



## MANAGEMENT STRATEGIES OF LIVER ABSCESS IN A TERTIARY HEALTH CARE CENTRE IN PUDHUCHERRY

<b>Dr.P.Kamalam</b>	M.S., Associate professor, Department of General surgery, Sri Venkateshwaraa medical college hospital and research centre, Ariyur, Pudhucherry.
<b>Dr. E. Priyankadevi*</b>	M.S., Post graduate, Department of General surgery, Sri Venkateshwaraa medical college hospital and research centre, Ariyur, Pudhucherry. *Corresponding Author
<b>Dr.N.Subaashini</b>	M.S., Post graduate, Department of General surgery, Sri Venkateshwaraa medical college hospital and research centre, Ariyur, Pudhucherry.

**ABSTRACT** **INTRODUCTION:** Liver abscess one of the major cases with case mortality rate of more than 15% even in a tertiary health care Centre and this study gives the outcome of all the strategies in the management and also analyses the various outcome.

**AIM AND OBJECTIVES:** To study the various management strategies of liver abscess in a tertiary health care Centre Sri Venkateshwaraa medical college hospital and research Centre, Ariyur, Pudhucherry and its outcome.

**MATERIALS AND METHODS:** The cases that were admitted and diagnosed as liver abscess were taken up for study and it is followed up through his days in hospital and the various treatment the patient underwent were recorded and analyzed. This is a prospective study for a period of 10 months from November 2020 to August 2021 and all the management strategies were recorded and then analyzed. Management strategies include medical management to the laparotomy.

### RESULTS:

There were 22 cases diagnosed to have liver abscess of which 4 cases were managed conservatively, 3 cases laparoscopic drainage, 2 cases laparotomy, 10 cases pig tail drainage and 3 cases needle aspiration done. 2 cases died of which one had malignancy and all the other were treated successfully with no morbidity.

**KEYWORDS :** Liver abscess, medical management, surgical management, pig tail catheterization, needle aspiration, laparoscopy, laparotomy

### INTRODUCTION

Liver abscess was described by Hippocrates as early by 400 B.C.<sup>1</sup> It continuous to be a major diagnostic and therapeutic challenge to the medical fraternity and is a life threatening and a potentially serious condition if left untreated. Therefore, it is very important for prompt diagnosis and appropriate management at the earliest.<sup>2</sup>

The two common types of liver abscess encountered are amoebic liver abscess and pyogenic liver abscess. Amoebiasis is a common infestation in developing countries due to poor sanitary facilities. It affects about 10% of the population all over the world. Amoebic liver abscess is the commonest extra intestinal manifestation of amoebiasis. It affects about 3-9% of patients. India is an endemic zone for amoebic liver abscess. It may present as acute abdomen requiring emergency laparotomy. Spontaneous intraperitoneal rupture, extra and retroperitoneal rupture and intra thoracic rupture are frequently seen in liver abscess. Delay in diagnosis may lead to rupture of liver abscess which may increase the morbidity as well as mortality.<sup>3</sup>

Pyogenic liver abscess is not an uncommon entity. It is a relatively rare complication of intra-abdominal infection or biliary tract infection. It is usually polymicrobial in nature due to the ascending route of infection from the gastrointestinal tract.<sup>4</sup> The overlapping of symptoms between amoebic and pyogenic liver abscess makes early clinical differentiation difficult. This study was conducted to assess the clinical profile and management of liver abscess in patients attending a tertiary referral hospital.

### METHODS

This prospective study was conducted in Sri Venkateshwaraa medical college hospital and research centre Ariyur, Pudhucherry, India from November 2020 to August 2021 for period of 10 months.

The study population consists of patients admitted in General Surgery wards of Sri Venkateshwaraa Medical College Hospital and research centre, Ariyur, Pudhucherry, India with features suggestive of Liver Abscess.

An extensive and thorough history taking, clinical examination, routine blood investigations, chest X-ray PA view, X-ray abdomen AP view, ultrasound abdomen, CT scan abdomen (in selected cases) were done. Presence of Anchovy sauce pus or purulent aspirate from abscess were identified and bacteriological culture and sensitivity of the aspirate were done.

### INCLUSION CRITERIA

Patients admitted in General Surgery wards of Sri Venkateshwaraa medical college hospital and research centre, Ariyur, Pudhucherry, India confirmed to be of liver abscess.

### EXCLUSION CRITERIA

- Hydatid cyst of liver
- Solid masses of the liver
- Primary and Secondary malignancy of liver.
- A total of 22 cases satisfying the inclusion criteria were recruited in the study

### STATISTICAL ANALYSIS

Proportions (%) of various outcome measures of interest of liver abscess were arrived and tabulated

### RESULTS

The data collected during the study period with the help of a prestructured proforma and various epidemiological and statistical details are analyzed.

