



**ORIGINAL RESEARCH PAPER**

**Surgery**

**LIVER ABSCESS AND ITS VARIOUS COMPLICATIONS: A RETROSPECTIVE STUDY AT A TERTIARY CARE CENTREI**

**KEY WORDS:**

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**ABSTRACT**

Liver Abscess (LA) is defined as filled space occupying lesion inside liver. Pyogenic, amoebic and fungal are the three major forms of liver abscess. Individuals with suppressed cell immunity are more commonly encountered with amoebic liver abscess. Liver abscess may be a life threatening condition. Fifty-three patients of confirmed liver abscess are included in this study. The main concern of our data analysis is to study various complications that develop in patients of liver abscess.

**INTRODUCTION**

Liver is the largest internal organ in the body. It is responsible for multiple functions that the body needs to survive, of which detoxification of blood from various substances is one. Liver Abscess (LA) is defined as filled space occupying lesion inside liver. It is known to us since the times of Hippocrates. It has become one of the most common communicable diseases with much more prevalence in underdeveloped and developing countries. Pyogenic, amoebic and fungal are the three major forms of liver abscess. Pyogenic liver abscess is polymicrobial and its severity depends upon the bacterial source and underlying condition of the patient. The parasite responsible for amoebic liver abscess is Entamoeba Histolytica and it is more common in areas where this agent is endemic. Individuals with suppressed cell immunity are more commonly encountered with amoebic liver abscess.(1) Commonly known etiologies are biliary infection, portal vein seeding, direct extension, hepatic artery seeding, penetrating trauma and cryptogenic cause. (2) The lesion may be solitary or multiple involving one or both the lobes of liver, while involvement of right lobe is more common. Liver abscess may be a life threatening condition and if untreated its uniformly fatal. Presentations are variable but the triad that is generally seen is of right upper quadrant pain, fever and jaundice. Patients also present with acute abdomen, some with rupture of abscess and others with associated caecal perforation. (3) Imaging remains the main modality for diagnosis. Due to wide acceptance and easy availability USG is an appropriate initial imaging modality with a sensitivity of 94%. (3)

Plain radiographs are insensitive and usually normal but helps in the diagnosis of pleural effusion and extra luminal free air on abdominal films.(4) The aim of this study was to describe the various complications which arises in patients of liver abscess.

**MATERIAL AND METHODS**

A retrospective study was conducted in Department of General Surgery at JN Medical College and Hospital, AMU, ALIGARH; over a period of 2 years from January 2016 – December 2017. Fifty-three patients with confirmed diagnosis of liver abscess are included in the study and data from records were abstracted. Data on patient particulars, clinical presentations, investigations, treatment and outcome were collected. The investigations performed in all the patients were complete blood counts, kidney and liver function tests, viral markers, abdominal USG, chest and abdominal radiographs, blood cultures, lower GI endoscopy and aspiration study. Data regarding all the complications that developed during the course of hospital stay and after discharge was also assembled. All the collected data was analyzed.

**RESULTS**

Fifty-three patients of confirmed liver abscess are included in this study. The age range from 16 to 70 years (mean age being 37.8 ± 12.84 years).

Highest incidence was found in age group of 31 – 40 years with n = 19. Males (n=52) outnumbered females (n=1) with male to female ratio of m/mjfrghjgh(M:F 52:1). Out of 53 patients 17 (32%) presented within 7 days while 36 (68 %) presented between 7 to 21 days of onset of symptoms. Of a total of 53 patients 28 (53.7%) had a history of alcoholism which points towards a predisposition in such patients. Of the 28 alcoholic patients, 20 were amoebic and 8 were pyogenic.

Ultrasonography was done in all 53 patients while contrast CT was done in 3 patients. At the time of presentation 14 patients (26.4%) had counts < 11,000/ uL while 39 patients (73.6%) had counts ≥ 11,000/ uL. Serum bilirubin was raised in 19 patients( 35.8%) considering normal values 0.1 – 1.2 mg/dL. with mean being 1.186 ± 0.87. seven ( 13.2%)patients had INR in normal range (0.9 – 1.1) while 46 (86.8%) had raised INR with mean INR of 1.34. 23 patients ( 43.4%) had multiple abscess cavities while 30 had(56.6%) single cavity. Anemia was present in 16 patients (30.2%) with mean Hb 10.8 ± 2.1 gm/dL. 45 (84.9%)patients were managed by USG guided needle aspiration while pigtail insertion was done in 8 (15.1%)patients. 9 out of 45 required reaspiration of residual abscess and 3 out of 45 was aspirated thrice. Out of 53 patients 7 presented with acute abdomen in which emergency exploratory laparotomy was performed.

