

PRESENTATION AND MANAGEMENT OF LIVER ABSCESS

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ABSTRACT

Objective: To study the presentation of liver abscess and its management with especial reference to role of ultrasound guided percutaneous aspiration.

Material and Methods: This study was conducted in all the four medical units of Khyber Teaching Hospital, Peshawar, from 1st June 2001 to 31st march 2003. The diagnosis was confirmed by ultra sonogram but in selected cases CT scan was also performed. A total of 100 cases were included in the study.

Results: 80% patients were males, 84% were from 15 to 50 years. Fever was the most common presentation i.e. 98%, followed by pain right hypochondrium in 96%, anorexia in 84%, hepatomegaly in 78%, and point tenderness in right lower chest in 68%. 64% abscesses were located in right lobe and 77% were single. 30% patients responded to medicines only, 54% patients were subjected to ultrasound guided percutaneous aspiration of abscesses followed by appropriate medical treatment. Only 16% were referred to surgical units for open drainage.

Conclusion: It can be concluded from the above study that amoebic liver abscesses most commonly affect males, who are usually under 50 years of age, fever being the most common presenting feature followed by pain right hypochondrium. Amoebic liver abscesses usually occur in right lobe of liver, most often present as single lesion. Usually it is managed by medicines alone or by percutaneous aspiration under ultrasound guidance. Ultrasound guided percutaneous aspiration in a safe, economical, easy way of management of liver abscess.

Key words: Liver abscess, Amoebic, Pyogenic, Aspiration.

INTRODUCTION

Liver abscess is a collection of pus within the liver parenchyma. The two most important causes are amoebic liver abscess and pyogenic liver abscess. Amoebic liver abscesses are more common than pyogenic liver abscesses. Globally amoebiasis is the third amongst the parasitic causes of death, after malaria and schistosomiasis. Clinically pyogenic liver abscesses are more dangerous than amoebic liver abscesses and patients with pyogenic liver abscesses are more toxic. Clinically patients with amoebic liver abscess are more likely to be male, to be younger than 50 years of age, to have emigrated from or have traveled to endemic areas¹. Amoebic liver abscesses are usually located in posterosuperior part of the right lobe of the liver^{1,2}. The common organisms involved in the pyogenic liver abscesses are *E. Coli*³ followed by *Salmonella*, *Staphylococcus aureus*, *proteus* and anaerobic organisms. Pyogenic liver abscesses are relatively uncommon, but important because they are potentially curable, and prove fatal if left untreated. Ultrasonography, abdominal computed tomography, and magnetic resonance imaging are all excellent for detecting liver abscesses (usually single lesion in right lobe) but are not specific for amoebic liver abscess¹. In selected cases CT scan may be needed to confirm the diagnosis. For differential diagnosis serological and microbiological studies may be done. In order to differentiate amoebic liver abscess from pyogenic liver abscess serological tests like indirect haemagglutination test, complement fixation and gel diffusion tests are done. The sensitivity and specificity of IHA Test for amoebic liver abscess is 100% and 94% respectively⁴. The titre of at least 1:128 is considered positive. However polymerase chain reaction (PCR)⁵ remains the gold standard. Nitroimidazoles, particularly metronidazole, are the main stay of therapy⁶. Drainage of the abscess should be consid-

ered in patients who show no clinical response to drug therapy within 5 to 7 days, or who show high risk of rupture as defined by cavity with a diameter of more than 05 cm or by presence of a lesion in the left lobe⁷. Image guided percutaneous treatment (needle aspiration or catheter drainage) has replaced surgical intervention as the procedure of choice for reducing the size of an abscess⁷.

MATERIAL AND METHODS

Liver abscess is one of the important treatable causes of fever in our population. It compelled us to embark on this study to find out the modes of presentation of liver abscesses and the ways of its management with special reference to the role of ultrasound guided percutaneous aspiration. The study was conducted in all the four medical units of Khyber Teaching Hospital, Peshawar, from 1st of June 2001 to 31st of March 2003. A total of 100 cases were included in the study. The patients were usually admitted with the history of fever. After a detailed history and meticulous clinical examination, the patients were subjected to a battery of relevant investigations. Full blood count, urine routine examination, blood and urine cultures were done in all the patients. Chest X rays were done as a routine. The diagnoses of liver abscesses were confirmed by ultrasound, but in selected cases CT scan abdomen was also performed. Other causes of common febrile illnesses were excluded by relevant investigations. Serological investigations were also performed to differentiate amoebic liver abscess from pyogenic liver abscess. Initially the patients were put on oral metronidazole, 800 mg three times daily for 10-14 days. Treatment was declared successful if after three days patients were afebrile. For the purpose of percutaneous aspiration we included those patients who had right lobe abscess, left lobe abscess, massive abscess

or who were not showing response to medicines. However, those patients who had malignancy associated abscesses, or those abscesses which had already ruptured into other adjacent organs were excluded from the study. All the patients were followed for a period of four months. None of the patients showed relapse. Those patients showing no response to metronidazole, antibiotics, needle aspiration, having multiple abscesses, were referred to the surgeons for open drainage.

