

AMOEBIC LIVER ABSCESS: A COMPARATIVE STUDY OF NEEDLE ASPIRATION VERSUS CONSERVATIVE TREATMENT

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BACKGROUND: Amoebic liver abscess is a serious problem in Pakistan. Its management includes antimicrobial drugs, needle aspiration and surgical drainage. This study was done to see the therapeutic efficacy, safety and outcome of ultrasound guided needle aspiration of amoebic liver abscess combined with antiamoebic drugs. **METHODS:** This was a prospective study with a minimum follow up of six months comparing the results of needle aspiration plus antiamoebic drugs with drug treatment alone in Amoebic Liver Abscess. It was carried in Surgical 'B' Unit of Ayub Teaching Hospital from July 1998 to June 2001. The patients were divided into two groups. Group A with abscess $<300\text{ cm}^3$ were treated with drugs alone. Group B patients with abscess $>300\text{ cm}^3$ or smaller abscesses which failed to respond to medical treatment were treated with both needle aspiration and drugs. Main outcome measures were abdominal pain, fever, anorexia, hepatomegaly, resolution of amoebic liver abscess on ultrasound, length of hospital stay and any complications. **RESULTS:** There were 46 patients in the study group. 21 (45.5%) patients were in Group A and 25 (54.5%) in Group B. The ages ranged from 15–70 years. 38 patients were male and 8 were females. The right lobe was involved in 44 (95.5%) patients and left lobe in 2 (4.5%) patients. Mean volume of abscess in Group A was 225 cm^3 and in Group B was 560 cm^3 . Needle aspiration was successful in 24 (96.3%) patients and failed in 1 (3.7%) patient. The mean time of clinical improvement was 7 and 3 days respectively in Groups A and B. The mean hospital stay was shorter in Group B (3.5 day) than Group A (7.5 days). The resolution of abscess seen on ultrasound was rapid in Group B. Complications occurred in only one patient in Group B. No mortality was seen in any group. **CONCLUSIONS:** Needle aspiration combined with antiamoebic drugs is more effective than drug treatment alone in the management of amoebic liver abscess.

INTRODUCTION

Amoebiasis affects 10% of the world population¹. Amoebic Liver Abscess is the most common complication of Amoebiasis and the incidence is 3-9 % of all cases of Amoebiasis². In Pakistan, Amoebic Liver Abscess is endemic. Surgical drainage of Amoebic Liver Abscess has been an accepted therapy for decades. Now modern imaging techniques have changed the diagnostic and therapeutic management of Amoebic Liver Abscess.

Percutaneous drainage with Ultrasound or CT guidance has been reported as an alternative treatment. Routine aspiration remains debatable. Many clinicians believe chemotherapy alone cures the disease³. In Pakistan, patients usually present with large abscesses with toxic features, needing aspiration of abscess to prevent complications. Moreover, needle aspiration may be employed if there is no response to medical treatment or imminence of rupture. The present prospective study was done to study the therapeutic efficacy, safety and outcome of Needle Aspiration of large Amoebic Liver Abscesses combined with antiamoebic drugs by comparing it with drug treatment alone.

MATERIALS AND METHODS

From July, 1998 to June 2001, 49 patients admitted in Surgical 'B' Unit of Ayub Teaching Hospital, Abbottabad were diagnosed to have Amoebic Liver Abscess. The diagnosis was based on clinical features such as Anorexia, Malaise, Fever, Pain abdomen, Hepatomegaly, Leucocytosis, raised ESR, raised Liver Enzymes and Ultrasound evidence of Amoebic Liver Abscess. 3 patients were lost to follow-up and are not included in the study. The patients were divided into two groups. Group A included patients with abscess $<300\text{ cm}^3$ while Group B included patients with abscess $>300\text{ cm}^3$ or smaller abscesses which failed to respond to chemotherapy alone. Metronidazole 2-2.4grams/day and Chloroquine 500mg/day was given to all the patients. Patients with multiple abscesses, impending rupture and ruptured abscesses were not included in the study. Aspiration was done in the ward using 16G Lumbar puncture needle or 14F i.v. cannula and a syringe. 2-3ml of 2% Lignocaine was used for local anesthesia. Ultrasound was done at the end of the procedure to see complete evacuation of abscess. If residual abscess was found, the position and depth of needle was changed or even the puncture site was changed till there was complete evacuation. The numbers of aspirations as well as the number of punctures to evacuate the abscess were noted. The patients were examined daily for clinical improvement. Improvement in pain, fever, anorexia and hepatomegaly were considered criteria for successful treatment. Mean hospital stay was recorded in each group. The follow-up was

weekly for one month and then every two months for six months. On follow-up, ultrasound was also done to see the resolution of liver abscess.