Talking about complications lower GI endoscopy was done in all the subjects of whom 7 had positive findings. 3 were having multiple ulcers in colon and caecum, 1 with rectosigmoid ulcer, 1 with proctitis with rectosigmoid ulcer, 1 with internalhaemorrhoids and 1 with healed colon ulcers. 7 patients who had a presentation of acute abdomen, on exploration all 7 was having ruptured amoebic liver abscess with 2 having caecal perforation additionally.1 presented with rupture of abscess into the right pleural cavity. 9 out of 45 patients in which USG guided aspiration of pus cavity was done, found to be having residual abscess in review USG after 5 days of intervention and reaspiration was done, while 3 out of 45 was aspirated thrice. Hypoproteinaemia was accounted in 6 patients during hospital stay. 8 patients developed pleural effusion of right side while 1 in 53 had bilateral pleural effusion. 2 out of 9 patients who developed pleural effusion required drainage through chest tube insertion (ICTD). 9 Patients had persistent fever even after 5 days of initiation of IV antibiotics, while 4 patients developed tender hepatomegaly. 7 patients landed up in severe sepsis and required higher dependency care. Ascites became significant in only 3 patients. 15 patients had respiratory discomfort out of which 9 was having pleural effusion.

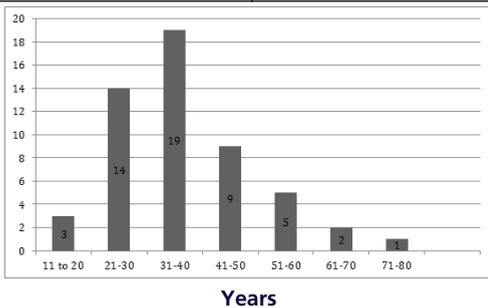
**DISCUSSION**

Liver abscess is known and treated since times of Hippocrates (400BC) and during those days, mortality rate was very high i.e. up to 70-90%<sup>15</sup>. With the development of new radiologic techniques, improvement in microbiologic identification, advancement of drainage techniques and operative procedures, the mortality rate has come down. Yet the incidence rate has relatively remained unchanged but with the early diagnosis and treatment, the mortality has come down to a significant level in those patients attending to hospitals.

In our study there is male preponderance in both pyogenic and amoebic liver abscess, the reason may be more alcohol consumption in this gender. The peak incidence is found in age group of 31-40 years. The main concern of our data analysis is to study various complications that develop in patients of liver abscess. Out of 53 subjects 21 developed complications in one or the other form. The most common complication that we have accounted in this study is of respiratory discomfort (n=15) followed by generalized sepsis (n=7). Out of 15 patients who had respiratory discomfort 9 were having pleural effusion while 4 had tender hepatomegaly, and in 3 patients ascites had developed significantly. In addition to this morbidities included persistent fever, anemia, hypoproteinaemia, multiple colonic ulcers and internal haemorrhoids, caecal perforation, intra peritoneal and intra pleural rupture. 7 patients who had a presentation of acute abdomen, on exploration all 7 was having ruptured amoebic liver abscess with 2 having caecal perforation additionally<sup>6-8</sup>. However, due to early diagnosis and aggressive management of the condition as well as of developed complications no mortality was recorded in this study at our tertiary health center.

**Table 1. Age wise distribution of cases**

Age-group (years)	Frequency (n)
11-20	3 (5.6%)
21-30	14 (26.4%)
31-40	19 (35.8%)
41-50	9 (16.9%)
51-60	5 (9.4%)
61-70	2 (3.7%)
71-80	1 (1.9%)

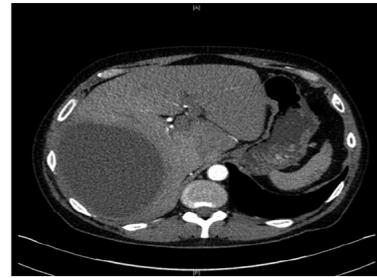


**Table 2. Various complications and their rate**

Complication	Rate	
Respiratory discomfort	15	
Pleural effusion	U/L	8
	B/L	1
Sepsis	7	
Acute abdomen	7	
Abscess rupture	7	
Tender Hepatomegaly	4	
Colonic ulcer	4	
Gross ascites	3	
Caecal perforation	2	
Internal haemorrhoids	1	
Recto sigmoid ulcer	1	
Proctitis	1	
Rupture into pleura	1	

**Table 3. Distribution according to management**

Conservative	Invasive		
0	Needle aspiration		Pigtail insertion
	45	Once	33
		Twice	9
		Thrice	3
			8



**Image 1(a)**



**Image 1(b)**

**Image 1 showing CT scans of liver abscess (a) single large cavity of abscess in rt lobe of liver. (b) multiple cavities.**



**Image 2. Showing multiple cavities of liver abscess in ultrasonography.**



**Image 3. Anchovy sauce appearance of amoebic liver abscess.**



**Image 4. Plain chest radiograph showing right pleural effusion.**



**Image 5. Rupture into peritoneal cavity.**



**Image 6. Rupture into right pleural cavity.**

### CONCLUSION

Liver is responsible for multiple functions that the body needs to survive. Liver Abscess (LA) is defined as filled space occupying lesion inside liver. It is known to us since the times of Hippocrates. It has become one of the most common communicable diseases with much more prevalence in underdeveloped and developing countries. Liver abscess may be a life threatening condition and if untreated its uniformly fatal. Indicators of a poor prognosis have been described since 1938 and include multiplicity of abscesses, underlying malignancy, severity of underlying medical conditions, presence of complications, and delay in diagnosis. Here, in this study we have described the various complications encountered in patients of liver abscess and their various modes of management.

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