The results of various parameters namely age, sex, history of alcohol intake, clinical symptoms, clinical signs, presentation and treatment given are shown in Table 1

**Table 1: Clinical profile of patients with liver abscess.**

PARAMETER	NUMBER=22(%)
<b>Age group</b>	
30-40- years	16(72.72%)
41-50 years	4(18.18%)
51-60 years	1(4.54%)
>60 years	1(4.54%)
<b>Sex</b>	
Male	21(95.45%)
Female	1(4.55%)
<b>History of alcohol intake</b>	
Present	16(72.72%)
Amoebic	15(93.75%)
Pyogenic	1(6.25%)
Absent	6(27.27%)
Amoebic	4(66.66%)

Pyogenic	2(33.34%)
<b>Clinical symptoms</b>	
Abdominal pain	22(100%)
Fever	15(68.18%)
Abdominal distension	14(63.63%)
Dysentery	7(31.81%)
<b>Clinical signs</b>	
Rt. Hypochondrial tenderness	22(100%)
Intercostal tenderness	21(95.45%)
Hepatomegaly	13(59.09%)
Jaundice	6(27.27%)
Epigastric mass	1(4.54%)
<b>Lobe involved</b>	
Right	17(77.27%)
Left	5(22.73%)
<b>Treatment</b>	
Single aspiration	3(13.63%)
Percutaneous catheter drainage	10(45.45%)
Laparotomy and drainage	2(9.09%)
Laparoscopic drainage	3(13.63%)
Conservative management	4(18.18%)

## DISCUSSION

Liver abscess continues to be one of the common liver disorders even in the era of improved sanitation and personal hygiene as well as availability of wide range of antimicrobials. This study explores the age incidence, sex preponderance, etiology, clinical presentation and modalities of management of liver abscess cases as seen in tertiary care referral institution.

The number of hospitalizations from November 2020 to August 2021 for liver abscess in our surgical ward were 22

## AGE

Most of the liver abscess cases (72.72%) in our study were in the age group of 30 - 40 years. Seeto R K et al, Tan J A et al have also found this age group to be susceptible for liver abscess.<sup>6,7</sup> Abdullah AA et al in their study on amoebic liver abscess have found that amoebic liver abscess is more common in the age group of 20-45 years.<sup>9</sup>

## SEX

We have observed male preponderance (95.45%) in our study which concurs with the observation by Tan JA et al, Ahsan I et al, Sharma N et al and Goh KL et al<sup>7,8,10,11</sup>. Male predominance is due to different life styles of men and women of our country with males going out for work consume contaminated water and unhygienic food from street vendors and road side hotels whereas women are mostly house bound.<sup>8</sup>

## HISTORY OF ALCOHOL INTAKE

In present study about 16 (72.72%) of patients with liver abscess had history of alcohol intake, of which 15 (93.75%) cases were amoebic abscess and 1 (6.25%) case were pyogenic abscess. Sharma N et al noted history of alcohol consumption in 46.5% of patients and Seeto RK et al noted it in 84% of patients in their study respectively. Alcohol being an immunosuppressant impairs Kupfer cell function and suppresses cell mediated and humoral immunity against Entamoeba histolytica.<sup>6,10</sup>

## CLINICAL SYMPTOMS

The commonest clinical presentation observed in our study was abdominal pain which was found in 100% of cases. This was followed by abdominal distension and fever in about half of the cases. The incidence of dysentery in our study was 31.81%. This is similar to the observations made by Kebede A et al, Seeto KR et al, Abdullah AA, Sharma N et al and Bukhari AJ et al<sup>6,9,10,13</sup>. The low incidence of dysentery compared to other symptoms is due to invasive form of amoebiasis causing amoebic liver abscess and pyogenic liver abscess mainly due to biliary etiology

## CLINICAL SIGNS

On examination, all liver abscess cases in our study had right hypochondrial pain and intercostal tenderness. Hepatomegaly was noted in about half of the cases and jaundice was present in about one fourth of cases. The earlier reports observed by Kebede et al, Abdullah AA et al<sup>5,9</sup> were concurrent with the findings of present study. In addition, mass in the epigastric region was noted in one patient in present study.

## PRESENTATION

The most commonly involved region of the liver in our study was the right lobe in about 77.27% of cases which is in accordance with the findings observed by Kebede A et al, Sharma N et al, Qazi AR et al, Khar RA et al in their studies.<sup>5,10,12,14</sup> The reason why right lobe of their liver is more prone to develop abscess than the left lobe is due to greater volume of blood going to right side than the left lobe.

