



CLINICAL PRESENTATION AND DIAGNOSTIC DIFFICULTIES IN AMOEBIC LIVER ABSCESS

General Surgery

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ABSTRACT

Background --Amoebic liver abscess (ALA) is a common and major health problem in India. ALA has a highly variable presentation, causing diagnostic difficulties. Early and correct diagnosis of Amoebic liver abscess is essential, because delayed diagnosis and treatment leads to complications which has significantly higher morbidity and mortality than uncomplicated disease. **Objective:** To find out different clinical presentation and its differential diagnosis in order to establish early diagnosis of ALA. **Patients and Methods :** This retrospective, observational study was carried out in the Department of Surgery during July 2014 to Dec 2014. Inclusion criteria were defined. The data of patients were enrolled according to variables in a pre-designed form for this study and analyzed. Results 30 cases of ALA were enrolled with male to female ratio of 2:1. Right hypochondrial pain occurred in 66.67%, left hypochondrial pain occurred in 33.34%, pain radiating to tip of right shoulder in 33.33%, fever in 83.33%, co-incident diarrhea in 10% and concurrent pulmonary symptoms in 16.66%. The most common signs were tender hepatomegaly in 83.33% and jaundice in 10%. 33.33% patients had past history of aspiration of ALA. 6.66% patients had ruptured abscess. 11.12% were due to delayed diagnosis and 3.33% was ruptured despite treatment. Mortality rate was 3.33% amongst patients with ruptured ALA. Diabetes, hypertension, AIDS and alcoholism were commonly associated co-morbidities. Right lobe (66.67%) is commonly involved than left lobe (16.66%) and single abscess (66.66%) was more common than multiple abscess (33.33%). Diagnosis was missed in 23.33% patients particularly those with atypical presentations. Ultrasonography, Computerized tomography (CT) scan with diagnostic aspiration were useful in diagnosing ALA. **Conclusion** The typical features of ALA, which include pain, fever and tender hepatomegaly, are nonspecific. ALA may be missed because of variable clinical features and atypical presentation. A high index of clinical suspicion in patients from an endemic area and low socioeconomic class combined with ultrasonography, US aspiration and CT scan will improve the diagnostic accuracy to reduce catastrophic complication as a result of delayed diagnosis.

KEYWORDS

Introduction:

Amoebic liver abscess (ALA) is the most common inflammatory space-occupying lesion of the liver. The causative agent is a protozoan, *Entamoeba histolytica*. Ten percent of the world population harbors *E. histolytica* in their colon, 10% of them may develop invasive amebiasis [1,2,3]. ALA is common in tropical and sub-tropical countries especially India due to overcrowding and poor sanitation [4]. The colon is the initial site of infection. The protozoa reach the liver via the portal vein [5,6]. Amebiasis may involve any other site but the liver is the most common site for extra-intestinal 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]. Complicated disease e.g. rupture has mortality varying from 18 to 45%, while uncomplicated disease has negligible mortality [9,10]. Despite tremendous improvements in the diagnostic accuracy, delayed diagnosis continues to occur. This study was conducted to find out different clinical presentation and its differential diagnosis which certainly helps early diagnosis of ALA to avoid catastrophic results of complications.

Patients and methods: This retrospective, observational study was carried out in the Department of Surgery during July 2014 to Dec 2014. Inclusion criteria were patient with confirmed diagnosis of ALA. The diagnostic criteria were: clinical features, abdominal ultrasonography, radiology, aspiration of anechoic fluid from the liver lesion, absence of bacteria and neutrophil on microscopy of liver aspirate and findings of laparotomy. The data of patients were enrolled in a pre-designed form for this study in regards to age, sex, symptoms and signs and other positive history, findings of general, systemic examination and proctosigmoidoscopy, values of complete blood and urine examination, serum alanine aminotransferase (ALT), alkaline phosphatase, serum albumin, urea, creatinine, examination results of stool for ova and cysts, X-ray chest PA view, abdominal ultrasonography, aspiration study of the lesion if greater than 5 cm,

computerized tomography (CT) scan and outcome of the disease. Total 30 patients were enrolled. Results 30 cases of ALA, accounting for 2.5% of the total yearly admissions in our institute, were included in the study. The age ranged from 15 to 60 years (mean 35 years). There were 20 males and 10 females (male to female ratio = 2:1).

The duration of symptoms ranged from 7 to 60 days. 15 patients (50%) presented within two weeks, 5 (16.66%) patients within four weeks, 5 (16.66%) patients within six weeks and 5 (16.66%) patients after 6 weeks of onset of symptoms.

