AMOEBIC LIVER ABSCESS: CLINICAL PROFILE IN RURAL AREA IN NORTH INDIA
R.S. Hooda¹, Pawan Tiwari², Madhu Tiwari³, H. G. Vyas⁴

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ABSTRACT: This prospective study was carried out on 41 patients with clinically and ultrasonographically confirmed amoebic liver abscess (ALA). All patients were evaluated clinically and by ultrasound on admission and day 15 and subsequently after 3 and 6 months. The majorities were young or middle aged males (65.85%) belonging to the lower socio-economic group. 70.73% gave history of alcohol consumption of locally fermented brands. The common clinical manifestations were right upper quadrant pain (92%). None of the liver function tests were diagnostic though alkaline phosphatase was elevated in 70.73% of patients. Ultrasonography was useful in diagnosis and guiding needle aspiration. The size of the abscesses varied from 2cm to 15cm in diameter. Five (12.19%) patients underwent ultrasound guided needle aspiration, required surgical drainage and the rest required antiamoebic drugs alone. Initial response was better in aspirated group but resolution of abscess (by ultrasound) after 6 months was similar. There were no complications of the procedure and no deaths. Needle aspiration combined with chemotherapy represents a successful therapeutic approach in the management of ALA. Despite successful therapy, 10 of our 41 patients had residual abscess cavity on ultrasound examination even after 6 months demonstrating that complete resolution of ALA is slow.

KEY WORDS: Amoebiasis, abscess, liver.

INTRODUCTION: Infestations with the protozoan Entamoebahistolytica are worldwide in distribution but more common throughout the tropical and sub-tropical areas. It is a major problem in India¹-². Amoebic liver abscess (ALA) is the most frequent extra intestinal complication. Poor hygiene, contaminated drinking water, malnutrition, hepatic dysfunction, low host resistance, alcohol intake, delayed or inadequate treatment are all responsible for the disease in the lower socioeconomic group.

This prospective study was carried out on 41 consecutive patients of ALA admitted to a rural referral hospital in North India. Our experience is presented in this article.

METHODS: Forty one consecutive patients suffering from ALA admitted to our hospital from February 2010 June 2013 were included in the study. All the patients were subjected to a thorough clinical examination after obtaining a detailed history. The diagnosis was based on clinical examination and ultrasonography study. One or more lesions in the liver with characteristic features of ALA were seen on ultrasound examination.

RESULTS: The age of the patients varied from 18 to 65 years. The peak incidence was in the third and fourth decades of life accounting for 14 patients (34.14%) of total case studies (Table 1).
ALA occurred predominantly in males (82.92%). A history of previous intestinal amebiasis was present in only six patients. 29 (70.73%) patients consumed alcohol mostly liquor prepared locally. Such patients had large abscesses and poor general health. Pain in the abdomen (87.80%) and fever (75.60%) were the most common symptoms at presentation and tender hepatomegaly (95.15%) and intercostal tenderness (73.17%) were the most common signs (Table 2).

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Number of patients</th>
<th>Signs</th>
<th>Number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain</td>
<td>36</td>
<td>87.80</td>
<td>Hepatomegaly</td>
</tr>
<tr>
<td>Fever</td>
<td>31</td>
<td>75.60</td>
<td>Intercostal tenderness</td>
</tr>
<tr>
<td>Anorexia</td>
<td>21</td>
<td>51.21</td>
<td>Icterus</td>
</tr>
<tr>
<td>Nausea</td>
<td>19</td>
<td>46.34</td>
<td>Respiratory signs</td>
</tr>
<tr>
<td>Jaundice</td>
<td>7</td>
<td>17.07</td>
<td>Acute abdomen</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>4</td>
<td>09.75</td>
<td>Ascites</td>
</tr>
<tr>
<td>Cough with expectoration</td>
<td>2</td>
<td>04.87</td>
<td></td>
</tr>
</tbody>
</table>

Icterus was observed in 7 (13.07%) patients and 2 (4.87%) patients had signs of pneumonia or pleural effusion at presentation. 6 (14.62%) patients presented with features of acute abdomen with signs of localized peritonitis.

Laboratory studies showed a neutrophilic leukocytosis and elevated sedimentation rate in 22 and 23 patients respectively. A normocytic normochromic or microcytic anaemia was seen in 18 (43.90%) patients. Though the transaminase level (ALT and AST) was elevated in only 14 (34.14%) patients, the serum alkaline phosphatase level was elevated in 29 (70.73%) patients.
An ultrasound scan was done in all patients and in 36 (87.80%) patients an abscess was found in the right lobe, whereas in 2 (04.87%) patients the left lobe was involved. In 3 (07.31%) patients both lobes were involved (Table 4). The abscesses varied in size from 2 cm to 15 cm in diameter. Five patients had abscess size more than six cms. in diameter.

