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General Surgery

KEY WORDS: Liver Abscess, Pyogenic liver abscess, Amoebic liver abscess

# EPIDEMIOLOGICAL, CLINICAL FEATURES, MANAGEMENT PROFILE & OUTCOME IN PATIENTS OF LIVER ABCESS: A TERTIARY CARE CENTRE EXPERIENCE OF AMRAVATI, MAHARASHTRA.

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ABSTRACT

**Background :** Liver abscess is a common and major health problem in the lower socio-economic group. Evolution in diagnostics and treatment methodology has resulted in marked reduction in morbidity and mortality associated with liver abscess. Today with improved antibiotics and operative techniques, we could achieve much better response in patients with liver abscess.

**Methods:** This retrospective study was conducted at the Department of General Surgery, Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra. Data of all admitted patients with the diagnosis of suspected liver abscess in Department of General Surgery, Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra from the period March 2018 To March 2019 was reviewed to analyze the epidemiological profile (Etiological & predisposing factors), variation in clinical presentation in liver abscesses, laboratory & microbiological profile and to formulate management plan in liver abscess. Total of 100 consecutive patients diagnosed as having liver abscess on ultrasound were included.

**Results:** Pyogenic & Amoebic liver abscess is most common in 5th & 4th decade of life with male to female ratio of 16:1. Alcohol consumption, Diabetes Mellitus & low socio economic status are important predisposing factors. Most common presenting complain & clinical finding is abdominal pain. On ultrasound most abscess are solitary & in right lobe of liver. Most common modality of treatment was pigtail catherization & percutaneous aspiration with antibiotics coverage in pyogenic & amoebic liver abscess respectively.

**Conclusions:** The commonest presentation was young male, alcoholic of low socioeconomic class having right lobe solitary amoebic liver abscess. Appropriate use of minimally invasive drainage along with intravenous antibiotics techniques reduces mortality

## INTRODUCTION

Liver abscess (LA) is defined as collection of purulent material in liver parenchyma which can be due to bacterial, parasitic, fungal, ormixed infection. It is a common condition across the globe. Out of total incidence of LA, approximately two-thirds of cases in developing countries are of amoebic aetiology and three-fourths of cases in developed countries are pyogenic [1]. Amoebiasis is presently the third most common cause of death from parasitic disease [2]. The condition is endemic in tropical countries like India due to poor sanitary condition and overcrowding. Amoebic liver abscess (ALA) accounts for 3–9% of all cases of amoebiasis [3]. However, pyogenic and tubercular aetiologies should always be entertained in the differentials. The incidence of tubercular liver abscess (TLA) has increased in recent past due to increased incidence of predisposing factors like alcoholism, immunodeficiency, irrational usage of antibiotics, and emergence of drug resistant bacilli. Surgical management was the mainstay for treating LA earlier [1]. However, recent evidences from percutaneous drainage procedure have showna favorableoutcomewith less average length of stay in hospital compared to conservative mode of treatment [4]. Between 15 to 55% patients in different series, no identifiable cause or source for PLA was found (Hence called cryptogenic) [5,6,7]

Though a readily treatable disease, if left untreated, liver abscess can be potentially fatal, leading to mortality ranging from 60-80% [8]. However, with the advances in radiological investigations like ultrasonography and CT scan for diagnoses together with interventional radiology has reported a success rate ranging from 75-100% for treatment of liver abscess, decreasing mortality to 5-30%, and surgical intervention which is associated with significant morbidity and mortality ranging from 10-47% is now becoming unnecessary [9].

With this changing scenario in incidence, environmental conditions, diagnostic methods, treatment and complications associated with liver abscess has inspired us to do in-depth study regarding epidemiological profile, changing trends in clinical profile, microbiological aetiology, diagnosis and management outcomes of patients diagnosed with liver abscess.

## MATERIALS AND METHODS

This retrospective study was conducted at the Department of General Surgery, Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra. Data of all admitted patients with the diagnosis of suspected liver abscess in Department of General Surgery, Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra from the period March 2018 To March 2019 was reviewed to analyze the epidemiological profile (Etiological & predisposing factors), variation in clinical presentation in liver abscesses, laboratory & microbiological profile and to formulate management plan in liver abscess. Total of 100 consecutive patients diagnosed as having liver abscess on ultrasound were included.

**The inclusion criteria were as follows:**

1. Age above 15 yrs.
2. Single or multiple hepatic lesions in ultrasound imaging.

After reviewing all the diagnosed cases of liver abscess following sets of data were extracted:-

1. Demographic profile, clinical features & clinical examination, of the patients were taken as per case sheets.
2. Laboratory & Imaging profile of the patients were taken as per case sheets.

a) Complete hemogram, liver function test, kidney function test, and coagulation profile (PT/INR).
b) Serologies for Entamoeba histolytica, HIV, and hepatitis B

and hepatitis C viruses

c) Aspirate report for wet mount for trophozoites of Entamoeba histolytica, Gram's staining, ZN staining for AFB and Culture & Sensitivity.

d) Ultrasound feature of liver abscess like single or multiple, organised or partially/completely liquefied, ruptured or unruptured.

