



Ruptured Liver Abscess Presenting as Hepatobronchial Fistula - an interesting case report

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Abstract : Pleuro pulmonary amebiasis is a rare presentation of invasive amebiasis. Amebic liver abscess can present occasionally with bronchorrhea due to rupture across the diaphragm and formation of hepato bronchial fistula. Thoracic symptoms of cough and pleuritic pain associated with fever and right upper abdominal pain associated with tender hepatomegaly or intercostal tenderness will suggest the possibility of pleuro pulmonary involvement of liver abscess. Medical management of amebiasis with metrogyl is the primary treatment. Residual liver abscess and empyema of thorax if any will need percutaneous catheter drainage. The recovery is good and complete with minimal morbidity and mortality if diagnosed and treated early.

Keyword : Amebic Liver Abscess, Hepatobronchial Fistula, Pleuropulmonary Amebiasis

INTRODUCTION

Pleuro pulmonary amebiasis is an uncommon complication of Entamoeba Histolytica infection. Extra intestinal amebiasis occasionally presents as pleuropulmonary disease with few clues to suggest the presence of the underlying hepatic abscess. The pleuropulmonary disease occurs in 2-3% of the patients with invasive amebiasis and mostly associated with the liver abscess. We present a case who had presented with bronchorrhea as the initial presentation with an asymptomatic liver abscess.

CASE REPORT

25 years old male with no known medical co morbidities presented with right side lower chest pain radiating to the back for the past 10 days and dry cough for 7 days. He had a fall from a 2 wheeler before 10 days and was treated with antibiotics and analgesics. He was treated for typhoid fever 3 weeks ago. He was suspected to have pleurisy / liver abscess. In the scan room he had a bout of cough with copious yellow-brownish expectoration with mild drop in saturation. He was admitted for further evaluation. Investigations showed mildly elevated SGPT 61U/L, AG reversal with serum Albumin 3.2g/dl and elevated WBC counts (22.0x 10³/ul, N 86.6%). USG abdomen revealed 12.0 x 8.5cm well defined hypoechoic lesion with floating

internal echoes and no vascularity in the right lobe of liver with a small collection in the right subdiaphragmatic region. CECT of abdomen was planned for evaluation of possible hepatobronchial fistula.



Fig.1 Bile tinged bronchorrhea suggesting liver abscess

CECT abdomen revealed large abscess with air fluid level measuring 13x9x10cm, involving segment VIII of right lobe in subcapsular location. Linear tract was seen extending from the abscess through the right hemidiaphragm into the right lower lobe lung parenchyma, forming small focal abscess in lateral basal segment of right lower lung lobe. Lung abscess showed evidence of direct bronchial communication. Consolidation of the adjacent right basal lung segments were seen with no significant pleural collection. It was suggestive of liver abscess with hepato bronchial fistula. Ultrasound guided pig tail catheter drainage of the liver abscess was done. ELISA for Entamoeba was positive. Pus and blood cultures were sterile. The patient responded to PIG tail drainage, metronidazole and chloroquine. Cough stopped in a week. He was discharged with pig tail catheters in situ which were removed after 3 weeks. There were no further complications and he was asymptomatic during follow ups.

DISCUSSION

Pleuropulmonary amebiasis is the common and pericardial amebiasis is the rare form of thoracic amebiasis. Low socioeconomic conditions, malnutrition, chronic alcoholism, and ASD with left to right shunt are contributing factors to the development of pulmonary amebiasis. It commonly occurs in patients aged 20 to 40 years, with an adult male to female ratio of 10:1.7 The infection usually spreads to the lungs by extension of an amebic liver abscess. Infection may pass to the thorax directly from the primary intestinal lesion through hematogenous

spread. Lymphatic spread is one possible route. Lung is the second most common extra intestinal site of amoebic involvement after the liver. Hemoptysis is common. The diagnosis of thoracic amebiasis is suggested by the combination of an elevated hemi diaphragm (usually right), hepatomegaly, pleural effusion, and involvement of the right lung base in the form of haziness and obliteration of costo phrenic and costo diaphragmatic angles.² Infection usually extends to the thorax by perforation of a hepatic abscess through the diaphragm and across an obliterated pleural space, producing pulmonary consolidation, abscesses, or bronchohepatic fistula. Empyema develops when a liver abscess ruptures into the pleural space. Rarely, a posterior amoebic liver abscess can burst into the inferior vena cava and develop an embolism of the inferior vena cava and thromboembolic disease of the lungs with congestive cardiac failure or corpulmonale. Amebae might be found in aspirated pus or expectorated sputum. "Anchovy sauce-like" pus or sputum may be found. Presence of bile in sputum indicates that the pus is of liver origin.⁸ Anti-amoebic antibodies can be detected by ELISA, IFAT, and IHA. Amebic antigen can be detected from serum and pus by ELISA. Detection of *Entamoeba* DNA in pus or sputum by PCR is a sensitive and specific method. Pleuropulmonary amebiasis is easily confused with other illnesses and is treated as pulmonary TB, bacterial lung abscesses, and carcinoma of the lung. A single drug regimen with metronidazole with supportive therapy usually cures patients without residual diseases. Aspiration of pus from empyema thoracis may be needed for confirmation and therapeutic purposes. Three categories of pleuropulmonary involvement

