INTRODUCTION

The two most common hepatic abscesses are pyogenic and amebic liver abscesses. Amebic abscesses is more common in developing countries like India, whereas pyogenic is more common in western countries. Pyogenic liver abscess can be single or multiple. The right lobe is more than two times affected as compared to left while in 5% cases both lobes of liver are involved. Amebic liver abscess occurs in population where Entamoeba histolytica is endemic and it affects right lobe in 80% of cases. Hepatic abscesses develop insidiously with fever, sweats, weight loss and no local signs other than painless or slightly tender hepatomegaly. In other patients it presents with abrupt onset of fever, nausea, vomiting, severe abdominal pain and polymorphonucleosis. Whereas pyogenic liver abscess does not show gender difference, amebic abscess is approximately 10 times more common in male sex as compared to females. Computed tomography (CT), and ultrasound are the imaging studies of choice. After medical treatment fails like metronidazole, Cephalosporin in pyogenic liver abscess and Diloxanide froate in amoebic liver abscess we should go surgical intervention. Ultrasonographic guided drainage and percutaneous aspiration can be tried in small abscesses, but catheter drainage should also be taken into consideration. In case of abscess rupture open surgery is indicated. Most
patients with pyogenic liver abscess and those with very large amoebic abscesses, may not recover with antibiotics alone and need drainage guided by ultrasonography or CT. Percutaneous aspiration can be carried out for small abscesses although catheter drainage has become the standard of care. Larger abscesses may also need catheter drainage which is also CT- or ultrasound-guided. Drainage should also be carried out if there is impending rupture.

**MATERIAL AND METHODS**

Out of all patients admitted in the department of Surgery TMMC&RC and associated Hospital from (September 2012 to October 2013), 62 patients were found to have liver abscess in a period of 12 months. Age of patients ranged between 18 to 70 years and out of that 32% were in 25-36 years age group and 68% were above that age group. Males were 74%. Three patients had previous history of abdominal surgery. Routine investigations were done including hemogram, liver function tests, blood sugar, HIV, hepatitis B, X-ray chest and abdomen. Diagnosis was confirmed by ultrasonographic scanning and computerized tomography.

Patients not responding to the medical treatment were put on surgical intervention as soon as possible and study was conducted in three groups.

**Group 1:** Included in this group the patients in whom aspiration of liver abscesses was done under ultrasound guidance and in these patients about 50cc of pus was aspirated.

**Group 2:** In this group we included those patients in whom moderate to large amount of pus filled abscesses were found and a minimal invasive surgery was done under ultrasound guidance.

**Group 3:** In this group were included those patients who had large pus filled cavities and were drained by laparotomy through right subcostal incision. Pus evacuated in all patients was sent for bacteriological examination and for culture and sensitivity.

Post operative antibiotics and IV fluids were given in all groups of patients.

**Treatment modalities used**

**Group 1:** Analgesics, Antibiotic Metronidazole
**Group 2:** P/C Aspiration, Analgesics, Antibiotic, Metronidazole
**Group 3:** Irrigation with Saline with Metronidazole, Analgesics Antibiotic
**Group 4:** Laprotomy.

**RESULTS**

**Table 1: Treatment modality of patients ranging 18-25 yrs**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of patients</th>
<th>Size of cavity</th>
<th>Treatment Group-1</th>
<th>Treatment Group-2</th>
<th>Treatment Group-3</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 yrs</td>
<td>14</td>
<td>CS&lt;2 cm 5 pt</td>
<td>Treated by group-1</td>
<td>Treated by group-2</td>
<td>Treated by group-3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS&gt;2 cm 8 pt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS&gt;5 cm 1 pt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 4 pts treated by group-1 with one day hospital stay and 1 pt didn’t respond to group-1 treatment and treated by group-2 treatment with hospital stay 3 days.
- 6 pts treated by group-2 with hospital stay 3 days.
- 2 pts didn’t respond group-2, treated by group 3 with hospital stay 4 days.

**Table 2: Treatment modality of patients ranging 25-35 yrs**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of patients</th>
<th>Size of cavity</th>
<th>Treatment Group-1</th>
<th>Treatment Group-2</th>
<th>Treatment Group-3</th>
<th>Treatment Group-4</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-35 yrs</td>
<td>37</td>
<td>CS&lt;2cm 11pts</td>
<td>Treated by group-1</td>
<td>Treated by group-2</td>
<td>Treated by group-3</td>
<td>Treated by group-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS&gt;2cm 14pts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS&gt;5cm 12pts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 8 pts t/t by group-1 with hospital stay 1 day.
- 3 pts had no response by group-1 t/t . Treated by group-2.
- 11 pts successful t/t by group-2 with hospital stay 3 days.
- 3 pts unsuccessful t/t by group-2 treated by group-3. Hospital stay 4 days.
- 8 pts respond to t/t by group-3 t/t with hospital stay 4 days.
- 4 pts didn’t respond by group-3 t/t by group-4 with hospital stay 10 days.
Table 3: Treatment modality of patients ranging 35-70 yrs