RESULTS

Table 1 reveals that most of the patients were males accounting 80%, and more than four fifth i.e. 84% were under 50 years of age. Table 2 shows the clinical presentation, revealing fever as the most common presenting symptom i.e. 98%, followed by pain right hypochondrium in 96%, hepatomegaly in 78%, point tenderness in right lower chest in 68%, jaundice in 24% and other less important symptoms. Table 3 shows that leukocytosis was present in 76%, Serum SGPT was raised in 65% of cases, Indirect Haemagglutination test was positive in 64% and culture reports were positive in 23% of cases. The most important finding in our patients was raised serum ALP in 45% of cases. 64% of the abscesses were located in the right lobe, Table 4, and 77% of the abscesses were single, Table 5. Table 6 reveals that 30% patients were cured with

CLINICAL FEATURES OF THE PATIENTS

| S. No. | SYMPTOMS | Number | Percentage |
|--------|------------------------------------|--------|------------|
| 1. | Fever | 98 | 98% |
| 2. | Pain Right Hypochondrium | 96 | 96% |
| 3. | Anorexia | 84 | 84% |
| 4. | Hepatomegaly | 78 | 78% |
| 5. | Point tenderness right lower chest | 68 | 68% |
| 6. | Cough | 48 | 48% |
| 7. | Vomiting | 31 | 31% |
| 8. | Jaundice | 24 | 24% |
| 9. | History of diarrhoea | 17 | 17% |
| 10. | Hicough | 16 | 16% |
| 11. | Splenomegaly | 12 | 12% |
| 12. | History of dysentery | 12 | 12% |

TABLE - 2

medicines alone, 54% needed ultrasound guided percutaneous aspiration of the abscesses while only 16% were referred to open surgical management.

DISCUSSION

Male predominance over the females is quite obvious from Table 1, this fact has already been documented by Berger et al⁸. It has also been observed that amoebic liver

AGE DISTRIBUTION

| S. No. | Age in Years | No. of Cases | Male | Females | Percentage |
|--------|--------------|--------------|------|---------|------------|
| 1 | 15-30 | 48 | 42 | 06 | 48% |
| 2 | 31-50 | 36 | 26 | 10 | 36% |
| 3 | 51-70 | 16 | 12 | 04 | 16% |
| Total | | | 80 | 20 | 100% |

TABLE - 1

LABORATORY INVESTIGATIONS

| S. No. | Investigation | No of cases | Percentage |
|--------|--|-------------|------------|
| 1. | PMN Leukocytosis | 76 | 76% |
| 2. | Raised SGPT | 65 | 65% |
| 3. | Positive Indirect Haemagglutination Test | 64 | 64% |
| 4. | Raised Rt. Hemidiaphragm | 62 | 62% |
| 5. | Raised ALP | 45 | 45% |
| 6. | Positive Culture from aspirate | 23 | 23% |
| 7. | Raised Bilirubin | 02 | 02% |

TABLE - 3

abscess is 10 times as common in men as in women and is a rare disease in children^{9,10,11}. Although exact underlying cause can not be explained but probably the varying environmental exposure in various occupations may be the predisposing factor. It may be seen in Table 1 that 84% of patients were in the age group of 15 to 50 years. Haque et al has already pointed that amoebic liver abscess usually affects peoples under 50 years of age¹. The Table 2 shows that fever was the most common symptom present in 98% of patients; such a high percentage has already been published by Herbert¹², but Haque RU et al¹ reported fever in 80% of cases. It may also be seen from Table 2 that 31% patients had vomiting, this figure is closely matching the figure of 10 to 35 % already published¹. 12% patients had

DISTRIBUTION OF ABSCESES

| S. No. | Distribution of abscesses | No of cases | Percentage |
|--------|---------------------------|-------------|------------|
| 1. | Right lobe | 64 | 64% |
| 2. | Left lobe | 20 | 20% |
| 3. | Both lobes | 16 | 16% |

TABLE - 4

NUMBER OF ABSCESES

| S. No. | Number of Abscesses | No of cases | Percentage |
|--------|---------------------|-------------|------------|
| 1. | Single abscess | 77 | 77% |
| 2. | Multiple abscesses | 23 | 23% |

TABLE - 5

history of dysentery. None of the patients had past history of amoebic liver abscesses. It has further been observed that liver abscesses may occur months to years after intestinal amoebiasis. Mild polymorphonuclear leukocytosis was noticed in 76 % of patients (Table 2), such an elevated leukocytosis has been reported in most of the studies^{1,3}. Sometimes the patient may present with myeloid leukemoid reaction and show complete remission with metronidazole¹³. Serum ALT was raised in 65 % of our patients, most of the previous studies^{1,11} has reported raised serum ALT in liver abscess. The most interesting finding in our population was raised serum ALP in 45% of patients, but most of the previous studies^{1,11} reported normal serum ALP in liver abscesses. From Table 4 it may be seen that 64% of the abscesses were located in the right lobe, and from Table 5 it may be observed that 77% of the abscesses were single, both of these facts have already been published¹. Table 6 reveals that 86% of patients may be managed in medical ward, i.e. 30% patients were cured by medicines only, and 54% needed percutaneous ultrasound guided aspiration of their abscesses.

MODES OF TREATMENT

| S. No. | Method of treatment | No of cases | Percentage |
|--------|-------------------------|-------------|------------|
| 1. | Medicines only | 30 | 30% |
| 2. | Percutaneous aspiration | 54 | 54% |
| 3. | Surgical Drainage | 16 | 16% |

TABLE - 6

CONCLUSION

It can be concluded from the above study that amoebic liver abscesses most commonly affect males, who are usually under 50 years of age, fever being the most common presenting feature followed by pain right hypochondrium. Amoebic liver abscesses usually occur in right lobe of liver, most often present as single lesion. Usually it is managed by medicines alone or by percutaneous aspiration under ultrasound guidance. Ultrasound guided percutaneous aspiration in a safe, economical, easy way of management of liver abscess.

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