RESULTS

Of the 46 patient in this study, 21 (45.5%) patients in Group A received drug treatment alone while 25 (54.5%) patients in Group B had needle aspiration as well as drug treatment. 38 (82.5 %) were male and 8 (17.5 %) were female. The ages ranged between 15 to 70 years (Mean 32 = years). The two groups were similar in age and sex pattern. 44 (95.5%) patients had right lobe abscess while 2 (4.5%) had left lobe abscess. Mean volume of abscess in group A was 225 cm³ and in Group B was 560 cm³. Two patients with abscess <300 cm³ had needle aspiration because of failure of medical treatment. 22 (88%) required single aspiration, 2 (8%) required two aspirations while 1(4%) require three aspirations. A single puncture was sufficient in 21 (84%) patients while 4 (16 %) required two or more punctures. 300 - 1200 ml (mean 525 ml) pus was drained and sent for culture and sensitivity. Pus drained in only 7 (28%) patients was anchovy-sauce like. Needle aspiration was effective in draining abscess in 24 (96.3%) patients. It failed to drain abscess completely in one (3.7%) patient because the pus was thick. The procedure was well tolerated by the patients. The mean time of clinical improvement was 3 days (2-5 days) in group B and 7 days (3-12 days) in Group A. Improvement in clinical features of both groups are shown in Table-1.

Mean hospital stay in group A was 7.5 days while it was 3.5 days in group B. Complications occurred in 1 (4%) patients after aspiration that bled in the abscess cavity. It was successfully managed conservatively. 21 (84%) of abscess cavities in group B completely resolved at the end of 6 months while 4 (16 %) of abscess cavities resolved more than 50% during the same period. 11 (52.3%) of abscess cavities in group A resolved completely at the end of 6 months, 8 (38%) showed more than 50% resolution while 2 (9.7%) showed <50% resolution (Table-2).

DISCUSSION

Controversies in the management of amoebic liver abscess still exist. Surgical drainage of amoebic liver abscess has been an accepted therapy for decades. The diagnosis & treatment of amoebic liver abscess has changed following advances in the Imaging techniques. Needle aspiration can be done under Ultrasound and CT guidance.

Table-1: Improvement in clinical features

CLINICAL FEATURES		GROUP A (n = 21)	GROUP B (n = 25)
PAIN	On admission	20	25
	On 3 rd day	12	03
FEVER	On admission	20	25
	On 3 rd day	11	03
ANOREXIA	On admission	21	25
	On 3 rd day	20	20
HEPAR	On admission	21	25
	On 3 rd day	20	20

Table-2: Resolution of abscess cavity after 6 months.

RESOLUTION	GROUP A	GROUP B
COMPLETE RESOLUTION	11	21
>50% RESOLUTION	8	4
<50% RESOLUTION	2	0

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^{2,4}. Many clinicians believe chemotherapy alone is as effective as aspiration combined with chemotherapy and routine aspiration for diagnostic or therapeutic purposes is not indicated^{2,3,5}. Many authorities still consider surgical drainage to be the procedure of choice for amoebic liver abscess⁶. However Needle aspiration with chemotherapy is usually the treatment of choice for large amoebic liver abscesses and many studies indicate it is superior to chemotherapy alone⁷⁻¹¹. Therefore nowadays needle aspiration is

the initial treatment of choice of amoebic liver abscess. There are varying reports about the size of abscess ideal for needle aspiration. Some consider all abscesses >10 cm should be aspirated⁴, while others consider abscesses >6 cm¹² and still others consider abscess >5cm should be aspirated¹¹. However, we aspirated abscesses >300 cm³.

Results of this study show a significant difference in the clinical response between the two groups. There was a rapid clinical improvement in Group B which needle aspiration and antiamoebic drugs compared to Group A which received drug treatment alone. These findings are also observed in some other studies⁹⁻¹¹.

We found Needle Aspiration an easy and effective method of treatment of Amoebic Liver Abscesses >300 cm³. It was successful in 96% patient to evacuate the abscess. It failed in only 1 (3.7%) patient because the pus was thick. Failure of needle aspiration of amoebic liver abscess is usually due to either thick pus or multiloculated abscess. In 89% patients, only one aspiration was sufficient to drain the abscess and 11% required more than one aspiration. This study showed that needle aspiration combined with antiamoebic drugs shortened hospital stay. This is also reported in other studies¹⁰. This study also showed that needle aspiration under ultrasound guidance is safe. Only 1 patient had complication that bled in the abscess cavity, however there was no mortality. This is similar to morbidity & mortality figures reported in some other studies^{8,9}. This study also shows accelerated resolution of abscess on ultrasound. These findings were also observed in another study¹¹.

On the basis of our experience, needle aspiration is a rapid, safe and effective method of treating amoebic liver abscess. Routine aspiration of amoebic liver abscess is not indicated. It should be the initial treatment of choice for abscesses >300cm³, impending rupture or abscesses which do not respond to chemotherapy. Routine surgical drainage is also not indicated. Surgery should be restricted to those cases where needle aspiration fails to cure the disease, abscess ruptures or there are multiple abscesses.

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