

Amebic Liver Abscess: Varied Presentation and Management Update

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Abstract

Introduction: Amebic liver abscess (ALA) is the most common extraintestinal manifestation of *Entamoeba histolytica*. Because of highly varied presentations, accurate diagnosis of ALA is difficult. Hence, early and correct diagnosis of ALA is essential to avoid serious complications.

Materials and Methods: The study was carried out in 64 cases of ALA admitted to the Surgery Department of MGM Medical College and Hospital, Jamshedpur, between March 2012 and April 2016. All the cases with confirmed diagnosis of ALA were included in this study.

Results: Sixty-four cases of ALA were studied over a 4-year period with a male to female ratio of 9.6:1. The age ranged from 15 to 65 years (mean age 35 years). There were 58 males (90.63%) and 6 females (9.37%). Age group of 31 to 40 years showed the highest incidence of ALA consisting of 43.75% cases. Pain was located most commonly in the right hypochondrium in 44 (68.75%) patients, fever observed in 50 cases (90.63%), and coincident diarrhea in 40.62% patients. Solitary abscess cavity was found in 59 (92.18%) cases. The right lobe of the liver was involved in 55 (85.93%) patients. In this study, 40 patients (62.5%) were chronic alcoholics. Pleuropulmonary complications such as right atelectasis and pleural effusion due to ALA were the most common complications found in 22 patients (34.37%). This was followed by intraperitoneal rupture of abscess in 15 patients (23.43%). Other complications were jaundice in 12 cases, ascites in 10 cases, subphrenic abscess in 3, and intrapleural rupture in 2 patients.

Conclusion: ALA has highly varied clinical presentation. The typical features of ALA which include pain, fever, and tender hepatomegaly are non-specific. A high index of clinical suspicion in patients from an endemic area and low socioeconomic class combined with ultrasonography, ultrasound-guided aspiration, and computerized tomography scan will improve the diagnostic accuracy to reduce catastrophic complication as a result of delayed diagnosis.

Key words: Amebic liver abscess, Management update, Varied presentation

INTRODUCTION

Amebic liver abscess (ALA) is the most common inflammatory space-occupying extraintestinal manifestation of protozoa *Entamoeba histolytica*. 10% of the world population harbors *E. histolytica* in their colon, 10% of them may develop invasive amoebiasis,¹ and 1-10% of these patients develop amebic abscess in their liver.^{2,3} ALA

is common in tropical countries and is due to overcrowding and poor sanitation.⁴ The colon is the initial site of infection. The protozoa reach the liver through the portal vein.^{5,6} Amebiasis may involve any other site, but liver is the most common site for extraintestinal infection.^{2,3,7} ALA has a highly variable presentation causing diagnostic difficulties. As described by Berne,⁸ ALA may mimic acute cholecystitis, perforated peptic ulcer, acute hepatitis, malignancy of biliary tree, liver, colon, or stomach, cirrhosis, hydatid cysts, pancreatic pseudocysts, pneumonia, acute pleurisy with effusion, empyema, chronic lung disease, tuberculosis, and pyrexia of unknown origin. Early and correct diagnosis of ALA is imperative because delayed diagnosis and treatment leads to complications.^{9,10} Despite tremendous improvements in the diagnostic accuracy, delayed diagnosis continues to occur.

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The aim of this study is to find out varied clinical presentation and accurate management of this disease to treat this case early to avoid complications.

MATERIALS AND METHODS

The study was carried out in 64 cases of ALA admitted to the Surgery Department of MGM Medical College and Hospital, Jamshedpur between March 2012 and April 2016. All the cases with confirmed diagnosis of ALA were included in this study. The diagnosis of ALA was based on clinical symptoms and signs such as weight loss, fever, abdominal pain, tenderness, ultrasound results, radiology, aspiration of characteristic anchovy sauce pus on needle aspiration, and absence of bacteria and neutrophil on microscopy, by serological tests and a good response to therapy with specific amebicidal drugs as shown by the disappearance of clinical symptoms.

Data of patients such as age, sex, and clinical features including duration, vital signs, physical findings and laboratory data, ultrasound, chest x-rays, aspiration study of the lesion if greater than 5 cm, computerized tomography (CT) scan, and outcomes of treatment and complications were recorded in a pre-prepared questionnaire.

