

# A Case Report - Amoebic Liver Abscess Ruptured into Lung

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**Abstract:** We report a case of amoebic liver abscess (ALA) in a 24-year-old Male who presented with fever, pain in Right Hypochondrium, pain referred to the right shoulder, productive coughing, lethargy and past history of diarrhea. Ultrasonography, chest X-Ray and CT scan revealed one very big Amoebic Liver Abscess in the posterior segment of right lobe of liver which has ruptured into the lung parenchyma of right lung in basal region. Intravenous Metronidazole was started and patient was operated and patient recovered well due to timely intervention.

**Keywords:** Ruptured amoebic liver abscess into lungs

## 1. Introduction

Amoebiasis is endemic in the tropical and subtropical regions of the world especially in developing countries. It is the third most common parasitic cause of mortality after malaria and schistosomiasis. Amoebic liver abscess (ALA) is the most common extraintestinal manifestation of invasive amoebiasis and occurs in 3-9% of patients with intestinal amoebiasis. It presents with high grade fever, right upper quadrant pain, leukocytosis and raised erythrocyte sedimentation rate. Jaundice and derangement of liver enzymes can be present. It can rupture into the pleura to cause acute respiratory distress. It can rupture into the pericardium as well as into the peritoneal cavity. Increase in morbidity and mortality is attributed to low index of suspicion of ALA causing a delay in diagnosis. The prognosis of ALA improves with early diagnosis and prompt treatment.

## 2. Case Report

A previously healthy 24-year-old Male resident of Phagi, Jaipur, Rajasthan, India presented with Pain in the Right Shoulder since 1 month, fever with chills and rigours on and off for 25 days duration associated with right hypochondriac pain, anorexia and on and off vomitings for 7 days and productive cough containing pinkish colour contents for 4 days. There was a history of diarrhea 15 days prior to starting of these presentations. On physical examination, the patient was fully conscious, slightly tachypnoeic, febrile, tachycardiac, but blood pressure was normal and oxygen saturation was 98%. The abdomen showed fullness in right upper abdomen, guarding and tenderness was present in the right upper abdomen. Respiratory examination revealed decreased air entry in right lower lung.

On admission, total white cell count was 14,000 with neutrophilia, hemoglobin 11.0 g/L, platelet normal, PT INR was bit raised to 1.54 and rest of the investigations were within normal limits even Alkaline phosphatase, hepatic transaminases, bilirubin level and blood gas were normal. The patient was given intravenous boluses of resuscitation fluid to correct dehydration.

Chest Xray showed effusion in Rt lower zone (Fig1) for which Intercostal drain was put (Figure 2).



