

# Prospective evaluation and diagnosis of liver abscess by clinical examination

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## **Abstract**

**Background&Method:** *Laparoscopic drainage of liver abscesses in combination with systemic antibiotics is a safe and useful alternative in all patients who require surgical drainage following failed medical or percutaneous drainage treatment and in those with large abscesses. Operative techniques have started on intravenous antibiotics and the laparoscopic procedure was performed under general anaesthesia with endotracheal intubation. The patient was placed in the reverse Trendelenburg position and a pneumoperitoneum was created with a veres needle to a pressure of 09-12 mm Hg.*

**Result:** *Pain in the right upper abdomen, fever and hepatomegaly were the most common presenting features in 99.5% of patient. History of alcoholic intake leading to liver abscess was 36%, while 36.84% of cases presented with mid jaundice. History of past dysentery was 34.21%. In the study by Abuabara etal(1982), the most common symptom of ALA was Right upper abdominal pain (94%), fever (77%) and hepatomegaly(54%). In the study by Charles etal(1989), the most common symptom was fever(70-80%), hepatomegaly (56-65%), right upper abdominal pain (50%). Hematological investigation were carried out in all patients the mean hemoglobin value was 10.1 gm/dL with a range of 5.0 gm% to 14.5 gm%. Leucocytosis, predominantly polymorphonuclear was observed, the mean leucocyte count was 13,500 cells/cumm with a range of 5,500-32,000 cells/cumm. The serum bilirubin was elevated in 60 (101) cases, the values ranging from 1.8-17 mg% with a mean of 3.39 mg%. Hypoproteinemia was observed in majority of cases, the values ranging from 4.8-8.9 mg/dl with a mean value of 6.47mg/dl.*

**Conclusion:** *In summary , the most common presenting features were Fever, Hepatomegaly, with males in the age group 41-50 being mostly affected. Right lobe involvement (singly) with raised dome of diaphragm were seen most commonly on radiological investigations. PLA should be treated with broad spectrum antibiotics and in abscesses larger than 2.5 cm, aspiration should be done. Operative intervention is required for intra-abdominal infections that are seeding the liver abscess.*

**Keywords:** *diagnosis, liver abscess, clinical and radiological.*

**Study Designed:** *Observational Study*

## **1. INTRODUCTION**

Pyogenic and amoebic abscesses are uncommon entities that show the characteristics of a space occupying cavitory hepatic lesion of infectious origin[1]. Hepatic abscess have been recognized since the time of Hippocrates, but an understanding of their etiology,

bacteriology, diagnosis and treatment is a recent event of the 20th century and still emerging. Out of the two types of hepatic abscesses, amoebic and pyogenic, the latter is associated with a higher mortality rate and is more common in developing subtropical countries on the hospital admission. Both types are rare probably not more than 6 to 10 cases per 100,000 hospital admissions /year. The incidence of amoebic abscess may equal or exceed that of pyogenic abscesses[2].

The diagnostic modalities of computed tomography (CT) scan and ultrasound have reduced the number of unrecognized and therefore, untreated abscesses. Supportive care, including fluid and antibiotic management in the intensive care unit has markedly improved operative management and more timely intervention has improved and so reduced operative morbidity and mortality[3].

The liver receives blood from both the systemic and portal circulation and increased susceptibility to infections would be expected given the increased exposure to bacteria. However, Kupffer cells lining the hepatic sinusoids clear bacteria so efficiently that infection rarely occurs, multiple processes have been associated with the development of hepatic abscesses[4].

Biliary tract disease remains the most common source of pyogenic liver abscess and accounts for 60% of cases. Obstruction of bile flow allows for bacterial proliferation. Thorough pressurization and distension of canaliculi, portal tributaries and lymphatics are invaded with subsequent pylephlebitic abscess formation[5&6].

Cholecystitis, stricture (benign or malignant), malignancy, and congenital diseases are common inciting conditions, with a biliary source abscesses usually are multiple unless they are associated with surgical interventions or indwelling biliary stents.

## **2. MATERIAL & METHOD**

Present study was conducted at Arogya Sadan Hospital, Jhansi, Uttar Pradesh from 2017 January to 2018 January. Laparoscopic drainage of liver abscesses in combination with systemic antibiotics is a safe and useful alternative in all patients who require surgical drainage following failed medical or percutaneous drainage treatment and in those with large abscesses. On total 38 patients.

### **Operative techniques:**

Operative techniques have started on intravenous antibiotics and the laparoscopic procedure was performed under general anaesthesia with endotracheal intubation. The patient was placed in the reverse Trendelenburg position and a pneumoperitoneum was created with a Veres needle to a pressure of 9-12 mm Hg.

For most abscesses three laparoscopic ports have adequate access. A 10 mm port sub-umbilical region, 0.5 mm/10mm port in the right mid clavicular line and another in the anterior axillary located line 2-4 cm below the costal margin. Inferiorly located abscess required a fourth port sited to the left of the midline below the costal margin. Fan retractors were then used to lift the liver allowing access to the abscess.

### **A combination of several methods is usually required:**

- (i) Identification of a fluctuant bulge on the surface of the livers.
- (ii) Change in colour of the liver surface from pale to brownish red superficial to the abscess.
- (iii) The presence of fibrinous adhesions between the liver and the parietal peritoneum.
- (iv) Aspiration with a long endoscopy aspiration needle or spinal needle. All abscesses were identified with the above techniques.

Pus aspirated from the abscess sent for culture and determination of sensitivity to antibiotic. Subsequently, the point of the blunt forceps used to follow the needle tract into the abscess cavity. Drainage of the abscess was performed by suction with a suction irrigation. Then followed by copious irrigation of the cavity and peritoneal space with upto 6 litres of warm saline. With the last 500 ml containing 80 mg of Gentamycin antibiotics.