RESULTS

Sixty-four cases of ALA were included in this study. All the patients were from low socioeconomic group. The age ranged from 15 to 65 years (mean age 35 years). The 31-40 years age group showed the highest incidence constituting to 28 (43.75%) of the cases. Age and sex distribution is shown in Table 1.

There were 58 males and 6 females (male to female ratio = 9.6:1).

The duration of symptoms ranged from 10 to 110 days. Seventeen patients (26.56%) presented within 15 days, 41 patients (64.06%) within 30 days, and 6 patients (9.37%) after 6 weeks of onset of symptoms.

Most of the patients presented with abdominal pain and tenderness (Tables 2 and 3). The pain was located most commonly in right hypochondrium in 44 (68.75%) patients, in the whole abdomen in 7 (10.93%), lower chest in 4 (6.25%), and in the left hypochondrium in 4 (6.25%) patients. Intercostal tenderness was seen in 48 patients (75%). Fever was present in 58 (90.63%) cases. New onset of diarrhea noticed in 26 (40.62%) patients.

Table 1: Age and sex distribution of patients with ALA

Age (in years)	n (%)		
	Males	Females	Total
<20	1 (1.56)	1 (1.56)	02 (03.13)
21-30	4 (6.25)	1 (1.56)	05 (07.81)
31-40	25 (39.06)	03 (4.68)	28 (43.75)
41-50	16 (25.00)	01 (1.56)	17 (26.56)
51-60	10 (15.62)	00 (0.00)	10 (15.62)
>60	02 (03.13)	00 (0.00)	02 (03.13)
Total	58 (90.63)	06 (9.37)	64 (100)

ALA: Amebic liver abscess

Table 2: Presenting symptoms with ALA

Symptoms	Number of patients (%)
Abdominal pain	59 (92.18)
Fever	58 (90.63)
Anorexia	59 (92.18)
Nausea	58 (90.63)
Diarrhea	26 (40.62)
Jaundice	10 (15.62)
Cough	06 (09.37)

ALA: Amebic liver abscess

Table 3: Signs of patients at the time of admission

Signs	Number of patients (%)
Right hypochondrium tenderness	44 (68.75)
Acute abdomen	06 (09.37)
Icterus	10 (15.62)
Ascites	02 (03.13)

Solitary abscess cavity was found in 59 (92.18%) cases. The right lobe of the liver was involved in 55 (85.93%) patients.

Pleuropulmonary complications such as right atelectasis and pleural effusion due to ALA were the most common complications found in 22 patients (34.37%). This was followed by intraperitoneal rupture of abscess in 15 patients (23.43%). Other complications were jaundice in 12 cases, ascites in 10 cases, subphrenic abscess in 3, and intrapleural rupture in 2 patients.

In our study, 4.68% (3 patients) mortality was observed due to intraperitoneal rupture of abscess leading to delayed diagnosis.

Ultrasonography (Figure 1) was performed in all the cases, but ALA was diagnostic in 46 patients (71.87%) only. All the patients underwent routine blood examination, stool examination, liver function test, renal function test, and X-ray Chest. CT-scan was required in some difficult cases and in those patients who had intraperitoneal rupture of ALA leading to difficulty in ultrasonographic diagnosis. Laparotomy was done in 16 (25%) cases for ruptured ALA

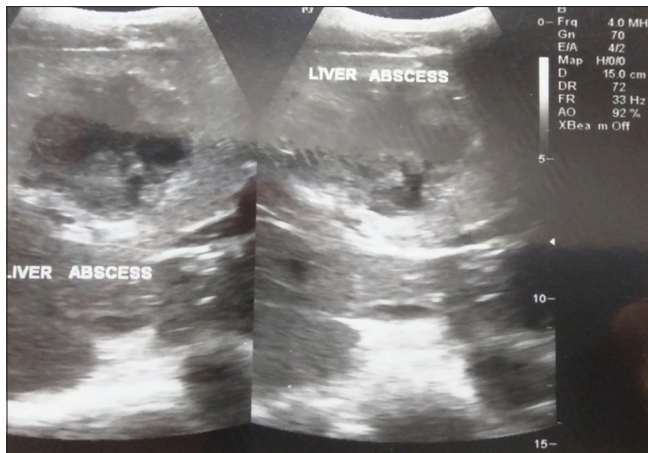


Figure 1: Amebic liver abscess as shown by ultrasound



Figure 2: (a and b) Amebic liver abscess as shown in computerized tomography scan