Figure 1: Right Basal effusion

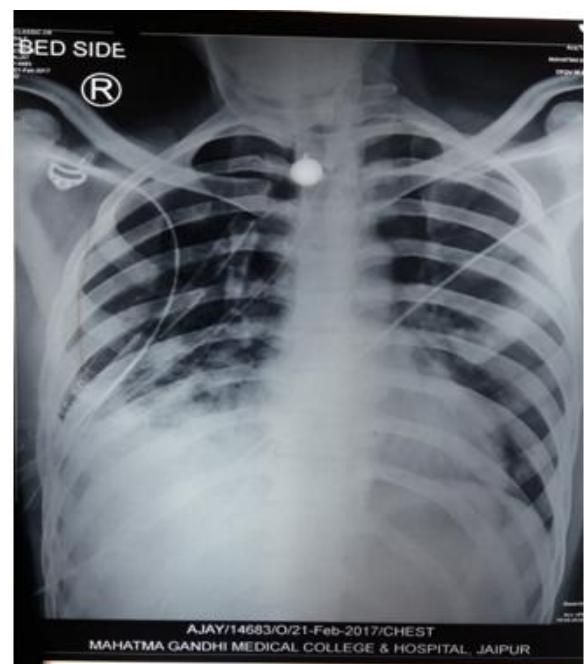
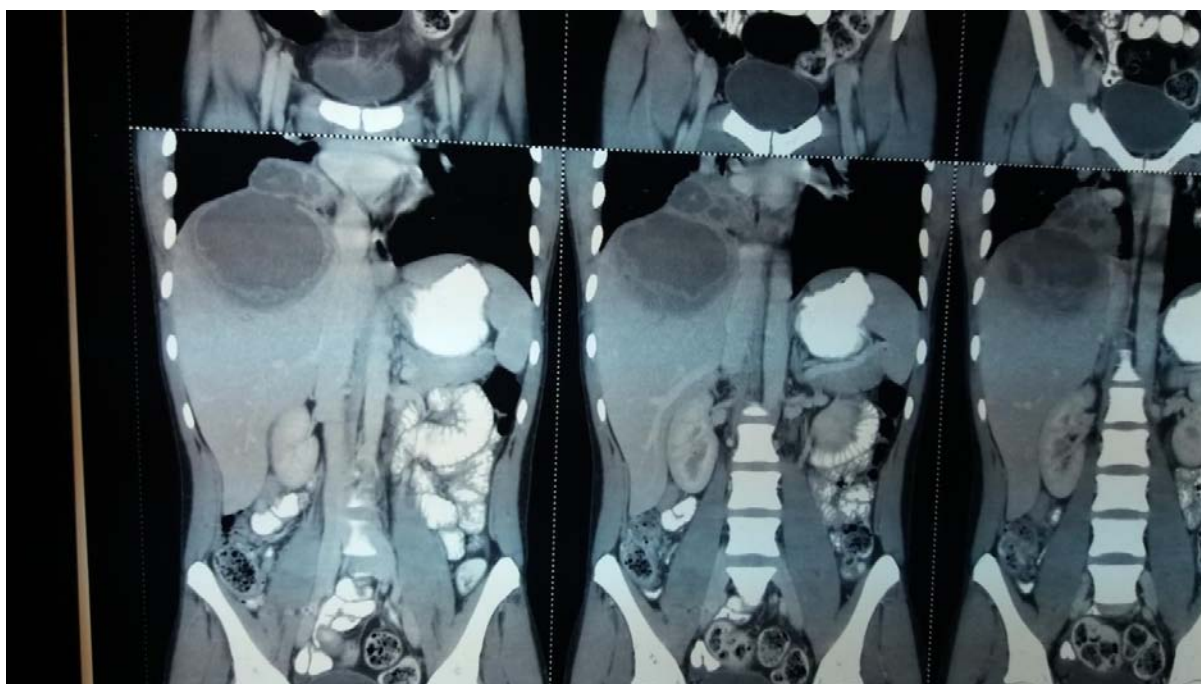
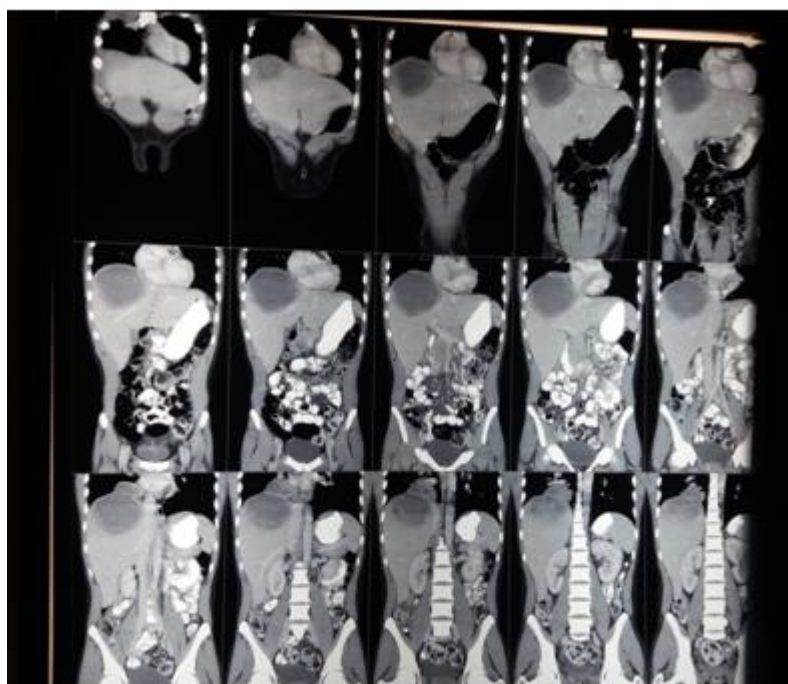


Figure 2: Intercostal Drain Is seen in situ

CT Scan (Fig 3 and Fig 4) was done which revealed Liver abscess right lobe with perforation into chest and hepatomegaly.



**Figure 3:** CT Scan showing the large liver abscess which has ruptured into the lung cavity with a rent can be seen in the diaphragm



**Figure 4:** CT Scan showing large Liver Abscess in the right lobe of the liver

He was subsequently taken for Exploratory Laparotomy

Operative Findings were-Hepatomegaly with Big abscess in the segment 7 and 8 of the liver along with very dense adhesions with diaphragm and with opening of the abscess cavity towards the superior surface that is towards diaphragm . Abscess was opened; around 500 ml of brownish material with pus mixed was evacuated. Cavity

was cleaned, deroofed and no biliary communication was noted. A rent was noted in the diaphragm through which the abscess has ruptured into the pleural side. A Chest Drain was put in pleura to take care of the pleural component.

The postoperative diagnosis was same that is Liver Abscess which has ruptured into lungs and the patient was shifted to intensive care unit and was kept in prop up position to avoid

dissemination of the ruptured material into lung parenchyma. Post operatively patient recovered well and chest radiograph also showed improvement and intercostals chest tube was removed on post op day 2 and the patient was shifted to ward. Subsequently abdominal drain was removed and patient was subsequently discharged in healthy condition.

