



To Study the Treatment Approaches of Liver Abscess In a Tertiary Care Centre

Dr. Kriti Shekhar⁽¹⁾, Dr. Dhiraj Kumar⁽²⁾, Dr. S.K.Sagar⁽³⁾, Dr. Punit Kumar⁽⁴⁾

Submitted: 01-03-2022

Revised: 10-03-2022

Accepted: 12-03-2022

I. INTRODUCTION

Liver comprises 48% of all the visceral abscesses¹. Liver abscess involves collection of purulent material in liver parenchyma due to bacterial, parasitic, fungal, or mixed infections. Liver abscess is common in India with the 2nd highest incidence due to poor sanitation, overcrowding and inadequate nutrition². Worldwide, approximately 40-50 million people are infected annually with amoebic abscesses. Prevalence of infection is higher than 5%-10% in endemic areas³. Various studies from rural areas of Central and South America, India, and the tropical areas of Asia and Africa have reported prevalence rate as high as 55%^{4,5}. Pyogenic liver abscess has an estimated global incidence of 1.1 - 2.3 per 100,000 person-years and in United States, the incidence is approximately 3.6 per 100,000 and rising⁴. Broadly divided into amoebic liver abscess (ALA) and pyogenic liver abscess (PLA) with majority of amoebic etiology in developing countries and pyogenic in developed countries⁵. Amoebic and pyogenic liver abscess share many clinical, laboratory and imaging feature, but they exhibit significant differences in the epidemiology and the treatment, hence the differentiation is essential for effective treatment⁵.

From the past liver abscess is an uncommon entity that has seen fairly dramatic changes in demographics, etiology, diagnosis, and treatment over the past 100 years. While the mortality from liver abscess has decreased significantly since the early 20th century, the incidence appears to be increasing⁴. Though modern diagnostics like ultrasound and computed tomography to locate and drain the abscess have reduced the mortality to 2-12% there is still high morbidity due to the complications of liver abscess especially the amoebic liver abscess¹. The management of liver abscess has always been a dilemma for any clinician, to decide, when to perform a therapeutic aspiration and when to avoid it.

In the past the incidence of liver abscess, a rare but potentially life-threatening infection, appears to be increasing worldwide¹. The use of

antibiotics, imaging and less invasive procedures for source control have improved treatment outcomes over the last century, but mortality remains high⁵.

A wide variety of bacteria have been described as causes of pyogenic liver abscess (PLA), but published data on associations of bacterial species with clinical presentation, radiological findings and prognosis are sparse. *Entamoeba histolytica*, a protozoan parasite, is also a well-recognized non-bacterial cause of liver abscess. In Europe, cases of amoebic liver abscess (ALA) are rare and usually imported, whereas in some highly endemic areas ALA can be more common than PLA². There is good evidence that ALA can be treated successfully with shorter courses of antimicrobial therapy than PLA, and that drainage is generally not required³. However, there is limited evidence as to how PLA and ALA can be distinguished clinically or radiologically².

As liver is an organ which is prone to developing abscesses. It is a serious ailment fraught with a multitude of serious complications. Whereas amoebic liver abscess is the commonest abscess in the under developed tropical world, pyogenic abscess is more commonly encountered in the developed countries³. The high incidence of amoebic liver abscess can be attributed to malnutrition, poor personal hygiene, inadequate sanitary conditions and overcrowding³. In the case of pyogenic abscess, micro-organisms may invade the liver via the portal circulation, systemic circulation, contiguous organs and biliary stasis due to bile duct obstruction. In 50% cases of pyogenic abscess no obvious predisposing focus of infection can be identified. The overlap of symptoms between amoebic and pyogenic liver abscess makes early clinical differentiation difficult and hence jeopardizes correct management³.

II. MATERIAL AND METHODS

The aim of this study was to study the treatment approaches of liver abscess including a total of 78 patients. The study was conducted as a prospective study from November 2019 to April 2021 in Shri Ram Murti Smarak Institute of



Medical Sciences, Bareilly. Inclusion criteria of the study was all the patients diagnosed with liver abscess giving written informed consent for the study.

III. OBSERVATIONS

Total 78 patients who met the inclusion criteria were studied.

In this study, a total of 78 patients were included, those that met the inclusion criteria. Out of 78 patients, the minimum age of presentation was 19 years and maximum age of presentation was 76 years. The mean age of distribution is 43.17 years.

In this study, the most common clinical presentation was that of pain abdomen, which was present in 74 out of a total of 78 patients (94.9%). The second most common presentation was that of fever, present in a total of 15 patients (19.2%). Out of 78 patients, 14 patients presented with jaundice (17.9%).

