

**Original article**

**A clinical study on amoebic liver abscess**

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**Abstract:**

**Background:** Amoebic liver abscess presents with severe pain and high grade fever and if not diagnosed and treated promptly, may lead to complications and mortality. **Aim and objectives:** The objective of the present study was to estimate the incidence, need for aspiration and prognosis. The diagnosis was based on clinical features, positive Elisa test, ultrasonography, aspiration of anchovy sauce from the liver lesion, isolation of E. Histolytica (cyst/trophozoite) from the stool of the patient. **Result:** We had 65 cases in the study. There were 52 males & 13 females with a ratio of 4:1. Solitary abscess was found in 48(73.8%) patients which are located as follows; right lobe(43), left lobe(2) and in both lobe(3). 9% were aspirated at presentation due to their size or position. Only 4 (2%) were aspirated at first follow-up on third day due to non resolution of pain or fever or increase in size. All the patients are responded to standard treatment of metronidazole. Amoebic liver abscess is a common diagnosis in our setup. **Conclusion:** Clinical background and sonogram give a reasonable suggestion about amoebic etiology. If initial aspiration is not indicated due to size larger than 10 cm or proximity to surface, conservative treatment with oral or intravenous metronidazole is successful.

**Keywords:** amoebic liver abscess; E. histolytica; metronidazole; percutaneous aspiration

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**Introduction:**

About 10% of the world population is infected with E. Histolytica where poor sanitation and crowding compromise the barriers to contamination of food and drinking water with human feces. Amebiasis is the third most common cause of death from parasitic diseases. About 90% of infections are asymptomatic, and the remaining 10% produce a spectrum of clinical syndromes ranging from dysentery to abscesses of the liver or other organs. Approximately 1,00000 people die every year from amoebic colitis and amoebic liver abscess (ALA)<sup>1</sup>. Risk Factors for ALA are Alcoholism, diabetes, Corticosteroid use, Malignancy, HIV infection, Malnutrition, Disorders of cell mediated immunity, Homosexual activity<sup>2</sup>.

The colon is the initial site of infection and liver is the most common site for extra-intestinal infection<sup>2</sup>. ALA is an inflammatory space- occupying lesion of the liver. The incidence of ALA has been reported

from 3% to 9% of all cases of amoebiasis<sup>3</sup>. In India ALA is endemic. The diagnosis of this condition has undergone major changes after the advent of imaging and molecular biology techniques.

As described by Berne<sup>4</sup>, ALA may mimic acute cholecystitis, perforated peptic ulcer, pneumonia, empyema, hydatid cysts, pancreatic pseudocysts, malignancy and pyrexia of unknown origin causing diagnostic difficulties. Complicated disease, e.g., peritoneal rupture has mortality varying from 18 to 45%, while uncomplicated disease has negligible mortality<sup>5,6</sup>. This study was conducted to find out the different clinical presentations of ALA in the populations of coastal Andhra Pradesh.

**Material and Method:**

The study was conducted prospectively over a period of 1 years from July 2012 to June 2013 in dept of medicine, MIMS hospital, Andhra Pradesh. All patients with the confirmed diagnosis of ALA were included in this study. The diagnosis was based on

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clinical features, positive Elisa test, ultrasonography, aspiration of anchovy sauce from the liver lesion, isolation of *E. Histolytica* (cyst/trophozoite) from the stool of the patient.

All patients suspected of liver abscess were referred for ultrasonography for the confirmation of the diagnosis. Basic biodata, coexisting medical diseases and relevant investigation were recorded, and patient was assessed for the need to aspirate the abscess. After initial treatment patients were reassessed for the need to aspirate the abscess on third, seventh and fourteenth day both clinically and radiologically. All the selected patients were routinely subjected to complete blood and urine examination, liver function test, blood urea and serum creatinine, Elisa, examination of stool for ova and cysts, X-ray chest, abdominal US, aspiration study of the lesion if greater than 10 cm or multiple abscess and analysis of the peritoneal fluid in case of laparotomy done for ruptured abscess. Liver diseases like alcoholic hepatitis, viral hepatitis other than liver diseases were excluded from the study.

**Result:**

Total no. of 65 cases presented with provisional diagnosis of amoebic liver abscess supported by ultrasonic findings were included in this study. The age group was from 10 to 50 years. Majority (24 patients, 37%) belonged to the age group of 21 to 40 years. There were 52 male and 13 female with a male to female ratio of 4:1.

The predominant presenting features were pain abdomen, fever, and anorexia. All the 65 patients presented with pain and tenderness. The pain was located, most commonly in the right hypochondrium in 49 patients (75.4%), as diffuse abdominal pain in 7(10.8%), epigastrium in 5 (7.7%) and as lower chest pain in 4 (6.2%). Two patients (3%) had right upper quadrant pain radiating to right shoulder. 51 patients (78.4%) had tender hepatomegaly with smooth liver surface and 3 (4.6%) had jaundice. Fever was of moderate degree and observed in 56 patients (86.2%), 30 patients (46.2%) had nausea, 16 (25%) had loss of appetite and Four patients (6.2%) presented with diarrhoea and weight loss. Among the 8 patients (12.3%) with respiratory complaints, 4 had pleuritic chest pain, 5 had dyspnoea and cough without expectoration. US was performed in 65 patients, was the most common method of diagnosis with high accuracy. The size of the abscess ranged from 3 to 15 cm. Solitary abscess was found in 48(73.8%) patients which are located as follows; right lobe(43), left lobe(2) and in both lobe(3). The

