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ORIGINAL ARTICLE

Liver Abscess in an Endemic Area: a 6-year review of cases

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ABSTRACT
This is a historical review of patients with liver abscess managed at the University of Nigeria Teaching Hospital Enugu, southeast Nigeria before abscess aspiration and drainage were introduced. The clinical features, results of imaging and other investigations, treatment and outcome are presented and analyzed. Data from clinical notes of patients with ultrasound diagnosed liver abscess were retrieved from the Medical Records Department and analyzed using simple descriptive statistics. Twenty three cases of liver abscess were managed between January 2004 and December 2009 . The age ranged from 26 to 64 years with a mean of 38.4 years (SD = 10.6). There were 20 males (M:F ratio of 6.7 : 1). Right upper quadrant abdominal pain, fever and hepatomegaly were the commonest clinical findings. The diagnosis was made with ultrasonography which showed approximately 65 % of the abscesses occurring in the right lobe. Leucocytosis was observed in about 80 % of the patients. All the patients but one were treated with metronidazole only but without aspiration or drainage with a hundred per cent recovery rate. One patient required a laparotomy for pre-admission intraperitoneal rupture of the abscess. The significance of this study is that patients with amoebic liver abscess in remote rural areas where the expertise or equipment for drainage are not available may still be safely treated with metronidazole alone.
Key words *: liver, abscess, endemic*

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INTRODUCTION

Amoebic liver abscess (ALA) occurs worldwide but is more predominant in developing countries due to the endemicity of infestation with Entamoeba histolytica [1-6]. The prevalence of intestinal amoebiasis is higher than 5% to 10% in endemic areas [7] and sometimes as high as 55% [8]. There is significant overlap in the clinical features of both ALA, pyogenic liver abscess (PLA) and other febrile conditions [4,9-13]. The definitive diagnosis rests on specific microbiological or serological tests. Identification of trophozoites in the aspirate is rare in ALA [4, 9]. However, in places of high endemicity for amoebiasis ALA is more predominant and a therapeutic trial with amoebicides may be justified. Tests for antibodies against *Entamoeba histolytica* are not routinely available in most health facilities in Nigeria. Also false positive results would be expected in those who have been immunologically exposed to the organism . Due to the much higher prevalence of ALA in developing countries, empirical treatment with amoebicidal drugs is commonly employed in centres where definitive diagnostic facilities are not available. Most of the patients show a favorable response with this non-invasive treatment since most patients with ALA may not require drainage [2,3,6,14-17]. Some workers have highlighted indications for drainage or aspiration in amoebic liver abscess. These include : high risk of abscess rupture (size more than 5cm); left lobe liver abscess with higher risk of peritoneal or pericardial rupture; failure to observe clinical response to 5 – 7 days of treatment and inability to differentiate from pyogenic liver abscess [18].

MATERIALS AND METHODS

Clinical notes of patients with ultrasound diagnosis of liver abscess from January 2004 to December 2009 were retrieved from the Medical Records Department after institutional ethical clearance was obtained.

Using a proforma, data regarding age, sex, clinical features, laboratory findings, treatment modalities and outcome were obtained and analyzed using simple descriptive statistics.

RESULTS

Out of the 23 patients, there were 20 males (M : F ratio, 6.7 : 1) with an age range of 26 to 64 years and a mean age of 38.4 years (SD = 10.6). Approximately 80 % of the patients were aged between 30 and 50 years. Right upper quadrant abdominal pain and tenderness, fever, anorexia, mild jaundice and vomiting were the commonest clinical features (Table I). Using an upper limit of 11,000 cells/mm3, 78.3 % of the patients had leucocytosis while 100 % had erythrocyte sedimentation rate of more than 80 mm 1st hour (Table II). A preponderance of the abscess (65.2 %) occurred solely in the right lobe, 21.7 % in both lobes and the rest (13.1 %) in the left lobe (Table III). All the patients were admitted with a mean hospital stay of 18 days. Only one patient had a laparotomy for an abscess which ruptured into the peritoneal cavity before his presentation. Metronidazole (intravenous for the first 48 hours) was employed. This was followed by oral treatment (800mg 8hourly) for a minimum of 10 days. There was no aspiration or drainage of the abscess in any of the patients. There was no recorded death. One patient had right sided pleural effusion which later resolved. The rest had complete recovery. Most of the patients were lost to follow-up after a few weeks. Of the 4 that were followed-up for a longer period of time, there was no case of recurrence despite non-use of luminal amoebicides in the treatment. Also it took approximately six months for the abscess cavity to disappear on ultrasonography.

