

Clinical Study of Amoebic Liver Abscess in Rohilkhand Region and Its Management.

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ABSTRACT

Background: To study the clinical presentation of patients with amoebic liver abscess (ALA) and to find elucidate various modalities for its diagnosis and management. **Methods:** A total of 40 patients of ALA were enrolled in the study. SPSS version 15.0 was used for Statistical Analysis. Chi-square test was used. A 'p' value less than 0.05 was considered statistically significant. **Results:** Age of patients ranged from 11 to 70 years. All patients presented with abdominal pain(100%). Majority presented with fever (72.5%) and nausea/vomiting (67.5%). Weight loss (42.50%), cough (32.50%), anorexia (27.50%) and diarrhoea (25.00%) were other common presenting complaints. Alcohol use was reported by 62.5%. Hypochondrium tenderness (60%) and hepatomegaly (52.5%) were clinical findings present in majority of the patients. Chest X-ray revealed pleural effusion in 40% cases. Size of abscess assessed by USG ranged between 7.29-220 cm2. Out of 40 patients, 18 (45.00%) were treated conservatively. Other treatment modalities used were pigtail insertion (25.00%), USG guided needle aspiration (20.00%), laparotomy (5.00%), both USG guided needle aspiration and Pigtail insertion was done in 5% cases. **Conclusion:** ALA is a problem mainly associated with lower socioeconomic strata with alcoholism as a strong risk factor. Timely intervention following a systematic diagnostic approach avoids the adverse outcomes. Community studies to recognize the potential risk factors and to suggest preventive strategies are recommended.

Keywords: Amoebic liver abscess, Laparotomy, Alcoholism.

INTRODUCTION

Liver abscesses are quite rare in the Western countries; however in developing countries like India, they are quite common among the patients attending the OPD services of a hospital. Recent years have seen emergence of new threats that pose the risk of liver abscesses as a result of immunosuppression following organ transplantation, Human Immuno Deficiency Virus (HIV), diabetes and cirrhosis, thus multiplying this risk manifold.^[1]

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Liver abscesses, both amoebic and pyogenic, continue to be an important cause of morbidity and mortality in tropical countries. However, recent advances in interventional radiology, intensive care, progress in antibiotic therapy, and liberal use of sonography and computerized tomography scanning of the abdomen have led to early diagnosis and treatment of patients with liver abscess, thus improving the patient outcome. Percutaneous

drainage of liver abscess has been an important advancement in the treatment of pyogenic liver abscess.^[2] The primary mode of treatment of amoebic liver abscess is medical; however as many as 15% of amoebic abscess may be refractory to medical therapy.^[3] Also, secondary bacterial infection may complicate 20% of amoebic liver abscess.^[4] In such patients and in patients with pyogenic liver abscess, surgical drainage has been the traditional mode of treatment.^[5] However, operative drainage is associated with significant (10-47%) morbidity and mortality. Owing to these specificities, it is of interest to explore the clinical profile, diagnostic features and management protocol in a clinical situation so as to understand the problem in a better way. Hence, the present study was planned to be carried out as a clinical study of amoebic liver abscess in patients presenting to a tertiary care centre in North India.

Aim and Objectives:

1. To study the clinical presentation of patients with amoebic liver abscess.
2. To study various modalities for diagnosis of amoebic liver abscess.
3. To study the management of amoebic liver abscess

MATERIALS AND METHODS

The study was conducted in the Department of General Surgery, Rohilkhand Medical College & Hospital from November 2014 till December 2015 on 40 patients who were admitted from casualty and outpatient department with a provisional diagnosis of amoebic liver abscess (ALA). The diagnosis of ALA was based on the history, complete physical examination, amoebic serology and ultrasound examination. Patients diagnosed with pyogenic liver abscess were excluded from the study.

The patients in the study group were subjected to:

1. A complete general medical and physical examination.
2. Investigations like i. Complete Haemogram. ii. Liver function test. iii. Prothrombin time. iv. Serum creatinine. v. Amoebic serology test. vi. ECG vii. Stool examination. viii. Ultrasound Abdomen. ix. Chest X-ray. x Aspirate Microscopy/ Culture & sensitivity tests. All patients were counselled on their disease and due consent was taken for any procedure performed. Amoebic liver abscess was diagnosed usually as a solitary abscess on ultrasonography or aspiration of anchovy sauce like pus. Medical treatment consisted of antibiotics on the basis of culture and sensitivity reports and intravenous metronidazole. Empirical antibiotics were started in patients in whom culture was sterile. For those who did not responded to therapy in three days, chloroquine was added, followed by Diloxanidefuroate to eliminate luminal infection. Paediatric patients received age appropriate doses.

Needle aspiration was done in the following patients:

1. Those in which the size of the abscess cavity was greater than five centimeters on initial ultrasonography.
2. Those in the left lobe of the liver.
3. Failure of therapy in three days and especially if difficult to differentiate from pyogenic abscess.
4. Age older than 55 years.

