

“A clinical study of liver abscess with its management”.

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Abstract

Introduction

Liver abscess is defined as a collection of purulent material in the liver parenchyma which can be due to bacterial, fungal, parasitic or mixed. It is a common condition in India. India has the second highest incidence in the world.

Materials and methods: A prospective clinic-pathological study of 50 patients with liver abscess and its management strategies.

Results and Observation: Out of 50 cases of liver abscess, there were 32 cases of pyogenic liver abscess and 18 cases of amoebic liver abscess. Maximum number of Pyogenic liver abscesses was found in the age group of 41-50 years with a male-female ratio of 1.66:1. Amoebic liver abscess was found predominantly in the age group of 21-40 years with the male-female ratio of 2:1. Benign biliary tract diseases formed the bulk of etiological factors for Pyogenic liver abscesses in total of 19 cases (59.37%). Only 2 cases (6.25%), each of appendicular pathology and pancreatitis developed liver abscess. Only one patient died in pyogenic group and no mortality was recorded in amoebic liver abscess patient. It was a case of intraperitoneal rupture of Pyogenic liver abscess.

Conclusion: Liver abscesses are found to be an important and serious problem in surgical practice in this part of the country because of its obscure nature in terms of clinical presentation and delayed diagnosis in many instances. The mortality is correlated to the severity of underlying cause, a delayed diagnosis, inadequate drainage and unsuspected foci of infection within the peritoneal cavity or elsewhere.

Key words: Amoebic liver abscess; Pyogenic liver abscess.

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I. Introduction:

Liver abscess (LA) is defined as collection of purulent material in liver parenchyma which can be due to bacterial, parasitic, fungal, or mixed infection. Out of total incidence of liver abscess, approximately two-thirds of cases in developing countries are of amoebic aetiology and three-fourths of cases in developed countries are pyogenic.

Liver abscess is a common condition in India. India has 2nd highest incidence of liver abscess in the world^{1,2}. Amoebiasis is presently the third most common cause of death from parasitic disease. The World Health Organisation reported that *Entamoeba Histolytica* causes approximately 50 million cases and 100,000 deaths annually^{3,4}. The vast majority of these infections are acquired in the developing world. In a country like India where majority of population lives below poverty line, basic sanitary facilities are lacking. This coupled with overcrowding and urban slums and also outdoor unhygienic eating habits sets the stage for communicable diseases like amoebiasis.

Liver abscess continues to be a disease with considerable mortality in our country. Liver parenchyma is constantly exposed to enteric bacteria through portal blood flow, however, liver infection is rare considering this fact. Liver is the largest reticuloendothelial organ and is capable to cope with this of constant barrage. When the inoculum exceeds the capacity to control, infection and abscess occur. Pyogenic infections may be due to portal infection, and may be of biliary, arterial, or traumatic origin (often in young people secondary to acute appendicitis, and other intra abdominal inflammatory condition)^{5,6,7}. Ascending infection of the biliary tree secondary to obstruction is now the most identifiable cause of pyogenic liver abscess (PLA). The aetiology of biliary obstruction has some geographic differences: in Western countries this scenario is common in patients with malignant disease, while in Asia, gall stone disease and hepatolithiasis are more common^{8,9,10}.

II. Materials And Methods:

The prospective present study was conducted on 50 patients with hepatic abscess in Gauhati Medical College and Hospital for a period of one year. Institutional approval of the study protocol was obtained and the patient included in the study were informed about the proposed study and informed consent was taken from each patient.

If the diagnosis is confirmed radiologically then the following treatment options were utilized;

1. Conservative only with medical therapy in selected patient.

2. All patients were administered antibiotics intravenously initially upon admission.

3. Ultrasound guided aspiration for abscesses with thin contents without much debris are easy to manage compared to thick wall abscess and thick pus content, which tend to recollect, and multiple aspiration are warranted.

4. Ultrasound guided catheter drainage for uniloculated or multiloculated abscesses with thicker fluid and minimal debris, and as second line procedure in the treatment failures of (1) and (2) or even primarily as judged by the surgeon and consulting radiologist.

5. Surgical drainage considered only when there is concomitant indication for exploration or when all the above measure fail and patient's condition is deteriorating.

The patient are asked to attend surgical outpatient department after 6 weeks and repeat sonography of abdomen is done to know resolution of the abscess.

III. Results And Observations:

A Prospective Clinico-Pathological study with 50 patients diagnosed to have Liver Abscess and undergoing treatment in GMCH during period of one year, is undertaken, to study the Clinical, Pathological and Management Strategies in Liver Abscess.