### 3. Discussion

Amoebiasis is a major parasitic infection in developing countries. Amoebiasis is a common cause of recurrent diarrhoea and bloody mucoid stool. An estimated 40000–100 000 people die every year from amoebiasis worldwide. With medical treatment, the death rates are between 1 and 3%. Transmission is usually via contaminated food or water but can be associated with sexual contact through faecal oral contact. Development of amoebiasis usually starts with the ingestion of faecally contaminated water or food containing *Entamoeba histolytica* cysts. The initial *E. histolytica* infection causes acute amoebic colitis. Typical symptoms include abdominal pain and fever. Abdominal pain is reported to be present in 98% and fever in 74% of the cases. A history of diarrhoea is present in 20–30% of the cases. Hepatomegaly and tenderness in the right upper quadrant of the abdomen (over the liver) are the most frequent physical signs. Other pathogenic spread is secondary to the development of colonic amoebiasis and can affect multiple systems leading to liver abscess formation, hepatopulmonary fistula, amoebic pericarditis or brain abscesses. In 90% of cases, the infection is asymptomatic and self-limiting. Around 10% of the cases show invasive disease, and less than 1% of the cases show extraintestinal disease. Liver abscess formation is the commonest extraintestinal manifestation, most commonly developing in the right lobe with characteristic 'anchovy-sauce' pus.

The diagnosis of amoebiasis is based on:

- Direct microscopy of the stool sample for trophozoites.
- Enzyme immunoassay (EIA) kits for the detection of faecal amoebiasis (the parasite will not be found in the stool once disease is extraintestinal).
- Identification of the parasite in liver abscess aspirate (20% sensitivity); however, PCR on the aspirate can detect *E. histolytica* with a sensitivity of 83%.
- Diagnostic serology screening with the latex agglutination test: rapid test with a sensitivity of 98% and specificity of 96%.
- Detection of antibodies by IFA detection, indirect haemagglutination or gel diffusion precipitation tests.

A non-invasive diagnostic test for amoebic liver abscess is required; amoebic and bacterial abscesses can appear identical on ultrasound scans or CT. IFA titre of 16 or higher is diagnostic. The test will be positive if tissue invasion has occurred. No rise is found in patients who have acute amoebic dysentery or are asymptomatic cyst passers. Conversely, significant titres are found in patients with active hepatic amoebiasis. Sensitivity and specificity are >95%. Antiamoebic activity is almost exclusively confined to IgG autoantibodies. Serological testing demonstrates the presence of antiamoebic antibodies and is positive for most

patients with an amoebic liver abscess. However, in individuals from endemic areas, it can remain positive for antiamoebic antibodies for several years after an infection. The differentials would include hepatocellular carcinoma, hepatic metastases and pyogenic abscess. It should also be remembered that certain patient groups like the elderly and the immunosuppressed may not always display a response to infection, for example, with a fever. If anyone has a history of travel to an endemic area with compatible symptoms, there should be a high index of suspicion and appropriate serological testing should be undertaken.

### 4. Management

Oral amoebicidal drugs are the first line of treatment for amoebiasis with uncomplicated amoebic liver abscess. Metronidazole remains the drug of choice. The efficacy of metronidazole as an amoebicide shows a cure rate of 90% and no resistance is yet to be observed. A course of 750-800 mg three times a day for 7–10 days is recommended. Abscesses smaller than 5 cm in diameter respond better to metronidazole treatment. A course of metronidazole and diloxanide furoate is recommended for the pharmacological management of the condition. This is because a tissue agent, metronidazole, treats the invasive amoebiasis and then a luminal agent like diloxanide furoate eliminates any intraluminal cysts. A study showed clearance of the parasite with the above combined therapy in a group of 34 patients with amoebiasis to be 100%. Percutaneous needle aspiration and/or catheter drainage are the invasive alternatives. Routine aspiration is not recommended in most cases; however, aspiration may be considered especially if the abscess is large, complicated or unresponsive to pharmacological management. Some authors suggest that only abscesses of less than 5 cm will respond to medical treatment; thus, larger abscesses should undergo aspiration. Patients with aspirated abscesses were shown in general to stay longer in hospital irrespective of their abscess size, suggesting that aspiration and not solely abscess size was the factor most influencing hospital stay. If both pharmacological management and percutaneous needle aspiration fail to treat an amoebic liver abscess, treatment with USG or CT-guided catheter drainage is indicated. Overall, the indications for catheter drainage include failure of medical therapy within 48–72 h, an abscess cavity of >5 cm with a thin rim (<1 cm) of liver tissue around it on ultrasound and a left lobe abscess. Surgical open drainage is only indicated for patients with a complicated amoebic abscess, such as development of a secondary infection and peritonitis with or without perforation or abscess which has ruptured into pleura or lung parenchyma or the abscess which has ruptured into pericardium.

### 5. Conclusion

This case was different with regard to disease presentation in the form of hepatopulmonary fistula. The patient had symptoms of pain in the right shoulder and productive cough, with history of preceding diarrhoea. It is important to be aware of the epidemiology of the disease, and to relate it to patients presenting with symptoms suggestive of amoebiasis. It is advised that medical management is first



line, and only with failure to improve on medical management should more invasive management methods be used. This was a case of secondary complication of amoebic liver abscess in the form of hepatopulmonary fistula and all cases with secondary complications should undergo surgical intervention as early as possible before the condition of patient deteriorates.

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