

Original Research Article

Audit of patients with ruptured amoebic liver abscess and outcome of surgical versus non-surgical treatment

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ABSTRACT

Background: Amoebic liver abscess (ALA) is a common infection caused by parasite *Entamoeba histolytica* and is one of the leading causes of death in tropics. 10% of world population is infected with *E. histolytica*. It is highly endemic in India. This is a retrospective observational study conducted from July 2011 to November 2013. Aims and objectives are to study (1) Demographic, clinical features, treatment given and outcomes. (2) Compare outcome between surgical versus non-surgical methods (3) Assessing the complications of ruptured amoebic liver abscess.

Methods: Retrospective observational study of patients with ruptured amoebic liver abscess presenting to our institute (a tertiary referral centre). Details of demographics, clinical features, imaging findings were recorded. Also details of procedure, complications and outcome of surgical or non-surgical methods were recorded. Univariate analysis will be done applying 't' test. Data will be analyzed using SPSS software.

Results: Pain in abdomen and tenderness was the most common presentation of patients (100% cases). Right lobe of liver was involved in 83.3% cases. Pigtail catheter drainage was the most common treatment modality given to patients (63.3% cases). Following rupture, pleural effusion was the most common complication noted in our study. Common sites for perforation include pleural cavity or bronchial tree (72%). The mean duration of stay in ward was 9.8 days. Zero percent mortality in patients who received non-surgical treatment compared to 40% mortality in patients treated surgically (2 out of 5).

Conclusions: This study concluded that there is significant mortality in patients of ruptured amoebic liver abscess all associated with surgical intervention compared to non-surgical measures. Surgery is reserved for cases of generalized peritonitis or of superadded infections not responding to non-surgical measures with guarded prognosis.

Keywords: *Entamoeba histolytica*, Amoebic liver abscess, Pig-tail catheter drainage, Ruptured amoebic abscess

INTRODUCTION

Amoebic liver abscess (ALA) is a common infection caused by parasite *Entamoeba histolytica* (*E. histolytica*), which is capable of invading virtually every organ in the human body.¹ ALA is the third leading cause of death due to parasitic diseases after malaria and schistosomiasis.² 10% of world population is infected with *E. histolytica*.³ *E. dispar* is 10 times more common. Among those

infected with *E. histolytica*, 40 million develop invasive disease and 40000 deaths occur annually.

Mode of transmission is mainly by ingestion of food or drinks contaminated with cysts of *E. histolytica* and by faeco-oral contact. The high risk groups are travelers, immigrants, immunocompromised individuals and homosexuals.

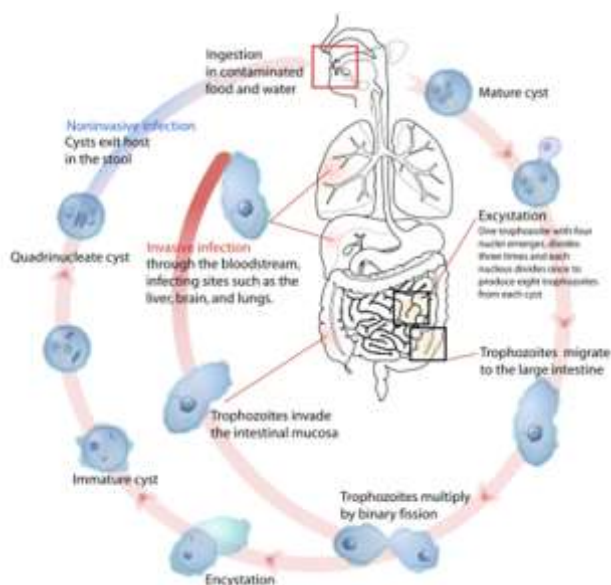


Figure 1: Life cycle of *Entamoeba Histolytica*.

Invasion occurs by penetration of intestinal mucosal barrier by trophozoites, which then enter the circulation and carried to liver via portal circulation. Amoebic abscesses can occur in any part of the liver, but are commonly seen in postero-superior quadrant of right lobe of liver due to the streamline flow from portal vein. Most amoebic liver abscesses are solitary. About 23%-37% of abscesses are multiple.⁴

The liver abscess has a three layered capsule: (1) Central necrotic cytolysed zone (2) Intermediate zone-degenerated cells with few WBCs, RBCs, and occasional trophozoites of *E. histolytica* and (3) Peripheral zone-congested capillaries with various degree of necrosis of hepatocytes. Amoebae can be seen multiplying in this area.

The contents of the abscess have been described as resembling anchovy sauce because of the chocolate brown color. Generally, the abscess is bacteriologically sterile. Secondary bacterial invasion of an amoebic abscess fluid reveals granular eosinophilic debris with no or few cells.

The main features are fever with chills and rigors with right hypochondriac pain. Other features are jaundice, diarrhea and respiratory problems. Peritoneal rupture causing peritonitis, thoracic and pleuro-pulmonary rupture, pericardial rupture, hemobilia, liver failure, brain metastasis etc. Diagnosis is made by USG, CT scan, liver scan and by serological examinations.

Amoebic liver abscesses can be treated in 4 ways; (1) *Medical management*: Metronidazole, chloroquine, diloxanide furoate and emetine, (2) *Percutaneous intervention* along with medications (Percutaneous aspiration of the abscess/ percutaneous catheter drainage of the abscess) and (3) *Surgical management*: for free perforation in peritoneal or pleural cavity, erosion into surrounding organs, septicemia and failure of medical treatment.