All 25 patients presented with pain and tenderness. The pain was located, most commonly in the right hypochondrium in 20 (83.33%) patients, in the whole abdomen in 2 (9.64%) and in the left hypochondrium in 10 (33.33%). Vague upper abdominal pain was complained by 2 (9.64%) patients. Pain radiated to the tip of shoulder in 10 (33.33%) patients. 25 (83.33%) patients had tender hepatomegaly. 3 (10%) presented with new onset of diarrhea and 15 (50%) patients had this symptoms before 2 weeks. Among the 5 (16.66%) patients with concurrent respiratory complaints, 3 (8.56%) had dyspnoea during routine activity and 2 (4.27%) had respiratory symptoms as the sole presentation. However, 4 (26.21%) patients had positive respiratory signs of pleural effusion and/or basal crepitations corresponding to the side of the abscess which was evident in x-ray chest. 10 (33.33%) patients had past history of aspiration of ALA. Of the 2 (6.66%) patients with ruptured ALA, 1 (3.32%) presented with already ruptured abscess and acute peritonitis, in 1 (3.32%) the abscess ruptured with resultant peritonitis during hospitalization due to delayed diagnosis. In 1 (3.66%) patients, the abscess ruptured after 24-48 hours despite aspiration and metronidazole treatment. Mortality rate was 3.20% (1 patients) in patients with ruptured ALA. 25 (83.33%) patients had leucocytosis, 20 (66.66%) patients had elevated ESR, 7 (23.33%) patients had hemoglobin 7.5 gm%, 15 (50%) patients had elevated ALT, 15 (50%) had elevated alkaline phosphatase, (71.65%) patients had hypoalbuminemia, 3 (8.55%) patients had altered blood urea and serum creatinine and 12 (22.29%) patients had presence of cysts and ova in stool examination. 15 (50%) patients having abscess 5 cm treated with metronidazole with aspiration of abscess. The initial clinical diagnosis was wrong in 10 (33.33%) patients in whom final diagnosis was made after necessary investigations.

Symptoms of presentation	No of pateints
Right hypochondria pain	20
Left hypochondria pain	10
Fever	25
Anemia	9
Nausea	18
Jaundice	3
Diarrhea	3
Cough with expectoration	5

Sign on examination	No of pateints
Abdominal tenderness	28
Acute abdomen	2
Icterus	3
Respiratory sign	5

Co morbid status	No of pateints
DM	6
HYPERTENSION	5
COPD	5
ALCOHOL INTAKE	28

USG Findings	No of patients
Hepatomegaly	22
Splenomegaly	2

Location of abscess	
Rt lobe	25
Lft lobe	5

No of abscess	
Single	20
Multiple	10

Size of abscess	
< 5cm	18
>5	12

Rupture	
	2

Initial diagnosis	Final diagnosis	Diagnosis modality	No of patients
GASTRITIS	ALA	X RAY , USG , UGIS	1
Acute hepatitis	ALA	X RAY , USG	2
Acute pancreatitis	ALA	USG	2
Acute cholecystitis	ALA	USG	2

DISCUSSION:

Amoebic liver abscess is widely prevalent in the Indian subcontinent[11,12,13]. In this study, the most common age affected was the 20-40 year age group and male to female ratio was 2:1. Similar results have been obtained by other studies also[10,13]. Pain and fever were the most prevailing features in this study. So, pain and fever in a young man from a lower socioeconomic status should raise the suspicion of amoebic liver abscess [14-21]. Diarrhea was present in 10% of patient, however in other studies it is reported as 9%[14,15,21]. Jaundice has been attributed to severe illness, large abscess compressing the porta hepatis, sepsis, peritoneal rupture. In our study 10% patients had jaundice which is comparable to other literature [20,21]. 11.22% of patients had signs and symptoms of peritonitis from which it is difficult to diagnose ALA without necessary investigations. 16.66% patients had respiratory symptoms alone without any specific symptoms of ALA which is comparable to other studies [14,22] which will definitely aids in diagnostic difficulties.

Other co morbidities like diabetes, hypertension, ischemic heart disease, HIV etc. are commonly associated with ALA which makes the clinical picture diffuse. However association between alcoholism and ALA is strong as alcoholism causes hepatic damage which predisposes to organ invasion and it also suppresses the production of amoebistatic substance in the liver. So, patients with alcoholism tend to have larger and multiple abscesses, greater frequency of complications and delayed resolution of abscesses [1,7,8].

Like the clinical features, investigations too are neither sensitive nor specific. According to some literature, indirect haemagglutination test is positive in >90% of cases[14] but may be of limited value in endemic areas[23,24]. 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[17,25,26]. Thus, ALA is difficult to diagnose and may be missed on initial clinical examination like in 30.48% of patients as in our case which coincides with other studies

also [17,18]. Ultrasonography is safe and economic, but is observer-dependent. The sensitivity of ultrasonography is nearly 92 to 97% [7,17]. However, ultrasonography features of ALA and other space occupying lesions of the liver like hepatoma, hemangioma may overlap, but sensitivity of ultrasonography may be enhanced by ultrasonography guided needle aspiration which also have therapeutic value [7,14,27-29]. Nowadays availability of computerized tomography (CT) scan also have pivotal role but may not be available in remote area where clinical suspicion, laboratory investigations have only use. So in these settings, other differential diagnosis also has to be kept in mind.

CONCLUSION

The typical features of ALA, which include pain, fever and tender hepatomegaly, are nonspecific. ALA may be missed because of variable clinical features and atypical presentation. A high index of clinical suspicion in patients from an endemic area and low socioeconomic class combined with ultrasonography, US aspiration and CT scan will improve the diagnostic accuracy to reduce catastrophic complication as a result of delayed diagnosis.

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