Original Article

Medicine

Outcome with and without Aspiration of the Amoebic Liver Abscess at Civil Hospital, Karachi

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ABSTRACT

Objective: To compare the outcome with and without aspiration of the amoebic liver abscess.

Study Design: Comparative study

Place and Duration of Study: This study was conducted at Medical Wards of Civil Hospital Karachi from August 2010 to September 2011.

Materials and Methods: Study consisted of 100 patients and divided into two groups. Both the groups received medical therapy from day 1 which included Metronidazole injection 500mg i/v 8 hourly. Liver abscess was diagnosed on clinical features, ultrasound finding, aspiration with clinical study and serological tests for amoebiasis In Inclusion criteria; age greater than 12 years and less than 60 years and Evidence of liver abscess on abdominal ultrasound. In Exclusion criteria ; a) Patients of less than 12 years and more than 60 years and pregnant woman.

Results: Mean age of ALA in Group A 36.98+ 3.25 years in both group with male female is ratio of 4:1. Anaemia was present in 76% cases, leukocytosis was found in 90% case. Among them 4(4.44%) cases had leukocyte count greater than 30,000/mm3 with absolute neutrophilia. 16(17.77%) patients had TLC in the range of 21 ,000-30,000/mm3. However, the majority of cases 70 (77.77%) had TLC in the range of 10,000-20,000/mm3 and only 10 patients had normal TLC. ESR was found in triple figure in 24% cases, whereas in 40% cases it was between 50 and 100 and in 36% patients found below 50mm/1st hour. Liver aspiration was done in 72 cases. The colour of aspirate was reddish brown in 60 cases (83.33%) and yellowish in 12 cases (16.66%). Air bubbles were not demonstrated in any case. Trophozoites of Entamoeba histolytica were demonstrated in 5 cases (10%). Serologic test for ALA i.e. indirect haem agglutination test was proved to be very specific with 100% showing high antiamoebic antibody titre. The mean abscess size 6.5 cm in Group A and 7.3 cm in group B. The mean abscess size and the impact of aspiration in terms of normalization in fever, TLC and improvement in LFTs.

Conclusion: Percutaneus aspiration is a safe and effective treatment of amoebic liver abscess disease.

Key Words: Amoebic liver abscess, Percutaneus aspiration, Treatment.

INTRODUCTION

Liver abscess is the macroscopic collection of pus within the liver parenchyma which results from bacterial, parasitic or fungal infections[1,2]. Amoebic liver abscess (ALA) is the most common of all liver abscesses seen in the developing tropical countries. The low socioeconomic class is particularly affected with this disease because of malnutrition, poor personal hygiene, poor sanitary conditions, ignorance and lack of medical facilities [3].

Amoebic liver abscess begin the most common extra intestinal manifestation. The term amoebic hepatitis is sometimes used when there is involvement of the liver but no localization of the abscess, while in other instances there is definite localization of an abscess. Entamoeba histolytica infection of the human being is of worldwide distribution. It is most common in ill sanitated area, particularly in warm climates of the tropical and sub-tropical countries. Invasive disease is common in Southeast Asian countries like Pakistan, India, Bangladesh, the west coast of Africa, Mexico and part of South America [4-6].

Men are more commonly affected by amoebic liver abscess than women[7] but the highest incidence occurs in third to fifth decade of life. Fever and right sided hypochondrial pain is the most common presenting symptom of liver abscess. The important clinical signs are hepatomegaly, tenderness over the hepatic area, jaundice and right sided pleural effusion[8].

The diagnosis of amoebic liver abscess has improved greatly with the use of ultrasound, computed tomography and radionucleotide scan. Ultrasound is the mainstay of diagnosis to locate the size, site and number of abscesses. Amoebic liver abscess, if untreated, is a critical disorder. Recognizing this disease clinically and proving it by u/s is the main method for diagnostic confirmation[9,10].

MATERIALS AND METHODS

Study consisted of 100 patients and divided into two groups. Group A were intended to be treated medically until and unless there is clinical deterioration like persistent increasing temperature, continuous pain and hepatic tenderness etc. in which case needle aspiration was performed. Group B needle aspiration of the abscess along with medical treatment regardless of the size of abscess. Both the groups received medical therapy from day 1 which included Metronidazole injection 500mg i/v 8 hourly.

