Introduction

Cholelithiasis is a common condition in general surgery practice with a frequency of 10-20% in adults[1,2]. Although most of the patients are asymptomatic, they can also present with biliary colic or complicated gallbladder diseases such as acute cholecystitis, choledocholithiasis, cholangitis, and/or gallstone pancreatitis, gallstone ileus, and even liver abscess[3]. The treatment of choice for gallbladder stones is laparoscopic cholecystectomy. However, during the coronavirus disease-19 (COVID-19) pandemic process, elective surgeries were postponed with the suggestions of many surgical associations[4,5]. Postponement of cholecystectomies brought the risk of increased complications of cholelithiasis. Here, we present a patient with cholelithiasis, who had a history of hospitalization with cholecystitis attacks twice during the pandemic process, and who was undergoing an emergent surgical intervention on her third visit for gallstone ileus which is a rare complication of cholelithiasis.

Presentation of case

A 77-year-old diabetic, hypertensive, and asthmatic female patient, first admitted to the emergency room in June 2020 with pain in the right upper quadrant of the abdomen and nausea for 2 days. Acute cholecystitis was diagnosed by the examinations, and percutaneous cholecystostomy was performed for the treatment because of the pandemic process. The patient was hospitalized for 6 days and was discharged with a percutaneous cholecystostomy catheter which was removed after 21 days.

Approximately 2 months later, the patient was admitted to the emergency department with abdominal pain and nausea again. By the examination, acute cholecystitis was diagnosed and the patient was hospitalized for medical treatment for 7 days.

Three months later, following the second hospitalization, the patient presented with complaints of nausea, vomiting, abdominal pain, and distension. Fluid levels were monitored on the abdominal radiograph. Upon the detection of the Rigler's triad (ileus, pneumobilia, and ectopic gallstones) (Figs. 1) on contrasted abdominal computed tomography, she was hospitalized to be operated on with the diagnosis of gallstone ileus. A limited mobile, large mass that completely obstructed the jejunum at a distance of

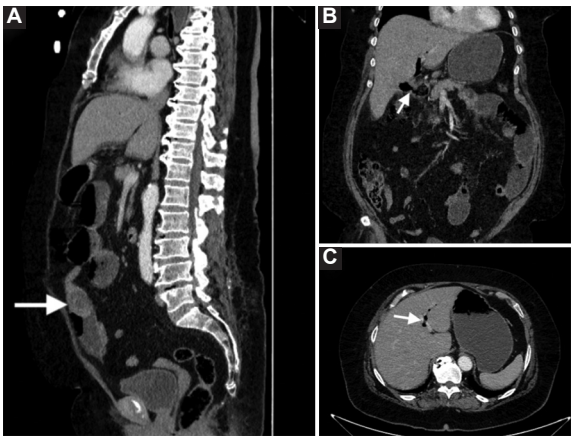

Figure 1. *Rigler's Triad.* **A:** *view of ectopic gallstones.* **B:** *cholecystoenteric fistula.* **C:** *pneumobilia.*

Figure 2. *Perioperative view: removal of gallstones by enterotomy.*

130 cm from the Treitz ligament was observed in the exploration performed by laparotomy (Fig. 2). The intestinal segment proximal to the mass was dilated due to obstruction. A large gallstone of 3 cm×4 cm was removed by enterotomy. Cholecystectomy and

fistula repair were left for a second session. Oral food intake was started on the post-operative 3rd day and she was discharged on the 7th day without any complications.

Discussion

The World Health Organization (WHO) declared COVID-19 as a public health emergency on March 11, 2020. As of December 20, 2020, more than 74,879,038 confirmed cases have been reported worldwide[6]. Since the COVID-19 outbreak reached pandemic levels, human resources, research, and spending to evolve in this direction in the healthcare system have deteriorated. To respond to millions of pandemic patients, elective surgeries have been stopped or limited. Many international surgical societies recommend avoiding elective surgical procedures. Undoubtedly, this situation has brought along an increased risk of complications of benign diseases such as cholelithiasis.

Gallstone ileus is a rare (0.3-0.5%) complication of cholelithiasis. Recurrent attacks of cholecystitis play a role in the pathogenesis[7]. In the history of our patient, there was an episode of cholecystitis that occurred twice within 5 months. As a result of chronic inflammation, adhesions occur between the gallbladder and the gastrointestinal tract. Ischemia and erosion develop in the gallbladder wall due to the compression of gallstones[8]. The process results in a bilioenteric fistula. Bilioenteric fistula most often occurs in the duodenum (60-68%). Cholecystocolic and cholecystogastric fistulas have also been reported[9]. While small gallstones passing through the fistula tract do not cause any problems, stones larger than 2.5 cm in diameter may cause obstruction. Obstruction is often seen at the distal or terminal ileum level (75%). Gallstone ileus accounts for 1-4% of all cases of mechanical intestinal obstruction, but for up to 25% of those in patients over 65 years. The frequency increases in women and especially over the age of 70 years[10,11].

The diagnosis of gallstone ileus is made perioperatively in 50% of patients[10]. Classical Rigler's triad consisting of pneumobilia, intestinal obstruction, and ectopic gallstones are seen in 40-70% of patients. In our case, the Rigler's triad was detected in the preoperative evaluations[10-12].

The treatment of gallstone ileus is surgical. There are differences of opinion on how to perform the surgical approach. The generally accepted approach is to remove the stone by enterotomy in the first operation and to perform cholecystectomy and biliary-enteric fistula repair in the second operation[11,12]. In our case, we performed stone extraction by an enterotomy and small bowel repair. We left cholecystectomy and fistula repair for a second operation. Hence, after three hospitalizations and one emergency surgery, the gallbladder is still in place and now a duodenal fistula with even.

Conclusion

Postponing elective surgeries during the COVID-19 pandemic has also increased the risk of complications of benign diseases. In this process, it should not be forgotten that we may encounter cholelithiasis complications, which we rarely see before the pandemic, more frequently, and the issue of postponing elective surgeries should be questioned with more concrete data.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for his study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent: The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

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