

AMOEBIC LIVER ABSCESS; NEEDLE ASPIRATION AFTER 96 HOURS OF MEDICAL TREATMENT

DR. SAQIB ZEESHAN, MBBS, FCPS, FRCS

Specialist Surgical Registrar
Letterkenny general hospital letterkenny
Ireland

DR. JEHAN ZEB CHUGHTAI, MBBS, FRCS, MRCS

Registrar St. James hospital
Dublin, Ireland

PROF. DR. AKHTAR ALI TAHIR, MBBS, MCPS, FCPS

Professor of Surgery
NMC, Multan

Dr. Aqsa Masood, MBBS

House Surgeon Nishtar Hospital
Multan

Dr. Saad un Nabi, MBBS

House Physician Nishtar Hospital
Multan

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Abstract: Background: Amoebic Liver Abscess (ALA) is a serious problem in Pakistan. Its management includes antimicrobial drugs, needle aspiration and surgical drainage. **Objective:** To determine if amoebic liver abscess can be treated conservatively or requires needle aspiration as well in selected cases. **Design:** a prospective hospital based study **Setting:** Nishtar Hospital Multan. **Period:** 18 months. **Methods:** Thirty six consecutive adult patients with a right lobe liver abscess were included. All patients received metronidazole 800mg orally for 10-14 days and were clinically observed. Patients who did not show any clinical improvement in 96 hours had an ultrasound guided needle aspiration performed. **Results & conclusion:** Patients having an ALA less than 10 cm in size respond to medical treatment. If patients continue to have toxic symptoms, needle aspiration should be performed. Most patients having ALA of >10 cm will end up having a needle aspiration but should be given a trial of medical management.

keywords Amoebic liver abscess (ALA), treatment, metronidazole, needle aspiration, Entamoeba histolytica

INTRODUCTION

A moebiasis in its various modes of presentation is nearly endemic in countries where overcrowding, poor hygiene and infected water supply are present it affects 10% of the world's population¹. Amoebiasis is caused by the protozoa entamoeba histolytica which mainly affects the colon, in some cases it involves the liver, lungs and brain. Liver abscess is the most common extra intestinal complication effecting 3-9% of patients with amoebic infection².

ALA is traditionally treated with nitroimidazole antibiotics

such as metronidazole or tinidazole.

In addition three invasive therapeutic procedures, ultrasound guided needle aspiration, percutaneous catheter drainage or open surgical abscess drainage are sometimes used^{3,4}.

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Correspondence Adders:
Dr. Saqib Zeeshan MBBS FCPS FRCSI
Specialist surgical registrar
5 Castle Avenue Kilminchy,
Portlaois County Laois, Ireland
saqibzeeshan23@hotmail.com

The treatment of ALA with or without aspiration in addition to amoebicidal drugs is controversial. Some authors do not advocate aspiration, indicating that less than 10% of all abscesses require this additional invasive treatment^{5,6}. Others report good results with needle aspiration in addition to amoebicidal drugs and recommend treating about 80% of amoebic liver abscesses by this approach⁷. Routine aspiration remains debatable and most clinicians believe that medical management alone effectively cures the disease⁸.

There are only a few prospective studies comparing metronidazole treatment alone or combined with needle aspiration.

In Pakistan, patients usually present with large abscesses with toxic features. Needle aspiration may be employed if there is no response to medical treatment or imminence of rupture⁹.

The present prospective study was performed to determine if ALA can be treated alone with metronidazole or in combination with needle aspiration in selected patients.

PATIENTS AND METHODS

This is a prospective hospital based study of 36 consecutive cases of ALA admitted in Nishtar Hospital Multan Pakistan over a period of 18 months.

The diagnosis of ALA was based on clinical features and investigations i.e. the presence of anorexia, fever, pain and tenderness in the right upper abdomen, elevated values for sedimentation rate (ESR), leucocyte counts and sonographic findings of a focal round or oval hypoechoic liver lesion. The patients were examined twice daily for clinical improvement for 4 days. Improvement in fever, pain, anorexia and tenderness in right upper quadrant /hepatomegaly were considered criteria for successful treatment. U/S scan was performed on day of admission and maximum diameter of the abscess was noted and then repeated on day 7 and on follow up one month after discharge to note the size of the abscess. Mean hospital stay was recorded. Patients were kept in hospital for 7-10 days and then seen one month after discharge.