LA was diagnosed on clinical features, ultrasound finding, aspiration with clinical study and serological tests for amoebiasis. Examination of faeces for trophozoites and cysts of E. histolytica was carried out in all patients. LFTs along with serum proteins and PT were done in all patients with liver abscess before starting treatment and then repeated after approximately 2-3 weeks of therapy and the results were compared.

In Inclusion criteria; age greater than 12 years and less than 60 years and Evidence of liver abscess on abdominal ultrasound. In Exclusion criteria ; a) Patients of less than 12 years and more than 60 years and pregnant woman. Follow up of all these patients was done.

RESULTS

100 patients were diagnosed liver abscess. All had amoebic liver abscess diagnosed on the basis of positive IHA. The age ranged from 10 to 60 years. Mean age of ALA in Group A 36.98± 3.25 years in both group with male female is ratio of 4:1.

Table No.1 Clinical Features in Both Group

Clinical Features	GROUP A N=50		GROUP B N=50
	22 patients aspiration done	28 patients medical management	Aspiration done in all cases along with the medical treatment
Fever	22(100%)	28(100%)	50(100%)
Pain in right hypochondrium	21(95.5%)	24(85.7%)	45(90%)
Anorexia	19(86.36%)	19(67.85%)	42(84%)
Chill	15(68.18%)	18(64.28%)	39(78%)
Nausea & Vomiting	12(54.54%)	16(57.14%)	38(76%)
Loose motion	4(18.18%)	5(17.85%)	29(58%)
Right Sided chest pain	9(40.9%)	9(32.14%)	37(74%)
Generalized Weakness & weight loss	12(54.54%)	5(17.85%)	29(58%)
Dry cough & pleural pain	10(45.45%)	8(28.57%)	32(64%)
Jaundice	15(68.18%)	16(57.14%)	43(86%)
Hepatomegaly	19(86.36%)	24(85.71%)	45(90%)
Hepatic tenderness	21(95.45%)	28(100%)	50(100%)
Splenomegaly	1(4.54%)	0(0%)	1(4.54%)
Punch tenderness	21(95.45%)	21(71.42%)	47(94%)
Encephalopathy	0(0%)	0(0%)	0(0%)

Table No.2: Hematology in all cases of amoebic liver abcess N=100

Investigations	No. of Patients	%age
Haemoglobin		
• Less than 10 gm/dl	76	76%
Greater than 10 gm/dl	24	24%
Leucocytosis		
• 10000-20000/cumm	75	75%
• 21000-3000/cumm	21	21%
• Greater than 3000/cumm	4	4%
ESR		
• Upto 50mm 1st hour	36	36%
• 50-100mm 1st hour	40	40%
• Greater than 100mm 1st hour	24	24%

In Group A, though the intention was no to aspirate but in 22 patients aspiration was performed as these patients showed deterioration in the clinical features within 48 hours of hospitalization. While remaining 28 patients in Group A responded to medical management and were followed-up. The clinical features are given in Table 1. In group B had aspiration of the abscess along with the medical treatment on 1st day. The clinical features are given in Table 1.

Laboratory investigation for 100 cases of amoebic liver abscess. Anaemia was present in 76% cases, leukocytosis was found in 90% case. Among them 4(4.44%) cases had leukocyte count greater than 30,000/mm^3 with absolute neutrophilia. 16(17.77%) patients had TLC in the range of 21 ,000-30,000/mm^3. However, the majority of cases 70 (77.77%) had TLC in the range of 10,000-20,000/mm^3 and only 10 patients

had normal TLC. ESR was found in triple figure in 24% cases, whereas in 40% cases it was between 50 and 100 and in 36% patients found below 50mm/1st hour Table 2.