Table 1. Clinical features in patients with liver abscess

Clinical feature	Frequency (no /%)
Fever	21 (91.3)
RUQ abd pain	21 (91.3)
Hepatomegaly	21 (91.3)
Abd tenderness	18 (78.3)
Jaundice	16 (69.6)
Anorexia	15 (65.2)
Vomiting	12 (52.2)
Nausea	8 (34.8)
Diarrhea	8 (34.8)
Chest signs	8 (34.8)
Headache	6 (26.1)
Cough	5 (21.7)
Ascites	4 (17.4)
Insomnia	2 (8.7)

RUQ : right upper quadrant

Table 2. Hematological indices in patients with liver abscess (no / %)

Clinical feature	Frequency (no /%)			
PCV (%)	< 30	30 – 35	36 – 40	> 40
	9 (39.1)	6 (26.1)	6 (26.1)	2 (8.7)
WBC (× 10 000 cells/mm³)	< 11	11 – 15	16 – 20	> 20
	5 (21.7)	4 (17.4)	8 (34.8)	6 (26.1)
ESR (mm/1st hr)	< 20	20 – 80	81 - 100	> 100
	0 (0)	0 (0)	6 (26.1)	17 (73.9)

Table 3. Initial ultrasound findings (no /%)

Number of cavities	1	2	3 & >
	11 (47.83)	5 (21.74)	7 (30.43)
Location of abscess	R lobe	L lobe	R & L lobes
	15 (65.22)	3 (13.04)	5 (21.74)
Size of abscess	< 50 mm	50-100 mm	> 100 mm
	6 (26.08)	9 (39.13)	8 (34.78)

DISCUSSION

Although liver abscess is worldwide in occurrence, but in developing countries, amoebic abscess constitute the majority of liver abscesses seen [1-6].

This is attributable to the faeco-oral mode of transmission of *Entamoeba histolytica* whose incidence is higher in areas with poor hygiene and unhealthy sewage disposal. A high male to female ratio is common in ALA [4,6] and this was observed in this study . Right upper quadrant abdominal pain, fever, anorexia and jaundice were the commonest symptoms in our patients. Less than 40 % of our patients had diarrhea. Hepatomegaly was observed in more than 90 % of our patients and is virtually a constant sign in ALA [14, 15]. Leucocytosis is a frequent finding in liver abscess [19, 20]. Slightly more than 75 % of our patients had leucocytosis with counts in excess of 11000 cells / mm^3. Similar to other previous works, our study found a preponderance of the abscesses occurring in the right lobe [9, 10, 17]. All the patients were treated with oral metronidazole which was preceded by two days of intravenous therapy. Aspiration or drainage in ALA is commonly recommended for left lobe involvement and abscess cavity greater than 5cm.[18] One study suggested that as many as 50 % may require aspiration in endemic areas due to late presentation and multiple abscesses [21]. The drainage may be by needle aspiration or catheter drainage but there may not be any advantage of the latter over the former [22]. However, it has been observed that prompt medical treatment reduces the need for aspiration [17]. In the present study the authors found that about 52 % of the patients had more than one abscess cavity, approximately 13% of the abscesses occurred in the left lobe and almost 74 % of the abscesses were 5 cm or more in diameter. In fact about 35 % of the abscesses were more than 10 cm in diameter. Contrary to the indications for drainage referred to earlier, the patients were all managed with medical treatment alone with zero mortality. However, it is possible that the duration of treatment and hospital stay could have been reduced if some form of drainage was employed. A future study will help to establish this. Surgery is recommended for complications like rupture into the peritoneal, pleural or pericardial space [2, 6]. One of the patients had laparotomy for intraperitoneal rupture which occurred prior to his presentation. Ultrasonography continued to show presence of a cavity for approximately six months after treatment in those who kept their follow-up appointments.

CONCLUSION

Although aspiration and drainage of selected amoebic liver abscess is the generally accepted standard of care, patients managed with metronidazole alone had a favourable outcome.

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