

## Case Report

## Cholecystocolonic Fistula. Case Report

Aguilar-Rubio JL<sup>1\*</sup>, Zamudio-Martínez A<sup>1</sup>, and Zamudio-Martínez G<sup>2</sup><sup>1</sup>Hospital General de Occidente, Zapopan, Jalisco, México<sup>2</sup>Hospital General Regional 46, Instituto Mexicano del Seguro Social, Guadalajara, Jalisco, México

\*Correspondence to: Aguilar-Rubio JL; General Surgery Department, Hospital General de Occidente. Av. Zoquiapan 1050. CP.45170, Zapopan, Jalisco, México; Tel: 3339567340; E-mail: jl\_agurub@hotmail.com

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## ABSTRACT

A cholecystocolonic fistula is a rare complication of gallbladder stone disease. Its incidence is 0.06% to 0.14% and it usually presents asymptotically in elderly patients. Currently there is no imaging study that is proven to be superior to the others for its adequate preoperative diagnosis. We present the case of a patient with nonspecific symptoms in which 3 different imaging studies evidenced an abnormal communication between the gallbladder and the hepatic flexure of the colon, the patient underwent cholecystectomy and intestinal resection with terminal stoma and subsequent recanalization without complications.

**Keywords:** Biliary-enteric fistula; Cholecystectomy; Cholecystocolic fistula; Gallstone Ileus.

## INTRODUCTION

A cholecystocolonic fistula is an abnormal communication of the gallbladder to any part of the colon, with its most common location being the hepatic flexure or the transverse colon; it is the second most common biliary fistula, after gallbladder fistula to the duodenum, with an incidence of 0.06% to 0.14% of cholecystectomy.<sup>1</sup> A higher incidence has been described in the elderly patients with associated comorbidities. This type of fistula is commonly identified intraoperatively and only 7.9% have a pre-surgical diagnosis, however, a diagnosis should be suspected in all patients of advanced age, comorbidities, long-term diarrhea, fever, and pneumobilia.<sup>1,2</sup>

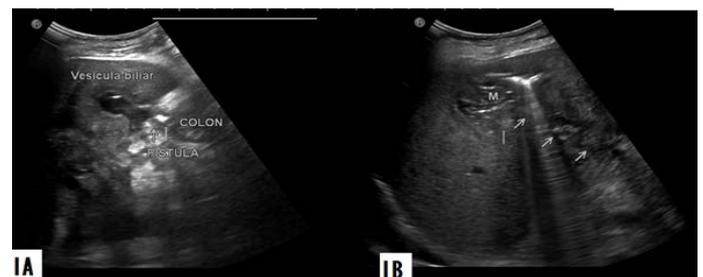
## CASE PRESENTATION

We present the case of a 44-year-old male patient, with no significant medical history, who presented to the emergency department complaining of abdominal pain, fever and weight loss of 2 months of evolution with intensification in the last week prior to admission, until it became unbearable. Upon admission the physical examination highlighted generalized pain in the abdomen, with accentuation in the right upper quadrant, and laboratory studies with the only finding of mild anemia and leukocytosis of 20,000. An ultrasound of the liver and bile ducts was performed, which reported an image suggestive of liver abscess of unknown etiology and an apparent cholecystocolonic fistula [Figure 1A, 1B]. Given these findings, he underwent a CT scan where an ascending

colon loop was found to be in contact with a dilated gallbladder, with apparent intestinal content [Figure 2A, 2B], the diagnosis was complemented with a barium enema that showed the passage of contrast medium to the gallbladder and bile ducts from the transverse colon [Figure 3A, 3B] confirming the diagnosis of cholecystocolonic fistula. Subsequently, the patient was scheduled for exploratory laparotomy where a fistula from the gallbladder fundus to the hepatic colonic flexure was found; Open cholecystectomy and resection of the affected colonic segment with terminal colostomy of the ascending colon were performed. The patient progressed adequately after surgery and was discharged without complications. Six months later, he was readmitted for intestinal recanalization without complications.

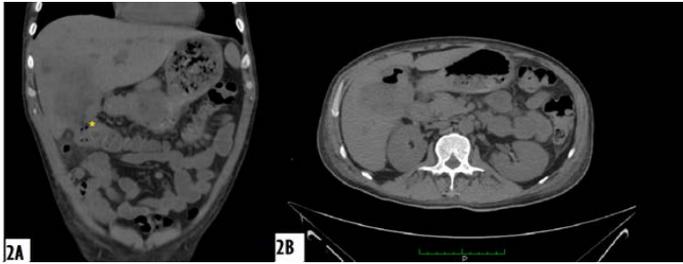
**Figure 1A:** Ultrasound of the liver and bile ducts where the abnormal communication between the gallbladder and the colon is observed, the arrow marks the fistulous path.

