

## Case Report

# Cholecysto-Anastomotic Fistula after Laparoscopic Right Hemicolectomy and Liver Resection

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**Abstract**

The case of a 76-year old patient is presented who underwent a simultaneous laparoscopic right hemicolectomy and non-anatomical laparoscopic liver resection of two liver metastases for a cT3N2M1 adenocarcinoma of the ascending colon. After an uneventful early postoperative course, the patient was readmitted with abdominal pain and fever owing to a cholecysto-anastomotic fistula, ultimately discovered on laparoscopic exploration. A laparoscopic cholecystectomy was performed with the suture of an anastomotic microleak and construction of a defunctioning ileostomy. The further postoperative course was uneventful.

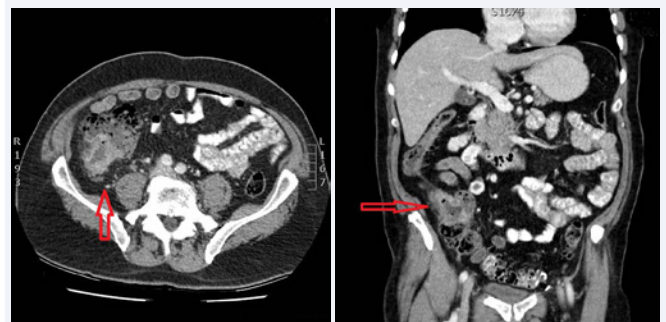
**INTRODUCTION**

We present the case of a 76-year old patient who developed a cholecysto-anastomotic fistula after simultaneous laparoscopic right hemicolectomy and non-anatomical liver resection of two liver metastases.

**CASE PRESENTATION**

A 76-year old male patient was diagnosed with an adenocarcinoma of the ascending colon with two synchronous liver metastases in segment 6, staged as cT3N2M1 (Figure 1A-B). We performed a simultaneous laparoscopic right hemicolectomy and a non-anatomical laparoscopic liver resection of the two liver metastases. After an uneventful early postoperative course the patient was discharged on the fourth postoperative day. On postoperative day 9, the patient was readmitted with high fever (>39°C) and a tender right upper abdomen. Biochemistry revealed increased inflammatory parameters with a white blood cell count of  $31 \times 10^9/L$  and C-reactive protein of 270 mg/L. An abdominal contrast-enhanced CT scan revealed a perihepatic collection at Morrison's pouch, highly suspicious for an early postoperative biloma (Figure 2). No free peritoneal air was detected. A CT-guided percutaneous catheter was placed. Drain output was purulent rather than bilious and cultures revealed presence of *Escherichia Coli* and *Enterococcus faecalis*. Despite initiation of IV Piperacillin-Tazobactam (3 times 4000 mgs daily), the patient's clinical status did not improve. He developed a new

fever up to 39.5°C with chills. A new contrast-enhanced CT-scan was performed revealing aerobilia and an air-fluid level in the gallbladder, not present on the previous CT-scan (Figure 3A-B). We decided to take the patient back to the operating room and performed a laparoscopic exploration. On exploration a cholecysto-anastomotic fistula was diagnosed originating from a tiny anastomotic insufficiency. A laparoscopic cholecystectomy was performed, the anastomotic microleak was oversutured and we additionally constructed a defunctioning ileostomy. IV antibiotics were continued for 7 days with clinical and biochemical improvement. The patient was discharged 18 days after the initial simultaneous colon and liver surgery.



**Figure 1** Pre-operative contrast-enhanced abdominal CT-scan. The red arrow shows the primary tumor in the ascending colon.

## DISCUSSION

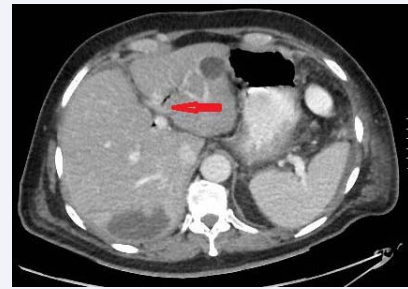
Aerobilia (or pneumobilia) is a condition that is often iatrogenic or traumatic in origin [1-3]. Aerobilia can frequently be seen after endoscopic sphincterotomy or surgical hepaticojejunostomy [1,3]. Otherwise, cholecysto-enteric fistulas have been described owing to acute or chronic cholecystitis or erosions from large gallstones, even presenting as gallstone ileus [4]. Aerobilia must be differentiated from portal venous gas. The latter is characterized by branching peripheral gas lucencies on



**Figure 2** Contrast-enhanced abdominal CT on POD 9 (on readmission), showing the perihepatic collection at Morrison's pouch (arrow). The stapler line at the segment 6 portal pedicle is indicated with an arrowhead.



**Figure 3a** Contrast-enhanced abdominal CT-scan on POD 11, showing an air-fluid level in the gallbladder (arrowhead) and dislocation of the percutaneous drain (arrow) resulting in recurrence of the collection at Morrison's pouch.



**Figure 3b** Contrast-enhanced abdominal CT-scan on POD 11, showing aerobilia in both the left and right biliary ductal system (red arrow).

abdominal CT scan, while biliary gas typically collects centrally around the liver hilum [1].

In our patient the cholecysto-anastomotic fistula may have been caused by a late anastomotic insufficiency forming a fistula to the gallbladder. Another more plausible explanation for our patient's condition may be that following serosal injury to the gallbladder wall a fistula may have formed to the anastomosis that was in immediate contact with the gallbladder.

We are unaware of earlier reports of cholecysto-anastomotic fistula in the surgical literature. We recommend performing cholecystectomy after manipulation of the gallbladder during liver resection combined with right hemicolectomy.

## REFERENCES

1. Abboud B, El Hachem J, Yazbeck T, Doumit C. Hepatic portal venous gas: physiopathology, etiology, prognosis and treatment. *World J Gastroenterol.* 2009; 15: 3585-3590.
2. Tanaka T, Kawashita Y, Kawahara D, Kuba S, Kawaraha Y, Fujisawa H, et al. Complete dissection of a hepatic segment after blunt abdominal injury successfully treated by anatomical hepatic lobectomy: report of a case. *Case Rep Gastroenterol.* 2011; 5: 125-131.
3. Sherman SC, Tran H. Pneumobilia: benign or life-threatening. *J Emerg Med.* 2006; 30: 147-153.
4. Costi R, Randone B, Violi V, Scatton O, Sarli L, Soubrane O, et al. Cholecystocolonic fistula: facts and myths. A review of the 231 published cases. *J Hepatobiliary Pancreat Surg.* 2009; 16: 8-18.

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