Table No.3: Ultrasound Finding

	No. of Patients	Percentage
Abscess Location		
• Right lobe	80	80%
• Left lobe	8	8%
• Both lobes	12	12%
No. of abscesses		
• One	74	74%
• Two	16	16%
• Multiple	10	10%

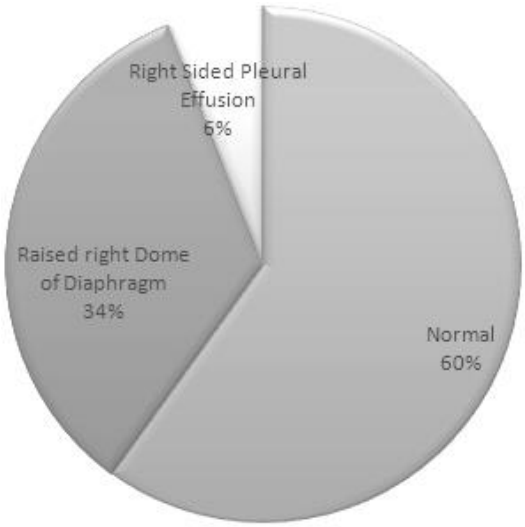

Chart No.1: Radiological Finding

Table No.4: Outcome variables and Hospital stay findings

Variables	Group A	Group B
Mean Abcess Size	6.5± 1.23 cm	7.3± 0.9 cm
Outcome variables		
• Normalization of fever(Mean)	132.42 Hours	60 Hours
• Normalization of TLC (Mean)	10.79 days	9.56 days
• Normalization of LFTs (Mean)	11.96 days	9.63days
Hospital stay		
• 2 to 5 days	1(2%)	7(14%)
• 6 to 10 days	7(14%)	13(26%)
• 11 to 15 days	12(24%)	23(46%)
• 16 to 20 days	25(50%)	6(12%)
• Upto 30 days	5(10%)	1(2%)

Among the LFTs in patients with amoebic liver abscess 60% had total serum bilirubin above 2.5 mg/dl and they were clinically jaundiced, whereas 40% with ALA were not clinically jaundiced but among these 40 patients only 6 patients were have deranged LFTs but total serum bilirubin below 2.5mg/dl . SGPT was raised in 52% cases. Alkaline phasphatase was the most significant enzyme raised in liver abscess 48 cases 96% had elevated serum alkaline phosphatase (the mean rise was 2.5 to 3 fold above normal) enzymes are measured in fold increase as different laboratories have different kits and unit of measurement).Gamma-Glutamyl transferase was raised proportionately and in parallel with serum alkaline phosphatase level(the mean rise was 2 to 2.5 fold). The prothrombin time PT was deranged in 64% cases out of 100 cases of ALA.

Ultrasound findings like site and number of abscesses are given in Table 3 . In 80% cases the abscess was located in right lobe of liver and in 8% cases the abscess was located in left lobe and 12% cases both lobes were involved. In 74% cases there was solitary abscess in liver, in 16% there was two abscesses in liver and 10% cases multiple liver abscess scattered throughout the liver. Other finding in u/s was hepatomegaly in 88.35% cases, splenomegaly in 2.69% cases and pleural effusion in 8% cases.

X-ray chest PA view showed raised right dome of diaphragm in 32% cases and pleural effusion was seen in 8% cases (Chart 1).

Liver aspiration was done in 72 cases. The colour of aspirate was reddish brown in 60 cases (83.33%) and yellowish in 12 cases (16.66%). Air bubbles were not demonstrated in any case. Trophozoites of Entamoeba histolytica were demonstrated in 5 cases (10%). Serologic test for ALA i.e. indirect haem agglutination test was proved to be very specific with 100% showing high antiamoebic antibody titre.

The mean abscess size 6.5 cm in Group A and 7.3 cm in group B. The mean abscess size and the impact of aspiration in terms of normalization in fever, TLC and improvement in LFTs is shown in Table 4. The given data clearly indicates that aspiration resulted in early normalization of all outcome variables.

DISCUSSION

Amoebiasis affects approximately 10% of the population wholeworld and commonest complication of amoebiasis affecting 3–9% victims [11]. Present study comprises 100 patients of ALA. Mean age of ALA in Group A 36.98± 3.25 years in both group with male female is ratio of 4:1. Male predominance in this study is compatible with study of Bukhari AJ [12] reported mean 29 years and 39 male and 14 female with male to female ratio was 2.8:1.