Pigtail catheter drainage was reserved for those where the pus was deemed too thick for aspiration. Surgical drainage (laparotomy) was carried out only in two patients for the complication of abscess perforation leading to perforation peritonitis. All collected pus was sent for gram staining, culture and sensitivity, aspirate microscopy for isolation of *E. histolytica* and amoebic serology test. A meticulous record of the demographic data, clinical presentation, radiological findings, laboratory reports, procedures performed, clinical progress, complications, duration of hospital stay was maintained in a specially prepared proforma for this purpose. A statistical review of all relevant data was done.

RESULTS

In age groups 21-30, 31-40 and 51-60, all the patients were males.

Proportion of females in age group Upto 20, 41-50 and >60 years was 25.00%, 12.50% and 100% respectively. Association of age and gender was found to be statistically significant ($p=0.005$).

Table 1: Association of Age and Gender

| Age Group (years) | Females (n=3) | | Males (n=37) | | Total (N=40) | |
|--------------------------------|---------------|--------|--------------|--------|--------------|------|
| | No. | % | No. | % | No. | % |
| Upto 20 | 1 | 25.00 | 3 | 75.00 | 4 | 10.0 |
| 21-30 | 0 | 0.00 | 11 | 100.00 | 11 | 27.5 |
| 31-40 | 0 | 0.00 | 14 | 100.00 | 14 | 35.0 |
| 41-50 | 1 | 12.50 | 7 | 87.50 | 8 | 20.0 |
| 51-60 | 0 | 0.00 | 2 | 100.00 | 2 | 5.0 |
| >60 | 1 | 100.00 | 0 | 0.00 | 1 | 2.5 |
| $\chi^2=16.577(df=5); p=0.005$ | | | | | | |

Table 2: Distribution of Study subjects according to Amoebic Serology (n=22)

| Amoebic Serology | No. of subjects | Percentage |
|------------------|-----------------|------------|
| Positive | 12 | 54.55 |
| Negative | 10 | 45.45 |

Amoebic serology was done in 22 patients only. Serological findings were positive in 12 (54.55%) and negative in rest 10 (45.45%).

Table 3: Incidence of Presenting Symptoms in Study subjects

| Presenting Symptoms | No. of subjects | Percentage |
|---------------------|-----------------|------------|
| Pain abdomen | 40 | 100.00 |
| Fever | 29 | 72.50 |
| Nausea/Vomiting | 27 | 67.50 |
| Anorexia | 11 | 27.50 |
| Weight Loss | 17 | 42.50 |
| Diarrhea | 10 | 25.00 |
| Cough | 13 | 32.50 |

Pain in abdomen was presenting symptom in all the patients. Fever (72.50%) and nausea & vomiting (67.50%) were present in majority of the patients. Weight loss (42.50%), cough (32.50%), anorexia (27.50%) and diarrhoea (25.00%) were other presenting symptoms.

Table 4: Hematological/Biochemical Profile of Study subjects

| Variable | No. | Min. | Max | Mean | SD |
|--------------------|-----|-------|--------|--------|--------|
| Hb | 40 | 4.90 | 14.10 | 10.67 | 1.89 |
| TLC (x100) | 40 | 2650 | 32000 | 14069 | 6915 |
| DLC (Polymorph) | 40 | 28.00 | 95.00 | 78.58 | 13.22 |
| DLC (Lymphocyte) | 40 | 4.00 | 65.00 | 15.00 | 11.54 |
| DLC (Eosinophil) | 40 | 0.00 | 7.00 | 2.83 | 2.16 |
| DLC (Monocytes) | 40 | 0.00 | 10.00 | 3.20 | 2.11 |
| Blood Urea | 40 | 20.00 | 140.00 | 47.29 | 30.08 |
| S.Creatinine | 40 | 0.58 | 2.70 | 1.11 | 0.47 |
| S Bilirubin Total | 40 | 0.20 | 4.30 | 1.00 | 0.80 |
| S Bilirubin Direct | 40 | 0.10 | 1.60 | 0.44 | 0.37 |
| SGOT | 40 | 13.00 | 816.00 | 101.95 | 157.16 |
| SGPT | 40 | 14.00 | 652.00 | 82.23 | 117.93 |
| ALP | 40 | 62.00 | 497.00 | 201.87 | 109.24 |
| Total Protein | 37 | 4.50 | 7.90 | 6.20 | 2.97 |
| S. albumin | 37 | 2.00 | 4.00 | 2.97 | 0.52 |
| PT | 40 | 12.00 | 35.00 | 16.88 | 4.52 |
| INR | 40 | 1.00 | 2.90 | 1.51 | 0.43 |

Table 5: Distribution of Study subjects according to Treatment

| Treatment Method | No. of subjects | Percentage |
|--|-----------------|------------|
| Conservative | 18 | 45.00 |
| Laparotomy | 2 | 5.00 |
| Pigtail insertion | 10 | 25.00 |
| USG guided needle aspiration | 8 | 20.00 |
| USG guided needle aspiration and pigtail insertion | 2 | 5.00 |

Most common treatment was conservative (45.00%), followed by pigtail catheter drainage (25.00%) and then USG guided needle aspiration (20.00%). Laparotomy was done in 2 (5.00%) patients. USG guided needle aspiration followed by pigtail catheter drainage was done in 2 (5.00%) patients.