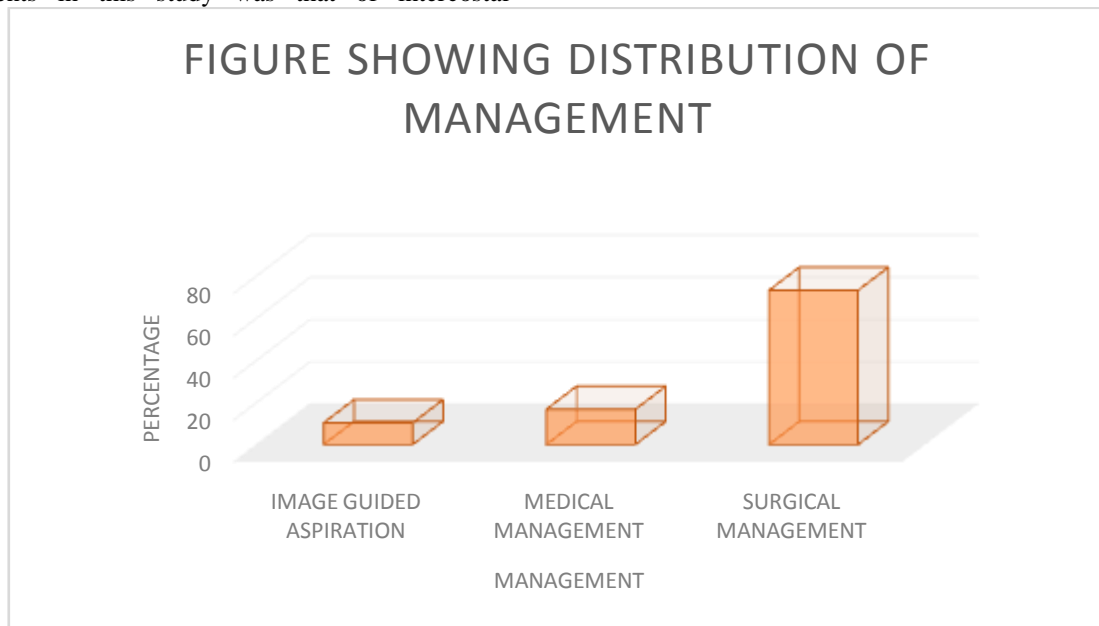
The most common clinical sign elicited in patients in this study was that of intercostal

tenderness, present in 63 out of 78 patients (80.8%).

In this study, in case of pyogenic liver abscess most common presentation was fever, whereas in case of amoebic liver abscess most common presentation was abdominal pain.

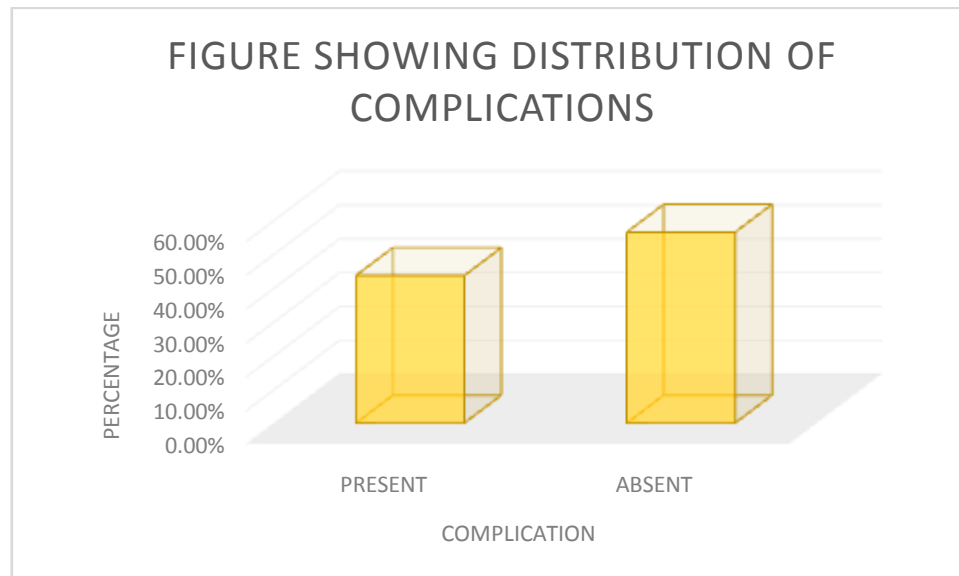
Out of 78 patients, 5 patients presented with symptoms of subacute intestinal obstruction, due to peritonitis, 1 patient presented with symptom of loss of appetite, 2 presented with multiple episodes of vomiting, whereas, 5 patients presented with complaints of respiratory distress, due to pleural effusion secondary to liver abscess.

