

Case Report

Fever and Diarrhea after Laparoscopic Bilioenteric Anastomosis

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ABSTRACT

Bile duct injuries are well-known complications of laparoscopic and open cholecystectomies. Here, we report anastomosis of the common bile duct to the transverse colon that occurred as a complication of laparoscopic cholecystectomy. To the best of our knowledge, a similar case has not been reported in the literature so far. As in our patient, persistent diarrhea (in addition to fever and icterus) can be a warning sign of complication after these procedures. Surgeons who do advanced laparoscopic techniques must be familiar with this complication.

Key Words: Diarrhea, laparoscopic cholecystectomy, postcholecystectomy complications

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Diarrhea is a known symptom of biliary-enteric fistula. However, diarrhea due to an erroneous anastomosis of the biliary tree to the colon has not been reported as a complication of laparoscopic cholecystectomy to date. Surgeons who do advanced laparoscopic techniques must be aware of this complication and its presenting signs and symptoms.

CASE REPORT

A 76-year-old man presented with diarrhea, fever, and icterus of a couple of months' duration. He gave history of laparoscopic surgery for cholecystectomy with common bile duct (CBD) exploration about 9 months ago (for an impacted CBD stone). An anastomosis between the CBD and the duodenum had been performed laparoscopically. The patient had had an uneventful early postoperative course.

Two weeks after the operation, the patient started to show symptoms of cholangitis (with varying degrees of pain, icterus, and low-grade fever) intermittently. With each episode of recurrent symptoms, a course of oral antibiotics would alleviate his symptoms but the symptoms always

returned after discontinuation of the antibiotic. He had taken several courses of different antibiotics over the past few months. Two months earlier, he had developed diarrhea that was severe enough to make him feel weak. Because there was no response to wide-spectrum oral antibiotics, the patient was admitted to our hospital for further workup.

At presentation, he was an ill elderly man with low-grade fever (oral temperature, 38.3°C) and stable vital signs. He was mildly icteric. On examination of the abdomen, mild tenderness was found in the right upper quadrant and periumbilical region. Digital rectal examination yielded soft, greasy, and nonbloody stool. The patient's laboratory data are shown in Table 1. Inflammatory or infectious colitis was ruled out by stool examination. Toxin assay for *Clostridium difficile* was negative; besides, discontinuation of antibiotics (keeping in mind the possibility of pseudomembranous colitis) only aggravated the patient's condition. Liver function tests ruled out hepatitis and there was no history of transfusion during the operation.

In view of the high erythrocyte sedimentation rate (ESR), mildly elevated alkaline phosphatase, and positive SIRS, an infectious etiology was suspected and a sepsis workup was started. The chest X-ray was within normal limits. Abdominopelvic sonography showed no fluid collection in the abdomen. Upper gastrointestinal endoscopy was normal up to the mid-duodenum. Colonoscopy was normal too. A magnetic resonance cholangio-pancreatography (MRCP) was performed to look for bile duct injury [Figure 1] and this revealed mild dilatation of the intra- and extra-hepatic

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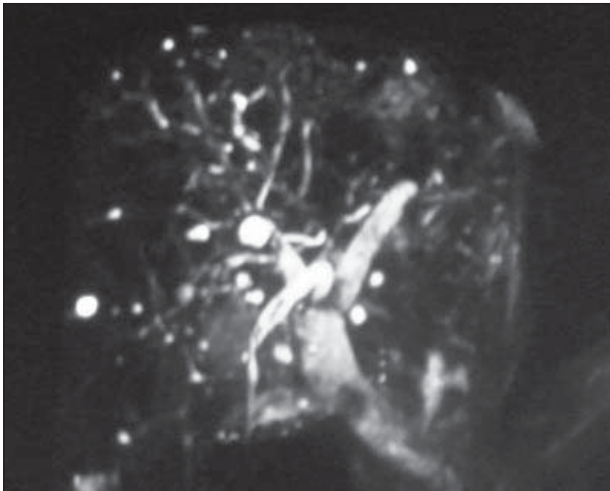