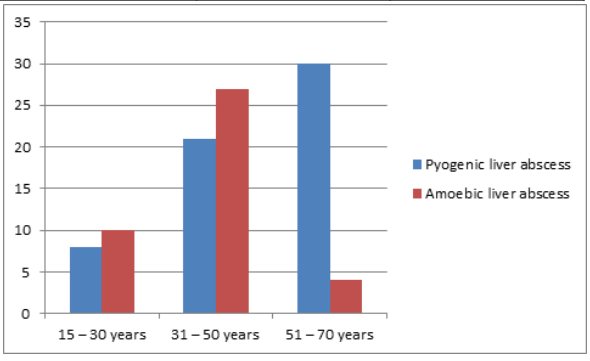
Treatment plan given to patient as per patient's status & ultrasound results.

## RESULTS

Age of the patients included in this study varied from 15-70 years. The mean age was 36 years. The highest incidence was noted in the age group of 31-50 years (48%).

**Table 1 : Distribution of patients according to age group**

| Age group | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| 15 – 30 years | 8 | 10 |
| 31 – 50 years | 21 | 27 |
| 51 – 70 years | 30 | 4 |

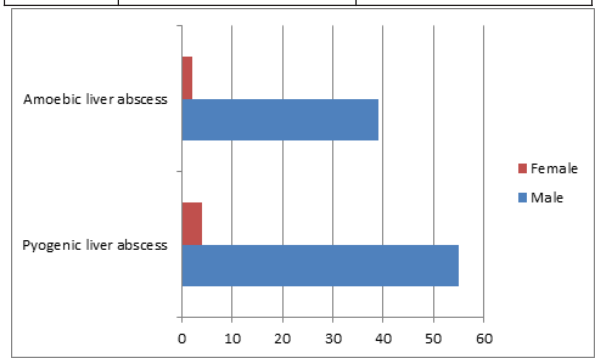



**Graph 1: Distribution of patients according to age group**

Of all the studied patients, 94% of patients were male and 6% were female.

**Table 2: Distribution of patients according to gender.**

| Gender | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| Male | 55 | 39 |
| Female | 4 | 2 |

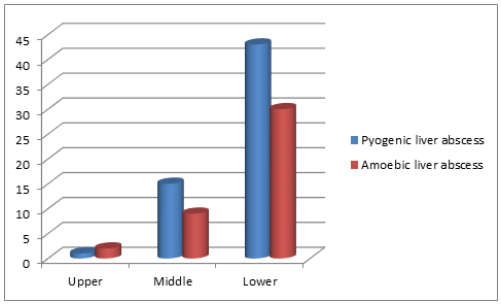



**Graph 2: Distribution of patients according to gender.**

Most of the patients belong to lower & middle SES (97%) while only 3 cases reported in upper class.

**Table 3: Distribution of patients according to Socioeconomic group.**

| Socioeconomic group | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| Upper | 1 | 2 |
| Middle | 15 | 9 |
| Lower | 43 | 30 |

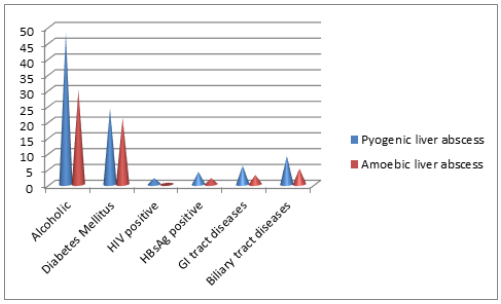



**Graph 3: Distribution of patients according to Socioeconomic group.**

Out of 100 patients 78 were alcoholic while 45 patients had Diabetes mellitus as predisposing factor. Both alcoholism as well diabetes were most influential predisposing factor in both types of liver abscess.

**Table 4: Predisposing factors**

| Predisposing factors | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| Alcoholic | 48 | 30 |
| Diabetes Mellitus | 24 | 21 |
| HIV positive | 2 | 0 |
| HBsAg positive | 4 | 2 |
| GI tract diseases | 6 | 3 |
| Biliary tract diseases | 9 | 5 |




**Graph 4: Predisposing factors**

Abdominal pain was most common presenting complain (100% of patients) followed by Fever 81/100(81%). Similarly abdominal tenderness was most common clinical finding (84% of patients) followed by hepatomegaly (77%).

