

An Unusual Case of Ruptured Amoebic Liver Abscess into the Pericardium via Hepato Pericardial Fistula

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Abstract Diagnosing a rare disease is challenging but unravelling the rare findings of a common disease is motivating! One such common disease dealt in the case report below is Amoebiasis. Amoebiasis is a major public health problem worldwide. Mortality due to amoebiasis is mostly by extra intestinal infections, amoebic liver abscess being the most common one. Overall, 10% of the world's population is infected with *Entamoeba histolytica* (*E. histolytica*) but out of this only 1% becomes symptomatic. Nearly 20% of the Indian population show manifestations of the disease. With this background epidemiological prevalence, we present an unusual case of a 30-year old male with a ruptured amoebic liver abscess into the pericardium.

Keywords: amoebiasis, liver abscess, pericardial fistula, anchovy sauce

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1. Introduction

The most common presentation of Amoebiasis is Amoebic Dysentery. Due to the tissue invasiveness of the causative organism, it is also known to cause extraintestinal manifestations like amoebic liver abscess. The incidence of amoebic liver abscess formation is (3-9)% of all cases of amoebiasis [3]. Amoebic liver abscess may rupture into pleura, lungs, pericardium, peritoneum or brain. The incidence of hepato-pericardial fistula leading to pyopericardium is extremely rare. Only 27 such cases have been reported worldwide till date. We report a case of young male presenting with ruptured amoebic liver abscess into the pericardium.

2. Case History

A 30-year-old male, chronic alcoholic, without any particular pathological antecedents, presented to the casualty with a history of retrosternal, dull aching chest pain for 3 days which was gradually progressive thus, incapacitating him to walk or sit comfortably. The history mimicked an acute coronary event, as the pain was also associated with dyspnea and palpitation. On general examination, his Heart rate was 130 beats/min and respiratory rate was 30/min with a low volume pulse and blood pressure of 90/60 mmHg. His Jugular Venous Pressure (JVP) was high and Kussmaul's sign was positive. Cardiovascular examination showed

muffled heart sounds on auscultation. On Abdominal examination, he had severe right hypochondriac tenderness and a palpable Liver (Liver span - 17cm).

His ECG showed diffuse ST segment elevation in all the limb leads and chest leads, not pertaining to any single coronary arterial territory involvement, as shown in the figure below (Figure 1).

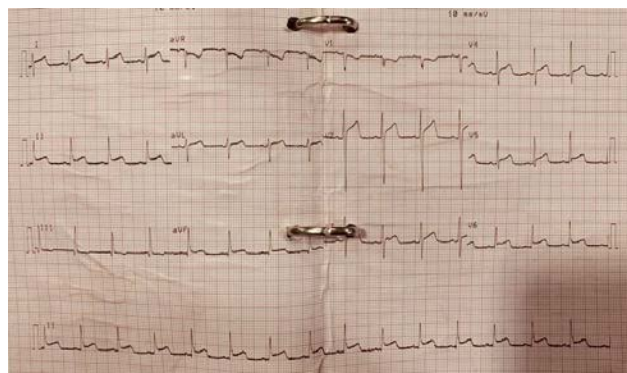


Figure 1. 12-Lead ECG

The qualitative troponin I test was negative. Emergency Bedside echocardiography showed early signs Cardiac Tamponade with preserved left ventricular systolic function and no regional wall motion abnormality.

The patient was immediately taken up for pericardiocentesis under fluoroscopic guidance and 700 ml of thick dark chocolate brown fluid was aspirated, as shown in the figure below (Figure 2). The aspirate was sent for microbiological analysis. The laboratory values are as shown below (Table 1).



Figure 2. Aspirated fluid

Table 1. Laboratory Investigations

Parameters	Normal Values	Observed values
Hemoglobin	12 - 16.2 g/dL	11.9
Total Leucocyte Count	3540 - 9060 /cmm	18560
Platelet Count	165000 - 415000/cmm	263000
Hematocrit	35.4 - 46.4	35.9
Mean Corpuscular Volume	80 - 96 fl	70.9
Urea	7 - 20 mg/dL	19
Creatinine	0.5 - 1.2 m/dL	0.5
Serum Sodium	136 - 146 mEq/L	127
Serum Potassium	3.5 - 5.5 mEq/L	3.9
Liver Function Test		
1) Total Bilirubin	0.3 - 1.3 mg/ dL	1.2
2) Direct Bilirubin	0.1 - 0.4 mg/dL	0.5
3) Indirect Bilirubin	0.2 - 0.9 mg/dL	0.7
4) SGOT	12 - 38 U/L	42
5) SGPT	7 - 41 U/L	56
6) Alkaline Phosphatase (ALP)	33 - 96 U/L	104
7) PT INR		1.2
Antinuclear Antibodies		Negative
ASPIRATE ANALYSIS		
1) Sugar		<20 mg/dL
2) Proteins		5.4 gm/dL
3) Total Cells		90%
a) Polymorphs		10%
b) Lymphocytes		Plenty RBCs Moderate Polymorphonuclear cells
c) Red Blood Cells		with Gram positive Cocci
4) Gram stain		Negative
5) AFB stain		Negative
6) CB NAAT		Negative
7) Cytology		No evidence of malignant cells
8) Routine Culture & Sensitivity		Sterile

