Management of Liver Abscess at Teaching Hospital

Shrestha SK,1 Joshi R,1 Dongol UMS,1 Singh DR,1 Sharma SK1

1Department of Surgery, Kathmandu Medical College Teaching Hospital, Sinamangal, Kathmandu, Nepal.

ABSTRACT

Background: A current assessment of liver abscesses should allow for better understanding of the pathogenesis of the disease and improve the effectiveness of diagnosis and treatment. Amoebic liver abscess occurs more commonly than the pyogenic liver abscess on a worldwide basis. The purpose of the study is to investigate the clinical presentation and management option for liver abscess.

Methods: A prospective observational study was conducted from January 2007 to December 2010, in Kathmandu Medical College Teaching Hospital. We recorded and analyzed the clinical presentations, diagnostic modalities, treatment programmes of all liver abscesses.

Results: Liver abscess was more common in males, 24(85.7%) males and 4(14.3%) females, occurring more frequently in right lobe of liver. Most patients presented with nonspecific clinical and biochemical features. Twenty (71.4%) patients presented with chills & rigors. Five patients (17.8%) presented jaundice and none had transaminases raised but 15(56.3%) had raised alkaline phosphatases. Eight (28.5%) patients were treated with antibiotics alone. USG guided drainage was done in 12(42.8%) patients and 6(21.4%) required surgical exploration with laparoscopic deroofing in 2(7.1%) patients. The largest size was 1100cc. with right lobe predominance in 20(76.9%) patients and single lobe involvement in 22(78.4%) patients. Six (21.4%) patients had multiple liver lobes involved. Three (7.1%) patients had ruptured liver abscess and 3(7.1%) had right sided pleural effusion. Seventeen (60.7%) patients were diagnosed have amoebic liver abscess. Ten (35.7%) patients were found to have pyogenic liver abscess. One (3.5%) had tuberculosis.

Conclusions: Liver abscess requires a high degree of suspicion for early diagnosis. When appropriate therapy in the form of antibiotics in combination with percutaneous drainage or surgery is administered the mortality is very low. However, significant morbidity is still a problem in old debilitated persons with other core morbidities.

Keywords: liver abscess, clinical features, percutaneous drainage and management.

INTRODUCTION

Liver abscess, a potentially life threatening disease, has undergone significant changes in epidemiology, management and mortality over the past decades.1 Percutaneous drainage is widely accepted as a treatment of choice for Liver abscess, because of its minimal invasiveness and high cure rate.2 In the past 20 years, the advent of modern diagnostic imaging techniques allow the precise location of the abscess and development of image guidance for drainage of abscess made mortality decrease to acceptable level.3,4 Availability of potent antibiotics drugs and advance intensive care also contributed to lower the mortality rate.

Correspondence: Dr. Suman Kumar Shrestha, Department of Surgery, Kathmandu Medical College Teaching Hospital, Sinamangal, Kathmandu, Nepal. Email: suman_shrestha@hotmail.com, Phone: 9851032851.
The treatment of amoebic liver abscess which are not secondarily infected consists of aspiration and the use of amoebicides and open operation should be employed only in those cases in which there is infection with pyogenic microorganisms. The low morbidity and high success rate in treating liver abscesses by percutaneous catheter drainage suggest that this therapy should be tried before operative intervention is considered.

METHODS

A prospective observational study was conducted from January 2007 to December 2010, in Department of Surgery, Kathmandu Medical College Teaching Hospital. We recorded and analyzed the clinical presentations, diagnostic modalities, treatment of all liver abscesses. The inclusion criteria for the study are patients aged 8-70 years of both genders and clinical and USG diagnosis of liver abscess. The ethical approval was taken. The exclusion criteria were previous abdominal and biliary surgeries, immunosuppression and abdominal neoplasm antecedents. The variables of age, sex, clinical features, laboratory data and USG investigations including number, size and location of abscesses are recorded. The factor studied also includes microbiologic data and type of treatment. The variable was analyzed with respect to the clinical course and mortality rate. Mortality is defined as death in 30 days after treatment or discharge from the hospital. The study population was sequential patients with clinical and the USG diagnosis of liver abscesses.