Multiple abscess was found in 7(10.8%) patients. 7 patients had emergency laparotomy because of ruptured abscess and presented with acute peritonitis & in 3 patients intercostals drainage tube was given. 49 patients (75.4%) having abscesses less than 10 cm responded to metronidazole only. In 9 patients (13.8%), with abscesses larger than 10 cm, US guided aspiration of the abscess was done. Percutaneous aspiration was done in 22 patients having multiple abscess(n=7), large abscess impending to rupture(n=13), 2 cases not responding to 3 days imidazole therapy. Pus culture report shows 2 cases E.coli & 1 case klebsiella superinfection rest are sterile. We have not reported any case ruptured to pericardium where the mortality is high.

Significant haematological findings were raised ESR, polymorphonuclear leukocytosis indicating necroinflammatory lesions of liver. Abnormal liver function tests was found in 29 patients(44.6%) revealing obstructive features and 58 (89.2%) patients had positive Elisa. Among 65 patients 56 patients are alcoholic, 4 patients are diabetic.

**Discussion:**

Amoebic liver abscess is more prevalent in alcoholics, male, younger age group and low socioeconomic status<sup>[7-9]</sup>. Present study revealed majority (37%) belonged to the age group of 21 to 40 years. Most previous studies have reported the age of incidence of liver abscess to be between 18-50yrs<sup>10-13</sup>. There were 52 male and 13 female with a male to female ratio of 4:1. Gender differences may be related to alcohol consumption<sup>10</sup>. The classical mode of presentation is triad of fever, right-upper-quadrant pain, and hepatomegaly. In our study Pain and fever were the most common symptoms accounting for 100% and 86.2% patients respectively. The pain and tenderness was most commonly located over right hypochondrium which is compared with other studies. Diarrhoea an unusual presentation was found only in 6% cases, reported in 12-33% of the patients in literatures<sup>3, 14</sup>. Severe icterus is usually due to a large abscess or multiple abscesses, or to an abscess situated at the porta hepatis cholestasis<sup>15,16</sup>. In the present study 4.6% of patients presented with jaundice, which is in accordance with the literature, 6-33%<sup>8,14,17</sup>. 12.3 percent of our patients had respiratory complaints without true amoebic involvement of the chest, the reported incidence is 25 to 42%<sup>8,18</sup> of respiratory complaints in other studies.

Ultrasound is very useful for diagnosis of amoebic liver abscess. The classic appearance is a non-homogeneous, hypochoic, oval mass with well defined borders<sup>19</sup>. Most common finding was a solitary abscess (73.8%) and most common location was right lobe in (n=43) in the present study. In a current review, isolated left lobe abscesses were seen in approximately 3% of cases, both right and left lobes were involved in 4.6% of cases, whereas right lobe in 66% cases<sup>11,20</sup>. Hepatic infection occurs most commonly in the right lobe of liver, presumably because this area receives most of the portal blood. Many studies revealed that the incidence of single abscess was more than the multiple abscess and the abscesses were more in right lobe.<sup>21,22</sup>

Routine aspiration of liver abscess is not indicated for diagnostic or therapeutic purpose. Aspiration has been indicated in the following circumstances: Lack of clinical improvement in 48 to 72 hours, Left lobe abscess, Large abscess having impending rupture / compression sign, Thin rim of liver tissue around the abscess (<10 mm), Seronegative abscesses, Failure in the improvement following non-invasive treatment after 4 to 5 days<sup>23</sup>. Open surgical drainage is rarely indicated and may be required in the setting of large abscess with a poor yield on needle aspiration or percutaneous drainage, clinical deterioration despite attempted needle aspiration, complicated ALA (like ruptured abscess in peritoneal cavity with

features of peritonitis, ruptured in the pleural cavity / pericardial cavity)<sup>24</sup>. Elisa is found to be positive in more than 90 % of the patients<sup>8</sup>, (88.7% of our patients). The sensitivity of US is nearly 92 to 97%. The combination of US findings with clinical features and stool analysis increases the diagnostic sensitivity<sup>2,8</sup>.

**Conclusion:**

Incidence of amoebic liver abscess is more amongst alcoholics and diabetics, mainly in the right lobe of liver and single in number, majority of abscess are bacteriologically sterile. Observation of low serum albumin with raised ALP along with raised ESR and polymorphonuclear leukocytosis suggests significant hepatic necroinflammatory changes due to amoebic liver abscess. The response to treatment with metronidazole was highly effective in clinical and radiological cure of liver abscess. A patient from an endemic area, low socioeconomic status combined with suggestive clinical features and US, will improve the diagnostic accuracy. Medical management is the cornerstone of therapy in amoebic liver abscess. The prognosis of amoebic abscess is much better than that of pyogenic abscess and usually a quick response to therapy is seen in amoebic abscess. Some patients may present only with fever & without pain abdomen. So amoebic liver abscess must be considered in the differential diagnosis of fever of unknown origin.

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