# **Case Report**

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# Cutaneous bronchobiliary fistula following laparotomy for ruptured hydatid cyst of the liver

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#### **ABSTRACT**

Cutaneous bronchobiliary fistula is a rare and an uncommon but severe complication of the hydatid cyst of the liver. Treatment has traditionally been surgical resection. We hereby describe a case of a 55-year-old male who had undergone exploratory laparotomy with peritoneal lavage for ruptured right hepatic lobe hydatid cyst 1 year back. During the post-operative course, the patient came to the outpatient department of our hospital complaining of leakage of purulent exudate through a cutaneous opening located above the umbilicus in midline, pain in the right hypochondrium radiating to the right hemithorax, malaise, fever and chronic productive cough. Fistulography revealed a convoluted cavity communicating with a residual cystic cavity on the right hepatic lobe with the right bronchial tree. We observed communication with the intrahepatic canaliculi. Computed tomographic scan revealed a fistulous tract on the anterior liver border through the abdominal wall. There were no post-treatment complications. The patient is asymptomatic.

Keywords: Bronchobiliary fistula, Hydatid cyst, Fistulography

#### INTRODUCTION

Cutaneous bronchobiliary fistula is an unusual post-surgical complication involving an abnormal communication of the bronchial tree with the biliary system to the skin. Currently, surgical excision is the treatment of choice. However, reoperations are often needed, and mortality rate is as high as 12%, consequently conservative treatment is recommended in all cases. Here we report a case of 55-year-old male who sought care for a cutaneous bronchobiliary fistula with leakage of purulent exudate through supraumbilical midline incision line cutaneous opening. This patient had undergone exploratory laparotomy for ruptured hydatid cyst of liver 1 year back.

#### **CASE REPORT**

A 55-year-male sought care to the outpatient department of our hospital with complaint of constant purulent exudative discharge through the supraumbilical midline cutaneous

opening for the last 1 year, pain located in the right hypochondrium radiating to the right hemithorax, malaise, fever, chonic productive cough since his surgery (Figure 1).

Physical examination revealed the presence of a fistulous orifice on the supraumbilical midline incision line with the leakage of purulent exudate. Chest X-ray showed right sided basal pleural effusion with parenchymatous consolidation that affected the right middle and lower lobe of the lung (Figure 2).

Fistulography revealed a convoluted cavity communicating with a residual cystic cavity on the right hepatic lobe with the right bronchial tree. It also communicated with the intrahepatic canaliculi. Computed tomographic revealed a fistulous tract through the abdominal wall on the anterior liver border (Figure 3).

Right lower thoracotomy was done, right lower lobe of the lung was densely adherent to the diaphragm that was



Figure 1: Discharging cutaneous sinus.



Figure 2: X-ray chest posterior anterior view showing R lower lobe consolidation.

meticulously separated and hemostasis was maintained. A bile stained cavity was found in right lower lobe of the lung that was extending into the right lobe of the liver through a defect in the diaphragm. The cavity contained bile stained laminated membrane. This membrane was remnant of primary ruptured hydatid cyst and was eroded through the diaphragm into the right lower lobe of lung which had resulted in biliary bronchial communication and was also connected with sinus opening in the anterior abdominal wall. Excision of bile stained cystic cavity with laminated membrane followed by irrigation was done, intercostal drainage tube inserted and no attempt was made to repair the right dome of diaphragm as it was densely adherent to the right lobe of liver (Figure 4).

Post-operatively, discharge from anterior abdominal wall subsided spontaneously.

## DISCUSSION

A bronchobiliary cutaneuos fistula is an uncommon entity with biliptysis being a pathognomonic sign. It is difficult to diagnose and requires a high clinical index of suspicion. The



Figure 3: Fistulogram showing afratous fistulous tract with cavity.



Figure 4: Dissected laminated bile stained fistulous tract with cavity.

fistula may be caused by liver abscess,<sup>2</sup> hepatic hydatids,<sup>3</sup> hepatic tumors, following radiofrequency thermal ablation of hepatic tumors, post liver resection, chronic pancreatitis and rarely as a late complication of transcatheter arterial embolization.

In most cases, they are caused by hepatic or subphrenic abscesses, resulting from different conditions. Liver abscess with or without biliary lithiasis<sup>4</sup> as the cause of bronchobiliary cutaneuos fistula has been reported in the literature. In our case, it was due to ruptured hydatid cyst of the liver. They usually present with chronic cough, biliptysis, fever, and pain that was observed in our case as well.

Bronchobiliary cutaneous fistula can be treated surgically or with fibrin sealant. We, in our case, opted for a single sitting surgical procedure as there was a foreign body in the form of remnant hydatid cyst laminated membrane and did not consider fibrin sealant treatment. Fibrin sealant is a viable alternative to surgical treatment of bronchobiliary cutaneous fistula. Surgery in the form of resection of the involved pulmonary tissue and interposition of viable

tissue between the lung and the fistulous tract is definitely invasive but provides a rapid resolution of the patients' problem.<sup>6</sup>

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#### REFERENCES

- 1. Prieto-Nieto MI, Pérez-Robledo JP, Alvarez-Luque A, Suz JI, Torres JN. Cutaneous bronchobiliary fistula treated with Tissucol sealant. Cardiovasc Intervent Radiol. 2011;34 Suppl 2:S232-5.
- 2. Rose DM, Rose AT, Chapman WC, Wright JK, Lopez RR, Pinson CW. Management of bronchobiliary fistula as a late complication of hepatic resection. Am Surg. 1998;64(9):873-6.
- 3. Tocchi A, Mazzoni G, Miccini M, Drumo A, Cassini D, Colace L, et al. Treatment of hydatid

- bronchobiliary fistulas: 30 years of experience. Liver Int. 2007;27(2):209-14.
- Gourgiotis S, Stratopoulos C, Moustafellos P, Dimopoulos N, Papaxoinis G, Vougas V, et al. Surgical techniques and treatment for hepatic hydatid cysts. Surg Today. 2007;37(5):389-95.
- 5. Pomeranz S, Constantini S, Umansky F. The use of fibrin sealant in cerebrospinal fluid leakage. Neurochirurgia (Stuttg). 1991;34(6):166-9.
- 6. Thanos L, Mylona S, Brontzakis P, Ptohis N, Karaliotas K. A complicated postsurgical echinococcal cyst treated with radiofrequency ablation. Cardiovasc Intervent Radiol. 2008;31(1):215-8.

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