The most important clinical symptoms were fever (100%), right hypochondrial pain, chills and anorexia followed by nausea and vomiting . Fever was of high grade intermittent in most cases and associated with rigors and chills. Pain in right hypochondrium, which

was continuous, aggravated by coughing, breathing and body movement. However in the study of Seeto RK[13] reported clinical fetures ALA were showed that the majority of patients presented with fever (80%), abominal pain (84%) and vomiting, anorexia (64%).

Physical signs observed in this study were punch tenderness 42(84%) in group A while 47(94%) in group B, hepatic tenderness 98% in group A while 100% in group B, hepatomegaly 43(86%) in group A while 45(90%) in group B and jaundice 31(62%) in group A while 43(86%) in group B.

In laboratory investigation anaemia was present in 76% cases, leukocytosis was found in 90% case. Among them 4(4.44%) cases had leukocyte count greater than 30,000/mm^3 with absolute neutrophilia. 16(17.77%) patients had TLC in the range of 21 ,000-30,000/mm^3. However, the majority of cases 70 (77.77%) had TLC in the range of 10,000-20,000/mm^3 and only 10 patients had normal TLC. ESR was found in triple figure in 24% cases, whereas in 40% cases it was between 50 and 100 and in 36% patients found below 50mm/1st hour.However study of Bukhari AJ [11] reported forty-five patients (85%) had leukocytosis, 11(22.6%) had anemia, 27 (50.9%) had abnormal liver function tests reflecting cholestasis and 47 (88.7%) had positive Indirect Hem-Agglutination test. The size of the abscess in the whole series ranged from three to 16 cm (average 10 cm).

Ultrasound scanning has made a major contribution not only in the diagnosis but also in the biopsy, aspiration or drainage procedure. It is harmless, accurate and locates an abscess accurately. Ultrasound is safe, economical and easily available with sensitivity as high as 92–97%[14] .It is also cost effective as compared to CT scan. Ultrasound detected the abscess in all 100 cases and no one was sent for CT scan because of its cost, as most of my patients were from low socioeconomic groups. The ultrasound of 100 cases revealed that they had single and in few cases multiple abscesses. 80% of abscesses were confined to right lobe and 12% abscesses were located in both lobes. Ultrasound is usually more sensitive to internal structure than C. T. The present study confirmed that the most common site of ALA was the right lobe of liver while in the study of Gibney EJ confirms this in his study that right lobe is more involved than the left 1obe[14]. Mahdi in his study showed that all patients had a single abscess and located in right lobe. The preponderance of abscess of the right lobe to left lobe was 8:1[16].

Patients with ALA are usually ill and malnourished. Symptomatic treatment including nutritional support, analgesics, antipyretics and IV fluid for rehydration should be given to all patients before starting specific therapy. In Group A the intention was to treat patients with medical therapy but aspiration was needed in 22 patients because the patients show deterioration in the clinical features within 48 hours. Such patients had mean abscess size about 8.5 cm while remaining 28 patients of Group A had abscess size about 7.4cm. They responded well to medical management and were followed up. In group B had aspiration of the abscess along with the medical treatment on 1st day.

The groups are comparable because mean abscess size is almost equal in both the groups and any significant difference and outcome variables could be legitimately attributed to aspiration only. The mean abscess size and the impact of aspiration in terms of mean normalization of fever 132.42 Hours in group A while in 60 hours in group B , TLC 10.79 days in group A while in 9.56 days in group B and LFTs improvement in 11.96 days days in group A while in 9.63days days in group B . The study of Memon AS [11] also reported that asipration of ALA swift improved the general condition of patient and quickly normalized the fever , TLC LFTs and short hospital stay than convervative mangement.while in our study shorter hospital stay in group B .The hospital stay in this study ranged from 1 to 30 days in both groups with mean length of hospitalization as 18$\pm$4.2 days in group A and 13$\pm$2.5 days in group B.

CONCLUSION

Percutaneus aspiration is a safe and effective treatment of amoebic liver abscess disease. The Percutaneus aspiration procedure with medical treatment has a low rate of complications, earlier fever subside, normalization of TLC, LFTs and shorter hospital stay than only conservative treatment.

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