

# A Study of Clinical Profile, Etiology, and Management of Liver Abscess in a Tertiary Care Center in Jammu

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## Abstract

**Background:** The aim of this observational study of liver abscess is to determine the demographic profile, clinical presentation of the subjects, etiology, laboratory investigations, and different treatment modalities.

**Methods:** This observational study was carried out in the Department of General Surgery, Govt. Medical College, Jammu. A total of 50 cases with proven liver abscess were taken and a designed pro forma was used to collect all the data and different modalities of treatment were noted.

**Results:** Amebic liver abscess (58%) is more common than pyogenic liver abscess (42%). Liver abscess is more common in male subjects as compared to females. The right lobe of the liver is commonly involved with mostly solitary lesions. The right upper abdominal pain, fever, and abdominal tenderness are the most common complaints. Alcoholism is the most common risk factor documented in about 58% of the subjects. Most of the patients were managed medically (46%) followed by USG-guided percutaneous drainage (42%).

**Conclusion:** The modern radiological techniques had greatly helped in early diagnosis and management of liver abscess, thereby reducing the morbidity and mortality related to disease. Medical management and percutaneous drainage (USG guided) has become the mainstay of the treatment of liver abscess.

**Key words:** Amebic, Liver abscess, Open drainage, Percutaneous drainage, Pyogenic

## INTRODUCTION

The first description of liver abscess is credited to Hippocrates in the year 4000 BC but it still poses great challenges for the treating doctor due to its wide variety of clinical presentation and difficulty in diagnosis (especially in tropical countries due to poor hygiene and illiteracy) with significant morbidity and mortality, though the introduction of the newer antibiotics and advancements in radiology has great impact on the outcome. India being a tropical country harbors around 400 million people with *Entamoeba histolytica* which is

the cause for amebic liver abscess thus it is of immense importance.<sup>[1-3]</sup>

Abscess formation within the liver occurs in variety of circumstances and in response to different agents. Abscess of the liver may be pyogenic or parasitic in origin. With introduction of antibiotics, the incidence of pyogenic abscess of the liver has decreased to a greater extent. Liver abscess is the most common extraintestinal manifestation of amebiasis. Hepatic amebiasis is reported in 3–10% of afflicted patients. The incidence is high in tropical countries and is attributed to lack of proper sanitation and personal hygiene due to low socioeconomic conditions.

Pyogenic and amebic liver abscess shares many clinical features. Clinically, the first diagnostic requirement is the demonstration of an abscess followed by demonstration of its nature. Until recently, the diagnosis of liver abscess was dependent on variable clinical criteria, characteristics of pus aspirated from abscess cavity or on a clinical response

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Month of Submission : 07-2020  
Month of Peer Review : 08-2020  
Month of Acceptance : 08-2020  
Month of Publishing : 09-2020

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to appropriate chemotherapy. With the advent of imaging techniques such as ultrasound, CT scan, and serological tests, the diagnosis of liver abscess can be made early, rapidly, and accurately. The management of hepatic abscess has been greatly influenced by advances in diagnostic imaging and interventional radiology.<sup>[4-6]</sup>

Major cause for the pyogenic abscess is biliary tract diseases. In alcoholics, diabetics, and immunocompromised individual, there is increasing trend of the disease.

*Escherichia coli*, *Klebsiella* species, enterococci, and *Pseudomonas* species are the most common aerobic organisms cultured in recent series, whereas *Bacteroides* species, anaerobic streptococci, and *Fusobacterium* species are the most common anaerobes. *Klebsiella pneumoniae* is extremely prevalent in liver abscesses in Asian countries as well as in predominantly Asian population in the Western world for unclear reasons. *Mycobacterium tuberculosis* is a common infecting organism in the acquired immune deficiency syndrome. Confirmation of pyogenic liver abscess involves aspiration of the abscess as well as positive blood cultures. Amebic serology is both a highly sensitive and specific test in identifying patients with amebic infection, thus aiding in differentiation between pyogenic and amebic hepatic abscess.<sup>[7-9]</sup>

## METHODS

This observational study was carried out in the Department of General Surgery, Government Medical College, Jammu.

### Inclusion Criteria

The following criteria were included in the study:

- All the patients of both sexes of liver abscess diagnosed clinically and/or ultrasonographically
- All cases of bacterial and parasitic liver abscess
- All cases in evolving, liquefied and ruptured stage with or without peritonitis
- All cases of diagnosed liver abscess being referred to GMC Jammu.

### Exclusion Criteria

- Patients with liver abscess associated with trauma or malignancy were excluded from the study

Patients for the study will be taken from those attending surgical OPD and emergencies as a case of liver abscess. The patients will be evaluated as per following protocol.

- Demographic detail such as age, sex, residence, and comorbidities shall be noted for all patients
- A detailed history including presenting complaints, past history, and history of any immunocompromised state shall be noted

- Investigations such as complete hemogram, coagulation profile, and liver function tests will be done
- Radiological investigations such as USG and chest X-ray will be performed on the day of admission
- Patients will be started on intravenous antibiotics with monitoring of clinical status of the patient
- Follow-up USG abdomen to be done if there is no improvement in the symptoms of the patient
- CECT abdomen and pelvis will be performed if patient's condition worsens or does not improve
- Various modalities of the treatment of liver abscess used will depend on multiple factors such as site of abscess, size of abscess, single or multiple, and clinical examination
- Various modalities included are as follows:
  - a. Conservative management
  - b. USG-guided percutaneous aspiration/drainage
  - c. Open drainage.