<table>
<thead>
<tr>
<th>Findings</th>
<th>Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatomegaly</td>
<td>36</td>
<td>87.80</td>
</tr>
<tr>
<td>Situation of abscess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right lobe</td>
<td>36</td>
<td>87.80</td>
</tr>
<tr>
<td>Left lobe</td>
<td>2</td>
<td>04.87</td>
</tr>
<tr>
<td>Both lobes</td>
<td>3</td>
<td>07.31</td>
</tr>
<tr>
<td>Number of Abscesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>38</td>
<td>92.68</td>
</tr>
<tr>
<td>Multiple</td>
<td>3</td>
<td>07.31</td>
</tr>
<tr>
<td>Size of abscess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;6.0 cms</td>
<td>36</td>
<td>87.80</td>
</tr>
<tr>
<td>&gt;6.0 cms</td>
<td>5</td>
<td>12.19</td>
</tr>
</tbody>
</table>

Antiamoebic drugs (metronidazole and chloroquine) alone were given to 36 (87.80%) patients, 5 (12.19%) underwent percutaneous ultrasound guided needle aspiration in addition to drugs, and none of patients required surgical drainage. Aspiration of the abscess was carried out under strict aseptic conditions. Aspiration was done in those with large abscesses (> 6 cm diameter), high fever, and toxemia, no response to drug therapy.

The patients were evaluated clinically and by ultrasound on admission, on the following 15th day and subsequently at one, three and six months. There was a rapid clinical response in the aspirated group, especially in patients with an abscess more than 6 cm in diameter. In 17 (8.5%) patients the temperature settled to near normal levels after aspiration. Ultrasound after 15 days of initiation of treatment showed significant improvement in the group treated with aspiration but resolution of the abscess was similar after six months. There were no complications in any of the 5 patients subjected to aspiration and subsequently none needed surgical drainage. Although all the patients were asymptomatic after six months, ultrasound examination showed that 10 (24.39%) patients still had a residual abscess cavity.

**DISCUSSION:** Amoebic liver abscess is widely prevalent in the Indian subcontinent. In this study, the most common age affected was the 20-50 year old group and the male to female ratio was 4.85:1. Similar results have been obtained by other workers. There was a strong association with alcohol intake in 70.73% of the patients. Alcohol is believed to be one of the predisposing factors in the pathogenesis with statistics showing a more than five-fold incidence of ALA among drinkers. History of alcoholism was found in 20-30% of cases by Kini and Mammi. Haiet al found a history of alcohol consumption in 85% of patients with ALA. Joshi et al found a higher mortality rate in those...
Consuming large quantities of alcohol. We found that alcoholics had larger abscesses, greater frequency of complications and delayed resolution of abscesses. Alcohol acts in several ways; a) Hepatic damage by the alcohol predisposes to organ invasion. An amoebistatic substance produced by the normal liver is depressed in alcoholics. b) Habitual drinkers often neglect food and malnutrition resulting in lowering body resistance and suppress liver function. c) Liquor prepared locally with no regard for asepsis has a large population of amoebae in it. d) Alcoholics have poor hygiene which fits with the mode of infection, i.e. faeco-oral. e) Immunity in chronic alcoholics is depressed.

The most common symptom was abdominal pain, and hepatomegaly the most common sign as reported by other workers. We found intercostal tenderness in 73.17% of patients, a reliable sign, not as frequently reported in earlier studies. It is a valuable clinical sign of ALA. Incidence of jaundice varied from 1% to 17% in different studies. We found icterus in 7 (17.07%) patients. Liver transaminase (AST and ALT) levels were elevated in 14 (34.14%) patients and serum alkaline phosphatase was elevated in 29 (70.73%) patients. Elevated alkaline phosphatase levels have also been reported by several workers.

Ultrasound provides valuable high precision information on the location, size and number of ALA as well as detection of established and possible imminent complications. We used ultrasound (in addition to above) in guiding diagnostic and therapeutic aspiration. We found that needle aspiration combined with chemotherapy represents a successful therapeutic approach in the treatment of ALA. Serological tests, such as Eliza and IFAT, though highly reliable in the diagnosis of extra-intestinal amebiasis, are not available in most hospitals in India and needle aspiration provides an economic and safe alternative.

Even after six months, 10 (24.39%) patients had a residual abscess cavity on ultrasound examination. It has been shown that complete resolution of ALA may take years. This is important in the differential diagnosis of spaceoccupying lesions in the liver, especially in those areas with a high incidence of ALA and hepatocellular carcinoma.

Although a large amount of liver tissue appears to be destroyed, the residual liver damage is clinically, biochemically and microscopically minimal. The liver has a great power of near-complete regeneration provided ALA is treated timely and adequately.

CONCLUSION: Amoebic liver abscess (ALA) is the most common extra-intestinal complication of amebiasis in India affecting the young and middle aged men of lower socio-economic group. Prompt treatment results in improved survival and lower morbidity.

REFERENCES:

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