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of patients</th>
<th>Size of cavity</th>
<th>Treatment Group-1</th>
<th>Treatment Group-2</th>
<th>Treatment Group-3</th>
<th>Treatment Group-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-70 yrs</td>
<td>11</td>
<td>CS&lt;2cm 3pts</td>
<td>Treated by group-1</td>
<td>Treated by group-2</td>
<td>Treated by group-3</td>
<td>Treated by group-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS&gt;2cm 4pts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS&gt;5cm 4pts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td>No pt responded to group-1</td>
<td>1 pt responded to group-2 with hospital stay of 4 days</td>
<td>2 pts respond to group-3 with hospital stay of 4 days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to group-1 t/t with hospital stay of one day</td>
<td>while 3 pts did not respond to t/t by group-2 and treated by group-3 with hospital stay of 4 days</td>
<td>with hospital stay of 4 days, while 2 pts did not respond to group-3 t/t and treated by group-4 t/t (surgical t/t: Laprotomy) with hospital stay of 10 days</td>
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<td></td>
</tr>
</tbody>
</table>

The average recovery period was very short in Group I, where as in moderate to large abscesses it was two to four days. Patients with simple aspiration were discharged from the hospital on next day in satisfactory condition, while in others with pig tail drainage maximum of four days was the stay. Recovery period in contrast to the patients who underwent laparotomy for drainage, was about 10 days.

Overall result is shown in table-4.

Table 4: Patient response to different treatment modalities

<table>
<thead>
<tr>
<th>Age group</th>
<th>t/t by Group I</th>
<th>t/t by group II</th>
<th>t/t by group III/IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 years</td>
<td>04</td>
<td>09</td>
<td>01</td>
</tr>
<tr>
<td>25-35 years</td>
<td>08</td>
<td>25</td>
<td>04</td>
</tr>
<tr>
<td>35-70 years</td>
<td>00</td>
<td>08</td>
<td>03</td>
</tr>
<tr>
<td>Total no of pts</td>
<td>12</td>
<td>42</td>
<td>08</td>
</tr>
</tbody>
</table>

DISCUSSION

Liver abscesses are life-threatening with mortality rate as high as 80 to 90% if left untreated.4

In earlier times when antibiotics were not available open surgical drainage was the treatment of choice.5

Treatment by aspiration followed by antibiotics was described by6 and recently in last few years percutaneous drainage under US has largely replaced surgical drainage.7,8

PYOGENIC LIVER ABSCESS

In half of the cases no identifiable cause of pyogenic liver abscess cannot be ascertained.9,10 With US initially the abscess is hyperechoic but with maturation it becomes hypoechoic. Computed tomography is more specific and sensitive than US.12 Staphylococcus and Streptococcus being the commonest but abscesses originating from intra-abdominal infection, however, usually contain aerobic gram negative rods especially E.coli. Treatment of PLA should individualize. The choice of antibiotic should cover most of common microorganisms cultured from liver abscess. This therapy should consist of a combination of aminoglycosides either with metronidazol or clindamycin or beta-lactam antibiotic. Antibiotic therapy should alone be reserved only for patients in good clinical condition and those who have solitary abscess lesser than 2 cm in diameter, patients must receive antibiotic for 4-6 weeks. “Source control” is essential in surgical treatment of P.L.A. In recent series Bertel et al, (1996)13 have reported an overall 87% and Herman et al (1997)14 91.5% success rate in percutaneous surgical drainage.3,8

Although there are various reports comparing these modalities in the treatment of liver abscess, there are no prospective randomized studies comparing different treatment modalities.

Gerzof et al, 198515 compared the medical treatment, percutaneous and surgical drainage in the retrospective study reporting better result with surgical drainage in total of 26 patients.

AMEBIC LIVER ABSCESS

US findings are good for radiological evaluation of amebic liver abscess which shows peripheral rim with homogeneity.16,17

The first line of treatment in Amoebic liver abscesses is Metronidazole. The size of abscesses is important factor in determining the response of drug, PCD and Catheter drainage offer other modalties of treatment as in Pyogenic abscesses. Metranidazol is given 750 mg 3 times a day for 7-10 days.

Surgical open drainage is indicated only in those patients with complicated Amoebic abscesses e.g. secondary infection or peritonitis with large Pyogenic and Amoebic Liver abscesses.
CONCLUSION

This study revealed that draining the abscesses under ultrasound guidance either by simple aspiration or with pigtail drainage or with any other drainage tube is best surgical minimally invasive method of treatment. It not only reduces the sufferings of patients, hospital stay but also is economical to poor patients as compared to laparotomy or any other major surgical procedure. Thus authors recommends ultrasonic guided aspiration of liver abscesses as far as possible in expert hands of surgeon and ultrasonologist.

REFERENCES

2. Peralta R. Liver Abscess. eMedicine, Sep 2009.


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