and failed aspiration. Patients with smaller ALA (<5 cm) responded pretty well with a higher dose (800 mg thrice daily) of metronidazole for ten days. Those who had ALA more than 6 cm size were treated with ultrasound-guided aspiration and metronidazole course. Intrapleural rupture of ALA was treated with water-sealed intercostal drainage. Most of the patients were followed up for more than 6 months, but in 14 (21.87%) cases, residual ALA cavity was seen on ultrasonography. There were 3 (4.68%) deaths in this group.

DISCUSSION

ALA is widely prevalent in the Indian subcontinent.¹¹⁻¹³ As ALA has varied presentations, it complicates the asymptomatic colonic infection more often than its symptomatic counterpart and this is the main reason why the disease may be overlooked or misdiagnosed.¹⁴ This study has shown the patterns of ALA similar with other studies in terms of age, sex, number, size, location, and ultrasonographic pattern.¹⁵ Although the disease occurs in any age group, in this study, the most common age group was 31-40 year. Male to female ratio was 9.6:1. Pain and fever were the most prevailing features in this study. Hence,

pain and fever in an adult patient from low socio-economic status should raise the suspicion of ALA.¹⁶ In this study, right lobe of the liver was involved most frequently in 85.93% of cases which is consistent with the other studies.¹⁷ Diarrhea was present in 40.62% of patients; however, it is reported in other studies in 12-33% of cases.¹⁸⁻²⁰

In this study, 40 patients (62.5%) were chronic alcoholics. Ocshner and De Bakey²¹ attribute higher incidence in males to alcoholism, which predisposes to hepatitis and trauma. It is observed that alcoholics had larger abscesses, greater frequency of complications, and poor response to treatment.

Pleuropulmonary complication consisted of atelectasis and right pleural effusion accounted for highest incidence of complication (34.37%). This is in confirmation with the reported 25-42%.^{19,22} Intraabdominal rupture of ALA is considered the second most common complication amounting to 23.43%. This may be due to lower socioeconomic condition and their delayed reporting to the hospital. Icterus developed in 12 cases (18.75%) and ascites in 10 cases (15.62%). In this study as well as those of others suggests that both jaundice and ascites tend to occur most commonly in the presence of multifocal abscesses, especially when these are associated with impingement of hepatic hilar tubular structures.²³⁻²⁶

Like the clinical features, investigations too are neither sensitive nor specific. According to some literature, indirect hemagglutination test is positive in >90% of cases,¹⁹ but may be of limited value in endemic areas.^{21,27} Isolation of amoeba is specific but very difficult. These investigations are neither helpful in the early diagnosis nor available at the time of making decision.^{16,28} Thus, ALA is difficult to diagnose and may be missed on initial clinical examination.

Ultrasonography, cheap and safe observer-dependent, is widely accepted as a first-line investigation for imaging focal hepatic lesions as well as liver abscesses.^{14,29} This is attributable to its low cost, greater availability, and high accuracy. It is useful not only in diagnosis and intervention but also in the follow-up of the condition and to assess resolution. The sensitivity of ultrasound is nearly 92-97%.^{7,19} However, ultrasonographic features of ALA and other space-occupying lesions of the liver, for example, hepatoma, pyogenic liver abscess may overlap.³⁰ The combination of ultrasonographic findings with clinical features and aspirate analysis increases the sensitivity.^{7,19,30} Nowadays, availability of CT scan (Figure 2a and b) also has a pivotal role but may not be available in the remote area where clinical suspicion, laboratory investigations have only use. Hence, in these settings, other differential diagnoses also have to be kept in mind.

CONCLUSION

ALA has highly varied clinical presentation. The typical features of ALA which include pain, fever, and tender hepatomegaly are non-specific. A high index of clinical suspicion in patients from an endemic area and low socioeconomic class combined with ultrasonography, ultrasound-guided aspiration, and CT-scan will improve the diagnostic accuracy to reduce catastrophic complication as a result of delayed diagnosis. High dose of metronidazole (800 mg) thrice daily for 10 days with frequent ultrasound-guided aspiration is found most curative.

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