Figure 1: MRCP of the patient shows a dilated CBD and a filling defect inside it



Figure 2: Intraoperative photograph. The white arrowhead shows the site of anastomosis of the CBD to the colon which was taken down and repaired. The arrow shows the CBD defect after disruption of the anastomosis

Table 1: Laboratory data during sepsis workup

CBC	
WBC	4100 / μ l
Hb	10.4 g/dl
PLT	138000 / μ l
Na	144 mEq/l
K	3.2 mEq/l
BUN	16 mg/dl
Cr	0.8 mg/dl
BS	167 mg/dl
ESR	84 mm/hour
LDH	257 IU/l
Amylase	73 U/l
Alb	3.1 g/dl
AST	29 U/l
ALT	40 U/l
ALP	444 IU/l
Bil (T)	2.5 mg/dl
Bil (D)	0.9 mg/dl
INR	1.69
ABG	Mild metabolic alkalosis
Urinalysis	
SG	1018
pH	5
WBC	2-3
RBC	8-10
Epithelial cells	1-2
Bacteria	Neg
Blood cultures (twice)	Neg
Stool exam	Normal (except for fat globules)
Stool culture	Neg
Toxicology for <i>Clostridium difficile</i>	Neg

ducts; the CBD had a diameter of 17 mm and there was a focal (11 mm) filling defect in the middle part of the CBD. In view of these findings we suspected probable stricture at the anastomosis site, with resultant ascending cholangitis, and therefore decided to operate on the patient and to

reconstruct the anastomosis.

During the operation, we were surprised to find a ‘choledochocolostomy’ anastomosis instead of a choledochoduodenostomy [Figure 2]. The site of the colostomy was taken down and repaired in two layers. After irrigation of the right and left hepatic ducts, and ensuring that no stone was left in the CBD, an end-to-side choledochoduodenostomy was reconstructed. The patient had a satisfactory recovery after the operation and was discharged within a few days. After discharge, he came back for two follow-up visits (1 week and 4 weeks after discharge) and had no complaints. Diarrhea and fever had been completely controlled.

DISCUSSION

Major bile ducts injuries and anastomotic site strictures are among the most serious complications after laparoscopic and open cholecystectomies. They are reported to occur in less than 1% of these procedures.^[1] But an inadvertent anastomosis of the biliary tree to the colon (instead of a biliary-enteric anastomosis for biliary drainage) has not been reported in the literature to date. Our literature search only revealed infrequent reports of spontaneous or iatrogenic (not anastomotic but due to unwanted bile duct injuries) biliary-colonic fistulas with similar presentations to our patients. According to these reports the most common signs associated with bile drainage into the colon are diarrhea (often refractory and of steatorrhea type); weakness; choleric enteropathy; and recurrent jaundice, right upper quadrant pain, and fever (recurrent cholangitis).^[2-5] The cause of diarrhea (steatorrhea) is

fat malabsorption as well as increased load of bile acids in the colon, with an impaired enterohepatic cycle.^[5] Colonic bacterial flora can cause bouts of cholangitis which necessitate treatment with antibiotics.

The most sensitive and specific diagnostic tool for postcholecystectomy complications is MRCP.^[6,7] MRCP is the method of choice for the diagnosis of a biliary-colonic fistula though ERCP can also help in diagnosis.^[2-5] A barium enema may also reveal this unusual anatomical communication.^[5] In our case, MRCP was performed but was not diagnostic.

Management of biliary-colonic fistulas (and also biliary-colonic anastomosis) is primarily surgical. Diagnosis before surgery may not be easy. According to the literature, many of these fistulae were diagnosed only intraoperatively. However, a confirmed preoperative diagnosis permits at least colon preparation before surgery. Our experience in the management of biliary duct injuries has taught us that any patient with persistent symptoms attributable to the biliary system after a procedure on his or her biliary tree must be considered as having a complication (until proven otherwise) and would benefit from a detailed diagnostic workup (including MRCP).

The very rare complication reported here underscores the

importance of complaints of prolonged and refractory diarrhea besides the usual signs and symptoms of postcholecystectomy cholangitis.

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