On the second day since admission (post procedure), he complained of severe breathlessness. The repeat echocardiography revealed recurrence of tamponade. A pigtail drain was placed in situ which drained at least 600 -700 ml aspirate per day.

Based on the cues from above findings, hunt for the primary source of abscess began. Contrast Enhanced

Computed Tomography (CECT) Chest, Abdomen & Pelvis revealed a subdiaphragmatic collection (151 mL) indenting the left lobe of liver inferiorly and superiorly communicating the pericardial space. Other findings were mild ascites, mild hepatomegaly, moderate bilateral pleural effusion, mediastinal and abdominal adenopathy and gross pericardial effusion.

All the test results raised the suspicion of an amoebic liver abscess rupture into the pericardium via a hepato-pericardial fistula as the closest diagnosis. It was confirmed by positive Amoebic serology.

Eventually, the patient was started on Intravenous Metronidazole at a dose of 2 g/day in divided doses for next 14 days. He was also started on enzymatic preparations of trypsin, chymotrypsin and Serratiopeptidase to subside the associated inflammation. On the seventh day since admission, he started showing signs of recovery. His vital parameters normalized, and the drain collection gradually decreased to nil amount by the tenth day since admission. The drain was removed on the twelfth day and he was discharged from the hospital with complete recovery. He regularly follows up in the Medicine Outpatient Department (OPD) every 15 days.

3. Discussion

Over the past years, it has been observed that Amoebiasis is a relatively benign condition with no symptoms unless intestinal involvement turns predominant. The strain virulence, environment, host's genetic susceptibility, immune status, age, and gender determine the prognosis of the illness [4].

A case of Ruptured Amoebic Liver Abscess presenting as Cardiac Tamponade was reported recently that presented with deranged Liver function and gradually progressed to bilateral empyema. Eventually, bilateral pigtail drains were inserted through the chest wall and Cultures demonstrated superadded *Acinetobacter baumannii* infection. The medical management revolved around Metronidazole covered by restricted Antibiotics like Colistin [5].

Two large case series of hepatic amoebic abscesses have been published. One spanning over 18 years by Carlos *et al.* examined 501 cases of amoebic liver abscess. There were 326 cases of rupture through the diaphragm with 5 cases (0.01%) rupturing into the pericardium and 1 case rupturing into both pleural and pericardial cavities. The second such study from China by Meng *et al.* reported 503 cases of amoebic liver abscess over 21 years [6].

Treatment of amoebic liver abscess depends on the severity at presentation and on the associated complications. Most early, small, and uncomplicated abscesses can be treated by medical therapy alone. Drainage when required has been done in different ways according to the presentation of the patient [7,8]. Cases of pericardial rupture of an amoebic liver abscess developing cardiac tamponade similar to this case and relieved by pericardiectomy have been reported [8]. On the other hand, intra-pericardial ruptures have been managed only by percutaneous drainage when emergency intervention is not necessitated by development of cardiac tamponade [9].

Therapeutic aspiration by imaging-guided percutaneous interventions (needle aspirations, pigtail catheters) of liver abscess should be contemplated in a patient with a high risk of rupture that includes large abscess (cavity diameter > 5 cm), left lobe abscess due to risk of rupture into the pericardial sac, and liver abscess resistant to 5-7 days of medical management [10].

4. Conclusion

Amoebic Liver abscess has been shown to develop into unexpected complications which may require aggressive management. Rapid diagnosis of the disease is not just sufficient. Early treatment and regular follow up can help predict these complications at an earlier stage thus warranting the desired mode of management and saving lives of many! Despite the disease being a relatively benign condition, late diagnosis may create heavy casualties which may be life threatening. This case highlights one such catastrophic complication of untreated hepatic amebiasis presenting with cardiac tamponade.

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