## TREATMENT

Most of the liver abscess cases were managed surgically in our study. About 13% of case were treated by single aspiration. Percutaneous catheter drainage was the mode of treatment in 45.45% of cases, laparoscopic drainage is done in 13.63%, 9.09% of cases needed laparotomy and drainage all of which were ruptured abscesses. 18.18% of patients in whom the abscesses size was less than 5 centimeters were managed conservatively. Zerem E et al reported needle aspiration either single or multiple was successful in 67% of patients and percutaneous catheter drainage was successful in 100% of patients.<sup>15</sup> A similar observation was made by Qazi AR et al, McGarr PL et al, Ramani A et al.<sup>12,16,17</sup>

## CONCLUSION

Liver abscess is not an uncommon disease we encounter in our set up. Actually, it is showing a rising trend nowadays. It affects all ranges but preferably middle-aged men between 20-40 years of age. Male have increased incidence showing their alcoholism behavior predisposing them. Female are very less prone. Literacy and socioeconomic conditions play a vital role in the incidence of the disease.

Management- per cutaneous continuous drainage with pig tail catheter edges over per cutaneous needle aspiration in all aspects of effectiveness and the cost and also the hospital stay and morbidity in the form of pain in all the episodes of aspiration. It is the preferred and recommended one in case of single abscess cavity in the right lobe and in the anterior segments of left lobe. For multiple abscess and for non-liquefied abscess it will be the laparoscopic drainage seems to be the preferred option if the surgeon is confident and well equipped.

Laparoscopic approach needs good technique and higher end accessories to help draining a difficult to approach segments of the liver.

Mortality depends on the time of presentation to the health care facility. Delay causes more mortality. Any abscess less than five cm can be treated medically. Demerits being of the small sample size it is difficult to extrapolate these results. If the sample size is large the study could statistically stronger than it is now.

Liver abscess is manageable with the strategies planned according to the presentation with all the modalities available.

**Financial support and sponsorship:** nil

**Conflicts of interest:** there are no conflicts of interest

## REFERENCES

- Rahimian JI, Wilson T, Oram V, Holzman RS. Pyogenic Liver abscess: Recent trends in Etiology and Mortality. Clin Infect Dis. 2004;39(11):1654-9.
- Rao S, Solaymani-Mohammadi S, Patri W Hepatic Amebiasis, A reminder of the Complications, Curr Opin Pediatr, 2009;21:145-9
- Memon AS, Siddiqui FG, Menon HA, Ali SA. Management of ruptured amoebic liver abscess: 22 years experience. J Ayub Med Col Abbottabad 2010;22(2):96-9.
- Wang JH, Liu YC, Lee SS, Yen MY, Chen YS, Wang JH, et al. Primary Liver Abscess due to Klebsiella pneumoniae in Taiwan. Clinical Infectious Diseases. 1998;26(6):1434-8.
- Kebede A, Kassa E, Senait A, Woldemichael T, Polderman AM, Petros B, et al. Amoebic liver abscess: A 20 year retrospective analysis; EJHD 2004;18(3):199-202.
- Seeto RK, Rockey DC. Amoebic liver abscess: Clinical Features and Outcome; WJM February 1999;170(2):104-9.
- Tan JA, Chu CJ, Lira CP, Ong HC. A Non-Invasive Approach in the Diagnosis of Amoebic Abscess. Phil J Microbiol Infect Dis. 1988;17(1):25-8.
- Ashan TI, Jehangir MU, Mahmood T, Ahmed N, Saleem M, Shahid M, et al. Amoebic versus pyogenic liver abscess. J Pak Med Assoc. 2002;52(11):497-501.
- Abdullah AA. Clinical analysis of Amoebic liver abscess. IJGE. 2005;5(1):35-8.
- Sharma NI, Sharma A, Varma S, Lal A, Singh V. Amoebic liver abscess in the medical emergency of a North Indian hospital; BMC Research Notes, 2010;3(1):21.
- Goh KL, Wong NW, Paramsothy M, Nojog M, Somasundaram K. Liver abscess in the tropics: experience in the University Hospital, Kuala Lumpur. Postgraduate Med J. 1987;63(741):551-4
- Qazi AR, Naqvi SQ, Solangi RA, Memon JM, Lashari A. Liver Abscess Diagnosis and Treatment. Pakistan J Surg. 2008;24:203-7
- Bukhari AJ, Abid KJ. Amoebic liver abscess: clinical presentation and diagnostic difficulties. KMJ. 2003;183-6.
- Khan RA, Hameed F, Bashir MB, Rana MM, Mazhar HR. Amoebic liver abscess; incidence and outcome. Professional Med J. 2010;17(4)
- Zerem E, Hadzic A. Sonographically guided Percutaneous catheter drainage versus Needle aspiration in the management of Pyogenic liver abscess. American journal of

- Radiology.2007;189(3):W138-42
16. Me Garr PL, Madiba TE, Thomson SR, Corr P. Amoebic liver abscess-Results of a conservative management policy. SAMJ.2003;93(2):132-6
  17. Ramani A, Ramani R, Kumar MS, Lakhkar BN, Kundaje GN. Ultrasound-guided needle aspiration of amoebic liver abscess. Postgrad M.J. 1993;69(811):381-3