In the event of bleeding, operative maneuvers such as leaving the forceps in situ for about 5 min to allow the blood to clot and seal the tract, or passing the drainage tube through the cavity which then tamponades the wall of the tract.

Then end of procedure two large tube drainage (chest tube size 24-28 Fr) inserted one into the abscess cavity and another in the right or left subphrenic space adjacent to the drainage site in the liver.

After operation Analgesia I/V antibiotics and fluids support and monitored for progression of sepsis, jaundice and bleeding. Ultra sonography or CT was performed weekly in all patients. Starting 1 wk following drainage, once this confirmed solidification of the abscess cavity and resolution of symptoms of the abscess. The drainage tube removed and the patient discharged from hospital on the oral antibiotics on 14 days after the procedure.

Advantages associated with minimal access surgery. These include a decrease in the morbidity associated with a large laparotomy wound as well as the potential for faster postoperative recovery and shorter hospital stay.

The laparoscopic procedure is also potentially repeatable as demonstrated in the patient with the dumbbell shaped abscesses. These are also advantageous over percutaneous drainage, including the opportunity to explore the abdomen adequately and the ability to insert large bore tube drains. Contraindications include the presence of ascites, proximity of vital structures especially with abscesses of the left lobe, coagulations abnormalities and coexistence of the indication for laparotomy. For example acute cholangitis, complication of liver abscess.

### 3. RESULTS

Table No. 1: Age Distribution

Age Group	No. of Cases	Percentage
0 to 10 years	01	2.6
11 to 20 years	02	5.2
21 to 30 years	06	15.7
31 to 40 years	12	23.6
41 to 50 years	10	26.3
51 to 60 years	12	21.0
61 to 70 years	01	2.6
71 to 80 years	01	2.6
More than 81 years	-	-
Total	38	

Table No. 2: Presenting Features in Patients of Liver Abscess

Presenting Feature	No. of Cases	Percentage
Fever	38	100
Hepatomegaly	37	97.3
Pain in right upper abdomen	36	94.7

Weight loss	15	39.4
Jaundice	14	36.8
Alcohol intake	14	36.8
H/o. dysentery in past	12	31.5
Cough	05	13.1

Pain in the right upper abdomen, fever and hepatomegaly were the most common presenting features in 99.5% of patient. History of alcoholic intake leading to liver abscess was 36%, while 36.84% of cases presented with mid jaundice. History of past dysentery was 34.21%. In the study by Abuabara et al (1982), the most common symptom of ALA was Right upper abdominal pain (94%), fever (77%) and hepatomegaly (54%). In the study by Charles et al (1989), the most common symptom was fever (70-80%), hepatomegaly (56-65%), right upper abdominal pain (50%).

Table No. 3: Clinical Findings

Clinical Finding	No.	%	Mean Level
Hemoglobin (5.0 – 15 mg/dL) < 10 gm/dL	15/35	42	10.1 gm/dL
Total Leucocyte Count (5,500 to 32,000) > 12000 cumm	22/38	59.2	13,500 cumm
Serum bilirubin (>1.8 mg/dL)	15/25	59.4	03.39 mg/dL
Serum alkaline phosphates (>162IU/dl)	10/17	64.6	291.58 IU/dL
Decreased serum protein (<6.5mg/ dl)	08/17	54.83	06.47 mg/dl

Hematological investigation was carried out in all patients the mean hemoglobin value was 10.1 gm/dL with a range of 5.0 gm% to 14.5 gm%. Leucocytosis, predominantly polymorphonuclear was observed, the mean leucocyte count was 13,500 cells/cumm with a range of 5,500-32,000 cells/cumm. The serum bilirubin was elevated in 30 (50) cases, the values ranging from 1.8-17 mg% with a mean of 3.39 mg%. Hypoproteinemia was observed in majority of cases. The values ranging from 4.8-8.9 mg/dl with a mean value of 6.47 mg/dl.

#### 4. DISCUSSION

Amoebic liver abscess is a disease caused by infestation with the protozoan *Entamoeba histolytica*. The disease was recognized long back and was given its current nomenclature [7]. The infection affects at least 10% of the world's population, with the incidence exceeding 30% in the tropical and subtropical regions [8]. Hepatic amoebic abscess is the most frequent extra intestinal complication of amoebiasis and occurs in 01-25% of cases with a mean of 8.5% or 42% of patients hospitalised for amoebiasis.

The diagnosis of amoebic liver abscess was entirely based on the clinical picture with support from the radiological findings and response to treatment (Lament and Pooler, 1958). As the modern investigations developed findings of radionuclide scan were included in the diagnostic criteria by WHO. Now days, the development of serological tests which are accurate in over 90% of cases, have further added the diagnosis of amoebic liver abscess [9]. In our study amoebic liver abscess was diagnosed by an appropriate clinical picture, suggestive radiological picture, serological tests, aspiration of the characteristic amoebic pus' and an excellent response to specific antiamoebic drug therapy,

In our study the prominent presenting features were fever (100%), hepatomegaly (98.50%) and pain in the right upper abdomen (95.2%). These figures match those of the other series and provided an adequate back ground for the suspicion and diagnosis of amoebic liver abscess[10].

## 5. CONCLUSION

In summary , the most common presenting features were Fever, Hepatomegaly, with males in the age group 41-50 being mostly affected. Right lobe involvement (singly) with raised dome of diaphragm were seen most commonly on radiological investigations. PLA should be treated with broad spectrum antibiotics and in abscesses larger than 2.5 cm, aspiration should be done. Operative intervention is required for intra-abdominal infections that are seeding the liver abscess.

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