The diagnosis was made by clinical features, laboratory investigations and USG findings. Neither CT or radiographic isotope scanning or angiography was used. All patients were initially treated by conservative management. Broad spectrum antibiotics therapy had been initiated and was modified when sensitivity were demonstrated by bacterial cultures. Percutaneous drainage was performed for abscess size more than 3 cm after 3 days of conservative management. This was followed by placement of 14 French pigtail catheters by Sheldinger technique. If the patients’ condition improved after conservative treatment or after percutaneous drainage of the abscess, the antibiotic is continued for 4 weeks. The patients who were unresponsive to conservative treatment or who have complications of rupture of abscess and peritonitis or difficulty in performing in percutaneous drainage were selected for operative drainage open or laparoscopic. The data entry was done in Excel 2007 and analysis was done in SPSS 11.5 version software. Data were analyzed by descriptive statistics that is mean, standard deviation and percentage.

RESULTS

Twenty eight patients with liver abscess were included in this study. The mean age was 35.36±12.72 (range 8-70yrs.) and 24(85.7%) of the patients were males. The most common clinical features were fever with chills, right upper abdominal pain, and weight loss, 20(71.4%), 16(57.1%) and 12(42.8%) of the patients respectively. Clinically obvious jaundice was found in 5(17.8%) patients. Abdominal tenderness in the right hypochondrion was seen in 9(32.1%) patients. Total 2(7.1%) of the patients had ruptured liver abscess with peritonitis (Table 1). The main laboratory findings are shown in table 2. Chest x-rays demonstrated pleural effusion in 3(7.1%) patients. All liver abscesses in this series were identified and located by the ultrasonography.
Table 5. Types of liver abscesses.

<table>
<thead>
<tr>
<th>sex</th>
<th>Amoebic abscess</th>
<th>Pyogenic abscess</th>
<th>Tubercular abscess</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>male</td>
<td>15</td>
<td>8</td>
<td>1</td>
<td>24(85.7%)</td>
</tr>
<tr>
<td>female</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>4(14.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>17(60.7%)</td>
<td>10(35.7%)</td>
<td>1(3.5%)</td>
<td>28(100%)</td>
</tr>
</tbody>
</table>

Table 6. Microbial agents for liver abscess.

<table>
<thead>
<tr>
<th>organisms</th>
<th>No of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. coli</td>
<td>6(21.4%)</td>
</tr>
<tr>
<td>Klebsiella pneumoniae</td>
<td>1(3.6%)</td>
</tr>
<tr>
<td>Proteus</td>
<td>1(3.6%)</td>
</tr>
<tr>
<td>Polymicrobial</td>
<td>2(7.1%)</td>
</tr>
<tr>
<td>E. histolitica</td>
<td>17(60.7%)</td>
</tr>
<tr>
<td>Tuberculosis bacilli</td>
<td>1(3.6%)</td>
</tr>
</tbody>
</table>

DISCUSSION

In general, antibiotics may be an alternative for patients whose disease is too critical to undergo invasive approaches for patients with small, multiple abscesses not amenable to drainage interventions. Several reports have suggested that inadequate empiric antibiotic therapy may result in increased failure rate and increased mortality rate. But in our series, the patients treated with antibiotics alone had an acceptable response with a lower rate of complications. Percutaneous drainage completely cured or shrunk abscess in 11 patients. Our experience and that of others emphasize that percutaneous drainage is as effective as open surgical drainage. Surgical drainage was only indicated in those patients who developed complications such as rupture and peritonitis or when the condition worsened and drainage tube failure. We explored 7 patients with open surgery and one by laparoscopically. Both the groups were discharged in 5-21 days.

Amoebic liver abscess is more prevalent and in most circumstances can be identified and managed without percutaneous drainage. However, an abscess with diameter bigger than 8 cm is associated with failure of medical treatment. But in our series, 8 out of 17 patients had to be drained because of larger sizes.

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The most common pathogen of pyogenic liver abscess was E. coli in our series. The predominant cause of pyogenic liver abscess was also E. coli in other studies. In our series, only one case of abscess was caused by Klebsiella pneumoniae. There were no metastatic complications as mentioned in other literatures. K. pneumoniae is emerging as the cause of hepatic abscess in USA, Korea and Taiwan. It caused metastatic septic complication of lung, eye and central nervous system. We had found one case of tuberculous hepatic abscess which was treated by aspiration and antitubercular therapy. No tuberculous hepatic abscess was reported in literature.

Liver abscesses require a high index of suspicion for early diagnosis.

CONCLUSIONS

Ultrasoundography guided percutaneous drainage for the intrahepatic abscess is the treatment of choice unless complicated by rupture of abscess and peritonitis when laparotomy is indicated. However significant morbidity is still a problem particularly in elderly.

REFERENCES

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