Table 6: Final Outcome of Study Subjects (n=40)

| Outcome | No. of subjects | Percentage |
|------------|-----------------|------------|
| Recurrence | 2 | 5.00 |
| Resolved | 38 | 95.00 |

Out of 40 subjects, liver abscess resolved in 38 and in only 2 cases recurrence was reported.

DISCUSSION

Hepatic or liver abscesses are localised collections of necrotic inflammatory tissue caused by bacterial, parasitic or fungal agents.^[6] The two most common abscesses being pyogenic and amoebic. In our settings, amoebic liver abscess (ALA) are relatively more common and potentially life-threatening complications of infection with the protozoan parasite *Entamoeba histolytica*. *E. histolytica* is widely distributed throughout the tropics and subtropics, causing up to 40 million infections annually. The parasite is transmitted via the fecal-oral route, and once it establishes itself in the colon, it has the propensity to invade the mucosa, leading to ulceration and colitis, and to disseminate to distant extra intestinal sites, the most common of which is the liver. According to WHO fact sheet, it is prevalent throughout the under developed and developing nations of the tropics with up to 50 million true *E.histolytica* infections and approximately 100,000 deaths occur each year mostly from liver abscesses or other complications.^[7] Despite its medical importance, little is known about the current epidemiology of amoebic liver abscess but it is assumed that the disease is prevalent within *E. histolytica* endemic countries. Owing to lack of systematic literature, its clinical identification and subsequent management is challenging. Considering this fact, the present study was carried out in order to study the clinical presentation and diagnosis of patients with amoebic

liver abscess and to subsequently studies the management of amoebic liver abscess.

The age profile of patients in present study is close to that reported by Kebede *et al.* (2004)^[8] who reported the age range of patients from 14 to 66 years and mean age 36 years. Overview of the age profile of amoebic liver abscess also shows that the problem is mainly restricted to less developed or developing countries only. In present study, majority of patients (92.5%) were males. The male to female ratio was phenomenally high at 12.33. Similar to age profile variability in gender profile of patients of amoebic liver abscess has also been shown in literature. In present study, serological positivity rate was 54.55%. In present study, we used combined criteria for recognition of amoebic liver abscess based on the history, complete physical examination, amoebic serology and ultrasound examination. Contrary to this several studies have based their diagnosis on the basis of seropositivity alone.^[9-11] One of the reasons for excluding the seropositivity as the inclusion criteria was the fact that a number of patients in our series had a previous history of treatment and antibiotic intake which might have affected the serological results and hence serological assessment as the sole criteria was ruled out. Similar to our methodology, Haque *et al.*^[12] also based their diagnosis on the basis of multiple diagnostic criteria instead of basing their diagnosis on serology alone. In present study, conservative management was done in 45% cases whereas in remaining 55% - three different surgical modalities were used. In general medical management is the primary mode of treatment.^[3] Similar to our study, Zafar *et al.* (2002)^[13] also used conservative management as the primary mode of treatment depending on the size of liver abscess. The proportion of patients undergoing medical management varies in different series depending on the clinicopathological profile of the patient. Djossou *et al.* (2003)^[14] in their study reported use of medical management in 65% of their patients. In another study, Memon *et al.* (2010)^[15] also adopted conservative management approach in 55% of their patients. Among different interventions, Pigtail insertion (25%) was most common followed by USG aspiration (20%), Laparotomy (5%). Both USG guided needle aspiration and Pigtail insertion was done in 5% cases. Percutaneous pigtail approach is one of the preferred approaches for interventional management of amoebic liver abscesses. Lokanandham (2015)^[16] in their study used variable interventions – of which pigtail drainage was more common (22.5%) as compared to open surgery (5.8%). No doubt minimal invasive techniques like percutaneous drainage using pigtail catheter and USG guided needle aspiration are better than open procedure but their usefulness in larger abscesses is often doubted.^[17] In present study we also followed the same strategy in mind.

In present study, success rate was 95%. This is close to success rate of 96.3% as reported by Zafaret al. (2002).^[13] The success rate has been reported to be dependent on mode of treatment used. Aras et al. (2005)^[18] in their study reported success rate of 88.1% while using a conservative management approach whereas Jha et al. (2015)^[19] reported it to be successful in 100% of cases undergoing percutaneous catheter drainage.

CONCLUSION

ALA is a problem mainly associated with lower socioeconomic strata with alcoholism as a strong risk factor. Timely intervention following a systematic diagnostic approach avoids the adverse outcomes. Community studies to recognize the potential risk factors and to suggest preventive strategies are recommended.

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