Despite improvement in sanitation, modern anti-amoebic drugs and advancement in percutaneous drainage of abscess, ALA continues to have high incidence and is endemic in India. This study focuses on the current status of this disease, its management modalities and outcomes.

METHODS

This is a Retrospective observational study of patients with ruptured amoebic liver abscess presenting to our institute (a tertiary referral centre). All diagnosed cases of ruptured amoebic liver abscess based on radiology and laboratory investigation were included in the study. Details of demographics, clinical features, imaging findings were recorded. Also details of procedure, complications and outcome of surgical or non-surgical methods were recorded. Univariate analysis will be done applying ‘t’ test. Data will be analyzed using SPSS software.

RESULTS

The total numbers of patients in our study are 30. The mean age was 47 years.

Apart from this diarrhea, coughing and vomiting were also present. Fever, abdominal pain and hepatomegaly were presenting complaints in majority of the patients.

Table 1: Presenting symptoms.

Symptom	Present	Percentage (%)	Mukhopadhyay M et al
Pain	30	100%	83%
Fever	26	86.7%	80%
Vomiting	13	43.3%	-
Cough/pleurisy	9	30%	26.4%
Diarrhoea	16	53.3%	-

Most common complications other than ruptured liver abscess was pleural effusion (16 patients), septic shock (3

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Table 2: Complications seen in patients with ruptured amoebic liver abscess.

Complication	Frequency	Percentage	Mukhopadhyay M. et al
Pleural effusion	16	53.3	33.34%
Septic shock	3	10.0	-
No complication	11	36.7	-
Total	30	100.0	72

In our study, USG guided percutaneous aspiration was performed in 5 patients amongst which 4 later required percutaneous catheter drainage.

In all our 24 patients who underwent either aspiration or catheter drainage without surgical intervention had good clinical recovery in the form of subsidence of symptoms and decrease in WBC counts. The mean duration of stay in ward was 9.8 days. In our study 10F catheter has been found sufficient to drain in majority of patients. In our study bile leak through the catheter occurred in two patients who had undergone percutaneous catheter drainage (6.6%).

In our study, one of the two patients who underwent surgery succumbed to septicaemia leading to mortality (3.3%).

Table 3: Results of surgical versus non surgical treatment in RALA.

Intervention	Discharged		Total
	Yes	No	
Surgical	Laparotomy		
	Abdominal drain	3	2
	Under anesthesia		
Non-surgical	US guided		
	Aspiration	25	0
	Pig-tailing		
	Medical Intervention		
Total	28	2	30

DISCUSSION

The mean age was 47 years. It is more common in males, similar to Sarada et al, where in the male is to female ratio was 19:45.⁵ Amoebic liver abscess occurs in all age groups and common mode of transmission is by contaminated food and water. It is a disease commonly seen in the lower class and lower middle class of the society with poor cooking habits. Male preponderance can be due to various factors like travelling to endemic areas, outside food, chronic alcoholism.

Fever, abdominal pain and hepatomegaly were presenting complaints in majority of the patients with amoebic liver abscess comparable to study by Mukhopadhyay M. et al.⁶ Most common complications other than ruptured liver abscess was pleural effusion which is comparable to study conducted by Mukhopadhyay M. et al.

Amoebic liver abscess is a common extraintestinal manifestation of amoebiasis in our country caused by *Entamoeba histolytica*. In our study, we compared the role of surgical versus non-surgical interventions. We have used metronidazole, either orally or intravenously, in our study in view of its easy availability. Ralls et al and Sharma et al have doubted the role of interventions in ALA unless complicated.^{7,8} In our study, medical management alone was successful in 1 out of 30 patients. We felt the need for interventions forecasting speedy recovery.

According to literature, positive responses to metronidazole are seen by third day of treatment.^{9,10} At 5 days, an 85% cure rate is achieved, and this response may be increased to 95% by 10 days. Following medical therapy the time for resolution of amoebiasis is long and it usually takes months for the abscess to resolve. Ralls et al noted complete sonographic resolution of ALA over a mean period of 7 months after starting medical therapy.⁸

Ramani et al have been advocates for percutaneous aspiration in 35% of patients in their study with excellent results. They resorted to aspiration in patients of large abscess (>6 cm), high fever, toxemia, no response to medical treatment for confirmation of diagnosis.¹¹ Wienke et al recommended percutaneous aspiration in patients who have no clinical response to drug therapy within 72 hours.¹² Saraswat et al had used 8F catheter or 12F sump catheter in their study.¹³

In our study, one of the two patients who underwent surgery succumbed to septicaemia leading to a mortality (3.3%), low compared to reported rate of 11.4%.¹⁴ The probable reasons for difference in mortality could be patient factors apart from early diagnosis and better OT facilities.

CONCLUSION

The ruptured amoebic liver abscess is a serious complication of hepatic amoebiasis. It primarily affects the middle aged men. This study concluded that there is significant mortality in patients of ruptured amoebic liver abscess all associated with surgical intervention compared to non-surgical measures. Surgery is reserved only for cases of generalized peritonitis or of superadded infections not responding to non-surgical measures with guarded prognosis.

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Ethical approval: The study was approved by the institutional ethics committee

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