

## A Surprise during Cholecystectomy; Cholecystocolonic Fistula

Kolesistektomi Sırasında Bir Sürpriz; Kolesistokolonik Fistül  
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### Özet

Kolesistokolonik fistül, kolesistoenterik fistüllerin kolesistoduodenal fistülden sonra en sık görülen ikinci fistül çeşididir. Genellikle, spesifik semptomlara neden olmadığı için preoperatif tanı nadiren konulabilir. Sıklıkla kullanılan görüntüleme yöntemlerinin tanı koyma oranları düşüktür. Tanı genelde intraoperatif konulduğu için cerrahlar için hoş gitmeyen bir sürpriz neden olur. Bu sunumda, intraoperatif tanı konulan, komplike olmayan kolesistokolonik fistül vakasını sunmayı amaçladık.

**Anahtar kelimeler:** *laparoskopisi, kolelitiyazis, bilier fistül, kolon*

### Abstract

Cholecystocolonic fistula is the second most frequent type of fistula after cholecystoduodenal fistula of cholecystoenteric fistulas. Preoperative diagnosis is rarely possible due to its non-specific symptoms. Diagnostic rates of frequently used imaging methods are low. They are often discovered intraoperatively, resulting in a challenging situation for the surgeons. Herein, we aimed to present a case of uncomplicated cholecystocolonic fistula diagnosed intraoperatively.

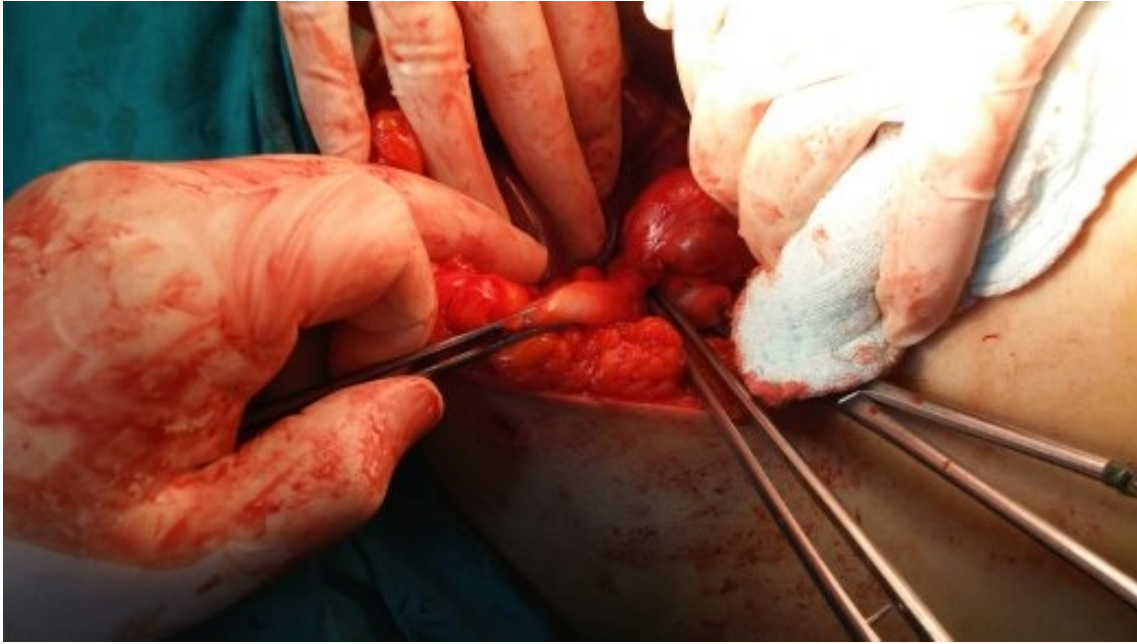
**Keywords:** *Laparoscopy, Cholelithiasis, Biliary Fistula, Colon*

### Introduction

Cholecystoenteric fistula (CEF) is the fistula between the gallbladder and the intestinal tract. When CEF is formed between the gallbladder and the colon, then, it is called the cholecystocolonic fistula (CCF). CEFs usually develop due to long-standing gallstones. 90% of all CEFs are associated with gallstones. In 0.2% of patients who underwent cholecystectomy, CEF is seen. The most common type of CEF is cholecystoduodenal fistula (CDF), while CCF is the second most common type of CEF with a rate of 10-20% in all CEFs. Cholecystojejunial and cholecystogastric fistulas are also rare CEF types<sup>1,2</sup>. Preoperative diagnosis is difficult and is frequently diagnosed intraoperatively<sup>3</sup>. The diagnosis was made intraoperatively in all of the 35 cases of CEF detected in the cholecystectomy series of 2450 patients<sup>4</sup>.