**Figure 1B:** Arrows mark fistulous path.

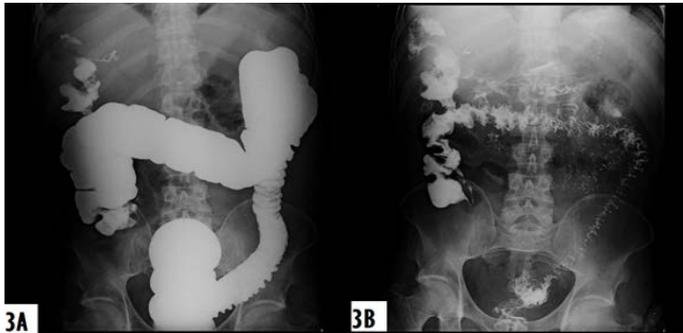


**Figure 2A:** Coronal section axial tomography showing, marked with an asterisk, a communication between the hepatic colonic flexure and the gallbladder, the image is accompanied by what appear to be multiple hepatic abscesses.

**Figure 2B:** Cross-sectional tomography showing pneumobilia, with an image suggestive of liver abscess.



**Figure 3A and 3B:** Barium enema study where the entire colon is painted, both images show contrast passage to the gallbladder and bile ducts, confirming the diagnosis of cholecystocolonic fistula.



## DISCUSSION

Cholecystocolonic fistula is a rare complication of gallstone disease, with a low incidence of 0.06% to 0.14%. The chronic inflammation of the gallbladder causes adhesions to form to the colonic wall, which in association with the compression caused by the lithiasis, erodes the gallbladder and colonic wall with subsequent fistulization of the tract. This rare entity has also been associated with pathologies such as inflammatory bowel disease, colonic or vesicular neoplasms, diverticular disease of the right colon, and abdominal blunt or open trauma.<sup>1,3</sup>

Unlike the cholecystoduodenal fistula, the cholecystocolonic fistula does not usually cause specific symptomatology, hindering its preoperative diagnosis which can only be made in about 8% of patients. In symptomatic patients, the most frequently reported complaint is chronic diarrhea related to altered bilioenteric circulation with steatorrhea; right upper quadrant pain and fever, with concomitant cholangitis in affected patients. A pathognomonic triad was described by Savvidou in 2009, which included vitamin K malabsorption, chronic diarrhea and pneumobilia, however its sensitivity or specificity is unknown and it has only been described in 50% of affected patients.<sup>4,6</sup> Even less common are the acute symptoms that are related to colonic obstruction, mainly in the sigmoid colon and lower gastrointestinal bleeding, which is usually massive and life-threatening.<sup>3</sup>

Preoperative diagnosis can be made in only 8% of affected patients, with no difference in the imaging modality used. Plain radi-

ography, ultrasound, computed tomography and barium enema have been tried, with nonspecific findings and none of them proving to be superior. The findings are usually nonspecific and there are multiple false negatives studies reported.<sup>7,8</sup> In the case of our patient, the first study performed was an ultrasound, which proved to be highly suggestive of the diagnosis, the tomography and the barium colonic enema confirmed the presence of the fistula and delimited its location.

Treatment in asymptomatic patients is expectant or with sphincterotomy and endoprosthesis placement by ERCP, to reduce the pressure of the common bile duct with spontaneous closure of the fistula. In symptomatic patients, common treatment is cholecystectomy with colonic resection. The approach can be open surgery or laparoscopic. In past years, the presence of a cholecystoenteric fistula was a contraindication for laparoscopic management, however, new studies have even shown better results with laparoscopic management, with a conversion risk of 52%. However, there is currently no consensus on the ideal treatment, so it should be guided by the patient's condition and the surgeon's experience.<sup>2,7,9</sup>

The most common associated morbidity is surgical site infection, affecting up to 50% of patients and the most common cause of death related to cholecystocolonic fistula is sepsis of biliary origin, with a mortality that reaches 13%.<sup>4,10</sup>

## CONCLUSION

Gallbladder stone disease is a common disease with rare complications, one of which is the cholecystocolonic fistula. A pathognomonic triad has been described, nevertheless it presents in less than half of the patients; the imaging studies currently available are not very sensitive nor specific for this pathology, therefore this is a diagnosis in which a high index of suspicion is needed in order to be confirmed. In the presented case, very illustrative pictures with different imaging modalities of the disease were obtained, which we hope will be useful for future surgeons who encounter patients with cholecystocolonic fistulas.

## CONFLICTS OF INTEREST

None.

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