**Table 5: Frequency of Symptoms & Signs**

| Symptoms | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| Pain in Abdomen | 59 | 41 |
| Fever | 50 | 31 |
| Pruritus | 32 | 1 |
| Diarrhea | 18 | 7 |
| Cough | 15 | 4 |
| Chest pain | 12 | 4 |
| Signs | | |
| Abdominal tenderness | 51 | 33 |
| Hepatomegaly | 48 | 29 |
| Guarding/ Rigidity | 22 | 15 |
| Pallor | 9 | 4 |
| Icterus | 8 | 5 |

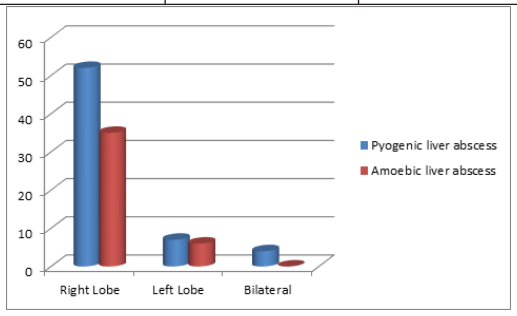
USG abdomen was done in all cases. Isolated right lobe abscess was the most common finding seen in out of 81/100 of cases, Left lobe abscess was seen in 13/100 of cases. Both lobe involvement was seen in 4/100 of cases.

Solitary abscess being the most common presentation found in 84/100 cases. Multiple lobe liver abscesses were seen in

16/100 cases.

**Table 6: USG Finding**

| USG finding lobe involved | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| Right Lobe | 52 | 35 |
| Left Lobe | 7 | 6 |
| Bilateral | 4 | 0 |
| Number of abscess | | |
| Solitary | 48 | 36 |
| Multiple | 11 | 5 |
| Ruptured | 5 | 1 |

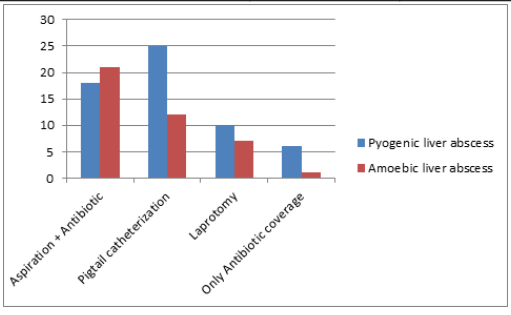



**Graph 6: USG Finding**

In cases of pyogenic abscess most common modality of treatment was pigtail catheterization followed by percutaneous aspiration with antibiotics coverage. In cases of amoebic abscess most common modality of treatment was percutaneous aspiration with antibiotics coverage followed by pigtail catheterization.

**Table 7: Treatment Plan**

| Treatment | Pyogenic liver abscess | Amoebic liver abscess |
|---|---|---|
| Aspiration + Antibiotic | 18 | 21 |
| Pigtail catheterization | 25 | 12 |
| Laprotomy | 10 | 7 |
| Only Antibiotic coverage | 6 | 1 |




**Graph 7: Treatment Plan**

## DISCUSSION

The highest incidence was noted in pyogenic & amoebic liver abscess were 31-50 years (48%) quite similar to previous studies (Shyam Mathur et al,[10] Khee-Siang Chan et al.[11] Hyo Min Yoo et al.[12] Teh et al.[13] Navneet Sharma et al.[14] Viroj wiwanitkit.[15])

Of all the studied patients, male predominance was seen in both types of liver abscess with over all male to female ration of 16:1. Mehta et al.12 (1986) founded a male preponderance of 15:1 while study conducted by Tejas N Hathila et al.[16] reported that male to female was 13.3:1.9. Similar results was also obtained in other studies done by Shyam Mathur et al.[10] Khee-Siang Chan et al.[11] Hyo Min Yoo et al.[12]

Most of the patients belong to lower & middle SES (97%) while only 3 cases reported in upper class. Hai et al. reported higher incidence of liver abscess especially pyogenic in lower socioeconomic status. Similar results were also found in study of Zahid Khan et al.[17] & Islam et al.[18] with 60% & 74% respectively association with lower SES status.

All of the patients (100%) who presented in this series presented with abdominal pain. Most of the patients had Right Hypochondriac pain; some shows Epigastrium and generalized abdominal pain. Fever was also more significant (81%) symptom in our study as compared to other studies done by Shyam Mathur.[10], Khee-Siang Chan et al.[11], Hyo Min Yoo et al.[12], Teh et al.[13], Navneet Sharma et al.[14] Reed et al.[19] (2001) studied liver abscess & found epigastric & right hypochondrium pain followed by nausea & vomiting as most common featuring.

Most common modality of treatment was pigtail catherization & percutaneous aspiration with antibiotics coverage in pyogenic & amoebic liver abscess respectively as compared to Hyo Min Yoo et al.[12] Study where 79.0% patients underwent Percutaneous Aspiration & 42.6% cases underwent Pigtail catheter drainage. Yu et al.[20] reported percutaneous needle aspiration was as effective as continuous percutaneous catheter drainage.

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