RESULTS

Thirty-six patients were included into the study. Male to female ratio was 29/7. The age ranged between 18 to 70 years (Mean = 32years). The most frequent clinical findings on the day of admission were liver tenderness (86%), pain in right upper abdomen (83%) Pain severity was recorded according to Numerical rating scale (NRS) from 0-10 The mean pain score at presentation was 7 range (3-9) a decrease of 3-4 points on the NRS was taken as improvement in pain. 72% patients had fever. An elevated value of ESR was present in all patients, and raised WCC count was present in 78%. In addition, 62% of the patients had haemoglobin values of less than 12 g/dl. 47% had an abscess less than 5cm in size, 33% had an abscess between 5-10cm and 20% had an abscess more than 10 cm in size. All 36 patients were started on metronidazole 800mg orally TID on admission and regular clinical examination was performed twice daily & vital signs were recorded. In 96 hours 30 (83%) patients showed marked improvement in clinical features including pain, fever and right upper quadrant tenderness. 6 (17%) patients did not settle after 96 hours of medical treatment and continued to have pain, temperature and very little improvement in right upper quadrant tenderness and had ultrasound guided needle aspiration which was performed using a 16G Lumbar puncture needle. 2-3 ml of 1% plain Lignocaine was used for local anaesthesia. A coag screen was performed prior to the procedure. Pus drained was typically anchovy sauce and volume ranged from 396ml – 530ml (mean 436ml). Pus was sent for culture and sensitivity, no growth was obtained in all the specimens.

All patients (17/17) who had a ALA of less than 5 cm settled in 96 hours. 11 of the 12 patients who had an ALA between 5 and 10 cm settled in 96 hours with conservative treatment, 1 patient from this group continued to have pain and tenderness in right upper quadrant and fever and had ultrasound guided needle aspiration, he had an ALA of 8cm. 5 of the 7 patients who had an ALA of more than 10 cm continued to have toxic symptoms and had needle aspiration performed.

Table-I. Clinical presentation of patients with amoebic liver Abscess		
Clinical feature	No of Pts	%Age
Tenderness right upper quadrant	31	86%
Pain right upper quadrant	30	83%
Fever	26	72%
Anaemia	24	66%
Weight loss	13	36%
History of Antecedent dysentery	5	14%
Acute dysentery at time of presentation	3	8%

Table-II. Size of amoebic liver abscess		
Size of ALA	No of Pts	%Age
Up to 5 cm	17	47%
5 - 10 cm	12	33%
More than 10 cm	7	20%

Table-III. Clinical improvement after 96 hours and 6 weeks			
Clinical feature	On admission	After 96 hrs	After 6 weeks
Right upper quadrant tenderness	31/36	7/36	0/36
Pain right Upper quadrant	30/36	6/36	0/36
Fever	26/35	5/36	0/36

Table-IV. Comparison of clinical features used to determine the progress of patients with amoebic liver abscess figures are numbers of patients												
	Abscess size <5cm (N-17)				Abscess size 5-10cm (N-12)				Abscess size >10cm (N-7)			
	Day 1	day 5	day 10	6 wks	Day 1	day 5	day 10	6 wks	Day 1	day 5	day 10	6 wks
Pain abdomen	12	1	-	-	11	1	-	-	7	4	1	-
Fever	10	-	-	-	10	1	-	-	6	4	-	-
Tenderness right upper quadrant	13	1	-	-	11	1	-	-	7	5	1	-

DISCUSSION

Amoebic liver abscess occurs as a complication of intestinal amoebiasis. Although pyogenic liver abscess is common in the west. Amoebic liver abscess is more prevalent in the tropical and sub-tropical countries. The higher frequency of amoebic liver abscess in Pakistan is due to frequent infestation with *Entamoeba histolytica*, as a result of poor personal and environmental hygiene. Although the exact statistical data is not available about the incidence of this disease in Pakistan, It has been reported to be one of the common causes of liver disease.

Diagnosis of amoebic liver abscess is usually established on the basis of the clinical, epidemiological, aetiological and radiological findings. Serological tests, are some times performed however they have a false negative rates varying from 2% to 18% depending on the type of test⁴. Negative serology therefore does not exclude the diagnosis. Both U/S and CT scan are sensitive and accurate in diagnosing amoebic liver abscess. The sonographic and CT features have been extensively described^{5,10,11}. However imaging alone cannot differentiate between pyogenic or amoebic liver abscess.

There are a few reports on the routine aspiration of amoebic liver abscess. Some authorities say routine aspiration is indicated for abscesses >10 cm, left lobe abscesses, impending rupture, failure of medical therapy or if the patient is too ill to withstand operation^{2,12,13}.

Many clinicians believe medical management alone is as effective as aspiration combined with medications and routine aspiration for diagnostic or therapeutic purposes is not indicated^{2,12-14}.

There are varying reports about the size of abscess ideal for needle aspiration. Some consider all abscesses >10 cm should be aspirated¹³ while others consider abscesses >6 cm should be aspirated¹⁵ and still others consider abscess >5cm should be aspirated¹⁶. The results presented here confirm that routine drainage of ALA is not required for effective treatment. Therefore, we suggest that amoebic abscesses with a diameter of up to 10 cm should be treated with amoebicidal drugs, such as metronidazole.

Our study also proves that amoebic liver abscesses more than 10 cm in size are unlikely to respond to medical management alone and will require drainage. Needle aspiration under ultrasound guidance is safe and should be performed in amoebic abscesses more than 10cm in size.

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