A total of 50 cases of suspected liver abscesses on clinical basis and preliminary laboratory investigations were evaluated with the help of ultrasonography. There were 32 cases of pyogenic liver abscesses and 18 cases of amoebic liver abscesses.

A definitive diagnosis of liver abscess was made based on compatible clinical features and following investigation; ultrasonography, aspiration or drainage of the pus. Younger age, resident or recent travel to areas endemic to amoebiasis, diarrhoea and marked abdominal pain raise clinical suspicion of amoebic liver abscess.

Diagnostic criteria for the various type of abscesses were as follows;

1. Amoebic abscess:

. Reddish brown (anchovy paste like material) aspirate from the abscess.

. Positive amoebic serology for IgG antibody

. Demonstration of entamoebahistolycatrophozoites in aspirated pus

2. Pyogenic abscess:

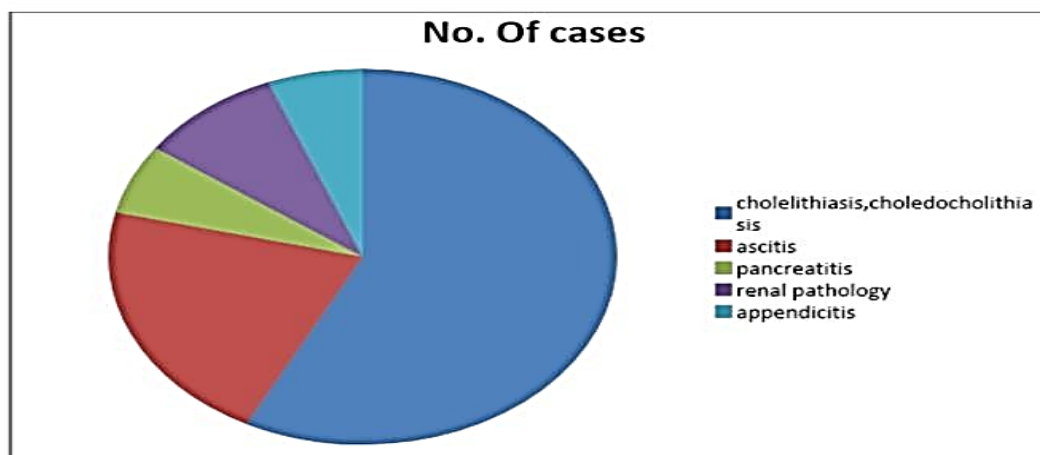
. Positive culture of blood or aspirated pus.

PYOGENIC LIVER ABSECES

Most common finding were pain upper abdomen and fever, it was present in all 18 cases (100%). It was followed by cough and vomiting in 5 cases (27.77%) each and 4 cases (22.22%) of diarrhoea, and vomiting.

CLINICAL SIGN:

Clinical sign	No. Of cases	%
Fever > 38.5° C	18	100
tachycardia	4	22.22
pallor	8	44.44
Hepatomegaly	14	77.77
Intercostal tenderness	10	55.55
Peritonitis	0	0



Out of 32 cases of pyogenic abscesses, ultrasonography demonstrated gall bladder and CBD pathology in 19 cases (59.37%), ascites in 7 cases(21.87%),pancreatitis in 2 cases(6.25%), renal pathology in 3 cases(9.37%), appendicitis in 2 cases (6.25%), cholangiolar abscesses in 1 cases(3.12%).

MANAGEMENT OF PYOGENIC LIVER ABSCESSSES:

Treatment	No of cases	%
Conservative(antibiotic coverage only)	6	18.75
Percutaneous catheter drainage(PCD)	24	75
Percutaneous needle aspiration	1	3.12
Surgical drainage(laparotomy)	1	3.12

Amoebic Liver Abscess:

Out of 18 amoebic liver abscesses , 12 cases(66.66%) were male and 6 cases(33.33%) were female with a male female ratio of 2:1

CLINICAL PRESENTATIONS:

SYMPTOMS:

symptoms	No. Of cases	%
Pain abdomen	18	100
fever	18	100
Chest complains/cough	5	27.77
jaundice	4	22.22
diarrhoea	4	22.22
vomiting	5	27.77

MANAGEMENT OF AMOEBIC LIVER ABSCESES:

Out of 18 cases in the study, 11cases (61.1%) were treated exclusively by drug therapy ,other 3cases(16.66%) was treated by combination of drugs and percutaneous catheter drainage (PCD). Another 4 cases (22.22%) was treated by percutaneous needle aspiration(PNA).