1. Reactive inflammation of the pleura or lung,
2. Rupture of a hepatic abscess into the pleural space
3. Rupture of a hepatic abscess into the bronchial airways.

In pleura pulmonary amebiasis, the patients will complain of abdomen pain, weight loss, weakness and anorexia. Most symptoms are related to thorax. These include shortness of breath, cough and pleuritic chest pain.^{10,12} Three kinds of pleuropulmonary involvement can be distinguished in association with liver abscess, and in any individual patient there may be a progression of one complication to another. Radiographic findings of atelectasis or reactive pneumonitis may be present. In patients with pleuro pulmonary disease, a hepatic abscess actually erodes into the pleural space, the lung parenchyma or both. Rupture into the pleural space is signaled by an abrupt worsening of pleuritic chest pain and shortness of breath. On occasion, respiratory distress and even shock may ensue.¹³ A roentgenogram of the chest may show a massive pleural effusion, occasionally with mediastinal shift.¹³ The pleural fluid may be purulent or it may be greenish or dark brown, reflecting the presence of bile or digested liver tissue. Erosion directly into the lung parenchyma may occur with little involvement of the pleural space. Most frequently this involves the right lower and middle lobes.⁸ Rupture into a bronchus causes a dramatic clinical event with expectoration of dark-colored debris. Intense microscopic examination may show amoebae, but only in a small proportion of cases. A hepato bronchial fistula may lead to natural drainage of the liver abscess; alternatively, intrabronchial spread of this material may result in respiratory insufficiency. ¹² Chest roentgenograms show consolidation or abscess, often with a distinctive tenting of the diaphragm,^{9,10} sometimes called the Mexican hat sign. The possibility that amoebae might reach the lung via a hematogenous route⁸ arose because intra thoracic disease was identified in some patients who did not have apparent liver involvement.

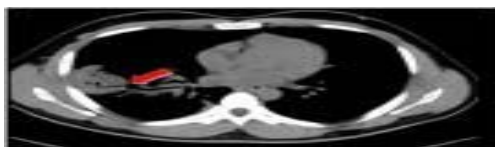


Fig .2 Hepato bronchial fistula tract

The initial radiologic approach to diagnosis often includes a chest radiograph. A chest radiograph may show an elevated hemi-diaphragm, pleural effusion, atelectasis or right lobar consolidation, but is normal in over half of patients.⁴ The diagnosis of hepatic abscess has been aided greatly by the increase in availability of ultrasonography and CT. Both are sensitive tests for the detection of hepatic abscess and have contributed to the trend of reduced morbidity.¹ The preferred medical treatment is with metronidazole.^{3,5} Rupture of hepatic amoebic abscess into the pleural space with empyema requires pleural drainage in addition to medical therapy and drainage of liver abscess.



Fig.3 Trans diaphragmatic hepato bronchial fistula tract.

In contrast, rupture into the bronchus may provide spontaneous drainage so that only medical therapy is needed. Recovery from amebiasis in all three categories is generally complete. Morbidity and mortality increase with failure to correctly identify amoebic infection of the liver as the underlying cause.

CONCLUSION

Isolated pleura pulmonary amebiasis is easily confused with other illnesses and is treated as pulmonary TB, bacterial lung abscesses, and carcinoma of the lung. Presence of chest symptoms like pleurisy, cough must lead to a suspicion of pleura pulmonary amebiasis in patients with a diagnosed liver abscess. Bronchopleural fistula can have a dramatic presentation with acute bronchorrhea. Bronchial communication can spontaneously drain the thoracic and to an extent the underlying liver abscess; however respiratory compromise can rarely be life threatening due to bronchial obstruction. Radiologically guided catheter drainage of the liver and thoracic abscess along with metronidazole is the optimal treatment leading to complete recovery. Morbidity and mortality increase with failure to correctly identify amoebic infection of the liver as the underlying cause.

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