Out of 64 patients of amoebic liver abscess, 60 patients presented with clinical feature of pain abdomen (93.75%), and out of 14 patients of pyogenic liver abscess, all 14 presented with clinical feature of pain abdomen (100%). Overall this difference was found to be statistically non-significant since calculated P value was observed to be greater than .05 level.



Out of 78 patients in our study, 13 patients (16.7%) responded to medical management alone. In this study 8 patients (10.3%) were treated by image guided aspiration or drainage. Those who

required surgical drainage were 57 patient (73.1%), who are all not responding to the above modalities of treatment and those with complication.



Out of 78 patients included in this study, 34 patients presented with complications (43.6%). The complications of liver abscess were seen in patients who had residual liver abscess in the abscess cavity, 6 out of 78 patients (0.09%), those whose number of days stayed in the hospital were increased due to increase in morbidity, 24 out of 78 patients (30.7%) and those that met mortality, 4 out of 78 (0.05%).

IV. DISCUSSION

Our study, including a total of 78 patients, was conducted as a prospective study from November 2019 to April 2021. In our study, we discussed the different clinical presentation in patients presenting with liver abscess, the treatment modalities used for liver abscess, and the outcome of the different treatment modalities used in cases diagnosed with liver abscess.

In the study conducted by Soumik Ghosh et al, the most common method of management used was image guided aspiration of liver abscess⁵⁶, whereas, in our study, out of 78 patients in our study, 13 patients (16.7%) responded to medical management alone. 8 patients (10.3%) were treated by image guided aspiration or drainage. Those who required and treated by surgical drainage were 57 patients (73.1%), who are all not responding to the above modalities of treatment and those with complications. In another study conducted by John D. Christein. et al, a total of 32 out of 288 patients were intervened upon surgically. Reasons for operation in those patients included, septic shock, occurring in 13 patients (41%), multiple organ failure (10%), failure of

medical management (36%), and failure to make a diagnosis (10%)⁵⁸.

In the same study conducted by John D. Christein. et al, percutaneous drainage of liver abscess was done as initial line of management in a total of 15 out of 32 patients (47%), 9 out of those 15 patients (60%) required operative intervention secondary to uncontrolled sepsis⁵⁸.

In our study, 1 out of 8 cases of image guided aspiration was done via CT guided aspiration, due to failure of the ultrasound to detect the exact location of the abscess cavity. 1 out of the image guided aspiration was also opted for pigtail insertion for drainage of the abscess due to failure of aspiration via wide bore needle, as the abscess was viscous and could not be drained via a wide bore needle.

Out of 78 patients included in our study, complications of liver abscess were seen in a total of 34 patients (43.6%). The complications included residual abscess in the abscess cavity, seen in a total of 6 patients out of 78 patients (0.09%). Morbidity was seen in 24 out of 78 patients (30.7%). Mortality was seen in 4 out of 78 patients (0.05%). Compared to the study done by Sharma et al which included 200 patients in which mortality was seen in a total of 2.5% patients.

V. CONCLUSION

Young, alcoholic male from lower socioeconomic group with amoebic liver abscess presenting as a solitary right lobe abscess was the most common pattern seen in our study. This was in accordance to the study conducted by Sharma et al, in which a similar result was concluded.



Most common liver abscess presenting in our institution was amoebic in nature. Most common age of presentation was 43 years. Most common presentation of liver abscess was abdominal pain. Most common clinical sign was intercostal tenderness.

Ultrasound and CT scan abdomen plays an important role in diagnosing most of the liver abscess patients presented in our institution. Thirteen patients were managed successfully with medical management alone.

Those who are all not responding to medical management were treated with image guided drainage/aspiration. Eight patients that presented with liver abscess in our institution were successfully treated by image guided drainage/aspiration. The rest of the patients were intervened surgically in view of failure of conservative management and/or complications due to liver abscess.

BIBLIOGRAPHY

- [1]. Dori F, Zaleznik, Dennis L, Kasper. Liver abscess. In: Braunwald E, Fauci AS, Kasper DL, Hauser SL, Longo DL, Jameson JL, eds. Harrison's Principles of Internal Medicine. 15th ed. McGraw- Hill Inc: New York. 2001;1:832-3.
- [2]. Channanna C, Rehman FU, Choudhuri B, Patil A. A clinical study, diagnosis and management of Liver Abscess at VIMS, Bellary. J Evidence Based Med Health Care. 2014;1:668-85.
- [3]. Stanley SL Jr. Amoebiasis. Lancet. 2003;361:1025- 34.
- [4]. Haque R, Duggal P, Ali IM, Hossain MB. Innate and acquired resistance to amebiasis in Bangladeshi children. J Infect Dis. 2002;186:547-52.
- [5]. Ralston KS, Petri WA Jr. Tissue destruction and invasion by *Entamoeba histolytica*. Trends in Parasitology. 2011;27:254-63.