### Follow-up of Patients

Patients will followed up every 2 weekly for 1 month followed by monthly for 6 months. The patient will be evaluated for the residual cavity, efficacy of treatment, or recurrence.

## RESULTS

A total of 50 patients were taken having proven liver abscess. Amebic abscess was more common than pyogenic liver abscess. Out of 50 patients, 29 (58%) had amebic liver abscess and 21 (42%) had pyogenic liver abscess [Table 1].

Out of 50 patients, 46 were male and only 4 were female. It was observed that 28 out of 50 patients were alcoholics, 2 were diabetics, and 1 had a history of ATT intake [Table 2].

The incidence of liver abscess was found to be more common in 21–40 years age group followed by 41–60 years age group. Moreover, it was observed that pyogenic liver abscess is more common in elderly age group [Table 3].

**Table 1: Distribution of patients**

Type	Frequency	Percentage
Amebic	29	58
Pyogenic	21	42
Total	50	100

**Table 2: Sex distribution**

Sex	Frequency	Percentage
Male	46	92
Female	4	8
Total	50	100

The right lobe involvement was more common with 33 patients followed by involvement of the left lobe in 10 patients followed by involvement of both lobes in 7 patients [Table 4].

Thirty-nine patients had a solitary liver abscess while 11 patients had multiple liver abscesses. However, it was seen that frequency of multiple liver abscesses was more of bacterial origin [Table 5].

Pain was the most common symptom (92%) followed by fever (84%) and tenderness was the most common sign [Table 6].

Forty-four patients presented with abdominal tenderness more so in the right upper abdomen, 20 patients had hepatomegaly while 10 patients presented to emergency in sepsis.

About 46% of patients were treated conservatively while 42% of patients underwent USG-guided pigtail drainage and 12% of patients were subjected to open drainage [Table 7].

## DISCUSSION

Patients of liver abscess were studied for general parameters, etiological and predisposing factors, symptoms, signs, laboratory findings, radiological findings, and various treatment modalities. Liver abscesses are classified mainly into amebic and bacterial origin. Amebic liver abscess is mainly a disease of developing countries like India.<sup>[10,11]</sup>

**Table 3: Age distribution**

Age group	Frequency	Percentage
<20	4	8
21-40	23	46
41-60	17	34
>60	6	12

**Table 4: Anatomical distribution based on lobe involved**

Lobes involved	Frequency	Percentage
Right	33	66
Left	10	20
Both	7	14
Total	50	100

**Table 5: Anatomic distribution based on number of cavities**

Anatomic distribution	Frequency	Percentage
Solitary	39	78
Multiple	11	22

In the present study, 58% of the patients were of amebic liver abscess and rest were pyogenic. Anatomically right lobe of the liver is mainly involved with mostly solitary lesions. The findings of the study are consistent with the previous reports on liver abscess by Mukopadhyay *et al.* and Sharma *et al.* and various other studies. Rahimian *et al.* also reported the same findings in their study in which 70% of abscesses were seen in the right lobe, majority of them being solitary. Most of the patients were in the age group of 21-40 years of age. Pyogenic liver abscess was noted mostly in elderly age group which is consistent to the findings reported by Seeto *et al.* in their study.

About 58% of the patients had a history of alcohol intake, which came out to be major predisposing factor for liver abscess. Siroliya *et al.* reported that 68% of study subjects had history of alcoholism. Hai *et al.* in his study reported that 85% of his study subjects had history of alcoholism and concluded that there is a 5-fold incidence of ALA among alcoholics.

Pain upper abdomen is the most common presenting complaint followed by fever. In the study, 92% of patients presented with abdominal pain, 84% of patients with fever, and abdominal tenderness is present in about 88% of study subjects. Findings of the study are similar to findings reported in various other studies.

About 62% of patients had leukocytosis and 54% of patients were anemic which is consistent with the study conducted by Krishnanand *et al.*

In the present study, most of the patients were managed conservatively. About 50 % of the patients were managed conservatively while 38% of the patients have undergone USG-guided percutaneous drainage and 12% have undergone open surgical drainage. Similar findings were reported in various other studies.<sup>[9-15]</sup>

**Table 6: Clinical presentation**

Symptoms	Frequency	Percentage
Pain	46	92
Fever	42	84
Rigors and chill	25	50
Jaundice	15	30
Vomiting	12	24
Cough	3	6

**Table 7: Management of liver abscess**

Management	Frequency	Percentage
Conservative	23	46
USG-guided pigtail drainage	21	42
Open drainage	06	12

## CONCLUSION

The advent of modern radiological techniques such as USG and CECT abdomen coupled with history and clinical examination has led to an early diagnosis of liver abscess. Medical management and percutaneous drainage (USG guided) has become the mainstay of treatment, thereby significantly reducing the morbidity and mortality associated with the disease. Open surgical drainage is employed in patients with ruptured liver abscess presenting as peritonitis.

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**How to cite this article:** Singh G, Kumar R, Singh S, Kour G. A Study of Clinical Profile, Etiology, and Management of Liver Abscess in a Tertiary Care Center in Jammu. *Int J Sci Stud* 2020;8(6):71-74.

**Source of Support:** Nil, **Conflicts of Interest:** None declared.