CONSERVATIVE MANAGMENT:

In the present study , drug therapy consisted of 100 ml of metronidazole intravenously thrice daily for the seven days followed by oral therapy (800 mg thrice daily) for another 10 days. All the 11 cases treated responded within 4 to 6 days. In 1 case abscesses cavity failed to resolved and was subjected to percutaneous needle aspiration(PNA).

Sl no	Size (cm)	Number of lesions	Hospital stay(days)	Recovery at discharge	Follow up (6 wks)
1	5.4x6.7	solitary	7	Satisfactory	Satisfactory
2	6.6x5.2	solitary	7	Satisfactory	Satisfactory
3	5.7x3.5	solitary	7	Satisfactory	Satisfactory
4	4.4x4	solitary	7	Satisfactory	Satisfactory
5	7.9x7.6	solitary	7	Satisfactory	Satisfactory
6	6x5.6	solitary	7	Satisfactory	Satisfactory
7	6.4x6.8	solitary	7	Satisfactory	Satisfactory
8	7.5x4.5	solitary	7	Satisfactory	Satisfactory
9	7x6	Multiple	7	Satisfactory	Satisfactory
10	5.8x3.8	solitary	7	Satisfactory	Satisfactory
11	8x7.3	solitary	7	Satisfactory	Satisfactory

Percutaneous Needle Aspiration(PNA):

In the present study 4 cases(22.22%) underwent combination of drug therapy and PNA. Out of the 4 cases , there was 1 case who failed to respond to drug therapy alone.

Sl. No	Size(cm)	Solitary/multiple	No of attempts	Hospital stay(days)	Recovery at discharge	Follow up(6weeks)
1	9x3	Solitary	2	15	Satisfactory	Satisfactory
2	9x7	Multiple	2	14	Satisfactory	Satisfactory

REVIEW OF LITERATURE

3	9.4x7.5	Solitary	3	18	Satisfactory	Satisfactory
4	8.7x7.6	Solitary	1	12	Satisfactory	Satisfactory

IV. Discussion:

PYOGENIC LIVER ABSCESS:In the present study, the most common findings were pain abdomen and fever being reported in 29 cases (90.62%) and 30 cases (93.75%) respectively. Other presentation were jaundice in 8 cases(25%), pallor in 23 cases(71.87%), hepatomegaly in 11 cases(34.37%), intercostals tenderness in 13 cases(40.62%), chest complaints in the form of cough in 8 cases(25%) and features of peritonitis in only one case(3.12%).6 cases were treated with antibiotics alone. They were all stable patient with control of infection after the start of chemotherapy and size of the abscess was less than 3 cm. They were treated with combination of antibiotics to start with but later on changed according to culture report.Percutaneous Needle Aspiration: In the present study only 1(3.12%) case was treated by needle aspiration. It was simple, unilocular, solitary abscess without any debris ,easily accessible and without involvement of any solid organ or bowel in the trajectory of the needle under ultrasound guidance. It required

three aspirations at 7 days intervals for complete resolution of abscesses^{11,12}. The case was followed by serial ultrasonography for 6 weeks and no recollection was noted. In the present study, 1 case (3.12%) was dealt with the surgical drainage. It was a case of rupture abscesses, with the features of peritonitis, sepsis. The patient died on 3rd postoperative day to multiorgan failure.

AMOEBIC LIVER ABSCESS: Out of 18 amoebic liver abscesses, 12 cases (66.66%) were male and 6 cases (33.33%) were female with a male female ratio of 2:1, which is comparable to other studies. In the present study most common finding were pain upper abdomen and fever, it was present in all 18 cases (100%). It was followed by cough and vomiting in 5 cases (27.77%) each and 4 cases (22.22%) of diarrhoea, and vomiting. It was followed by intercostal tenderness in 10 cases (55.55%), pallor in 8 cases (44.44%), tachycardia in 4 cases (22.22%), and hepatomegaly in 14 cases (77.77%). Drug therapy consisted of 100 ml of metronidazole intravenously thrice daily for the seven days followed by oral therapy (400 mg thrice daily) for another 10 days. All the 11 cases treated responded within 4 to 6 days^{14,15}. In 1 case abscess cavity failed to resolve and was subjected

to percutaneous needle aspiration (PNA). In the present study 4 cases (22.22%) underwent combination of drug therapy and PNA. Out of the 4 cases, there was 1 case who failed to respond to drug therapy alone

V. Conclusion:

Liver abscesses are found to be an important and serious problem in surgical practice in this part of the country, as in other part of the world, because of its obscure nature in the terms of clinical presentation and delayed diagnosis in many instances. Delayed diagnosis and treatment can lead to increased mortality, morbidity, and significant economic impact. India has second highest incidence of liver abscess in world.

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