### Case Report

A fifty-five-year old female patient, who had been suffering from severe epigastric abdominal pain, nausea and vomiting for 5-6 years, had applied to Gastroenterology Clinic because she had a severe pain attack 1.5 months ago. Her AST: 656 U / L, ALT: 420 U / L, GGT: 893 U / L, ALP: 212 U / L were found to be high. Other biochemical parameters and hemogram values were found to be normal. Cholelithiasis was detected on the ultrasonography (USG), and choledochus was normal-sized. She was hospitalized and her complaints and biochemical parameters improved, and she was discharged after cholecystectomy was recommended. The patient was admitted to our polyclinic. Control biochemical parameters were normal. The operation was started laparoscopically, but later the open method was chosen because of the adhesions between the gallbladder and the colon. Through examination, a fistulous tract about 1 cm in diameter and 1 cm in length was observed between the middle part of the gallbladder and the colon (Figure 1).



**Figure 1**  
operation image

The fistula was excised and the colon was primary closed in double layers. Cholecystectomy was completed. There were no postoperative complications. Oral feeding was started on the 2nd postoperative day and she was discharged with full recovery on the postoperative 6th day.

The consent was obtained from the patient for scientific use.

## Case Discussion

Fistulas between the gallbladder and the intestinal tract are called cholecystoenteric fistula (CEF). According to the type of the intestinal component of the fistula, the fistulas are called cholecystoduodenal (CDF), cholecystojejunal (CJF), cholecystogastric (CGF) and cholecystocolonic (CCF). The most common CEF is CDF, followed by CCF.

Gallstones are the major factors in etiopathogenesis. Risk factors for CEF are inflammation due to biliary stone, inflammation affecting adjacent organs, epithelialization of the fistula tract developed between the gallbladder and the neighboring organ affected<sup>5,6</sup>. Although, the most common cause of CEF is cholelithiasis, malignant induced fistulas such as peptic ulcer and diverticular disease and benign and gastric tumors have also been detected in CEF patients without gallstones<sup>7</sup>. In our case, pathology could not be detected except gallstones which may cause fistula.

Diarrhea is the most common symptom in CCF. The right upper quadrant pain, jaundice, fever are other symptoms and are usually secondary to cholangitis. In addition, gallbladder-related ileus and ileus-related obstruction findings may also be seen in CEFs. Obstruction of CCFs is very rare<sup>8</sup>. In our patient, chronic mild abdominal pain, nausea and vomiting had been present for 5 to 6 years, and 1.5 months ago there was an increase in pain and liver stasis enzymes.

Preoperative diagnosis is very difficult in CCF as the symptoms often are mild and non-specific. For this reason,

when USG, which is the most commonly used test detects stones, the physicians accept the symptoms as connected to the gallstones and decide on operation without the need for additional tests and the diagnosis is made intraoperatively. Although, there are reports that the rate of preoperative diagnosis is approximately 7.9%<sup>3</sup>, it has been also reported that 35 cases are diagnosed intraoperatively in a series of 2450 cases<sup>4</sup>. In our patient, despite the elevation of stasis enzymes, in the USG findings, biliary tracts were evaluated as normal and the enzymes rapidly returned to normal. Therefore, no additional tests were needed and cholecystectomy was recommended to the patient by the Gastroenterology Clinic. In our patient, the diagnosis could only be made intraoperatively. It has been reported that direct radiography is useful in some cases by demonstrating gas in the gallbladder and its pathways, barium enema is diagnosed in some cases, endoscopic retrograde cholangiopancreatography (ERCP) is useful in some cases, and colonoscopy is useful in a few cases in the literature. Tomography, magnetic resonance imaging (MRI) and endoscopic US are also partially useful investigations<sup>9</sup>.

Treatment is not difficult in uncomplicated CCF cases and laparoscopic treatment is often recommended<sup>4</sup>. If precise preoperative diagnosis of CCF is not possible based on imaging findings, open cholecystectomy must be preferred. When preoperative diagnosis is made, laparoscopic cholecystectomy and intracorporal suturing of the colon or closure of the colon with stapler can be performed<sup>9</sup>. Although, colostomy was previously performed in some uncomplicated cases of CCF, colostomy is no longer recommended in these cases. In our case, the fistula was not complicated, but, since the preoperative diagnosis could not be made, it was necessary to proceed with the open surgery. The colon opening was closed primarily with cholecystectomy.

Treatment is more complicated in complicated cases of CCF such as gallstone ileus, hemorrhage, and multiple fistulas due to CCF. The surgical procedure chosen according to the pathology causing the complication of CCF is variable. There were cases of right hemicolectomy and segmental resection due to fistula-related bleeding. Decompression, enterolithotomy, segmental resection and protective colostomy are still among the treatment options in the emergency surgical treatment of cholelithiasis associated with CCF<sup>9</sup>. It is present in cases where the stone is removed by colonoscopy in order to avoid surgical intervention in colonic gallstones and to give further treatment to CCF<sup>10</sup>. Zielinski et al reported a case of colonic gallstone ileus successfully treated with endoscopic lithotripsy<sup>11</sup>. In conclusion, CCF is a rare disease that its preoperative diagnosis is rarely seen and is considered to be a late complication of gallstones. As an intraoperative diagnosis is often performed, surgeons should be prepared for this unpleasant surprise and should plan the most appropriate treatment option for possible complicated fistulas. Preoperative diagnosis is important because it will directly affect the surgical plan to be performed, but the best thing to do is to be a little more skeptical about the CCF because no imaging examination can achieve enough success.

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