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Clinical profile of liver abscess in a tertiary referral hospital

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ABSTRACT

Background: Liver abscess poses a major diagnostic and therapeutic challenge and is life threatening if left untreated. Amoebic and Pyogenic liver abscess are the common types. The objective of the study is to assess the clinical profile of liver abscess in patients attending a tertiary referral hospital
Methods: This is a Prospective study carried out in a surgical wards of a tertiary referral hospital from May 2013 to April 2016.
Results: Data analysed with percentages. Out of 99 cases (48.5%) were in the age group of 41-50 years. Majority of cases (97.9%) were males. Alcohol intake present in (61.7%) cases. Amoebic abscess was (95%) and pyogenic abscess were (5%). All had abdominal pain (100%). (51.5%) cases had abdominal distension and (57.6%) cases had fever. All (100%) had right hypochondrial pain and intercostal tenderness. (49.5%) cases presented with hepatomegaly. (70.7%) cases were right lobe abscess and (21.2%) cases were ruptured abscess at initial presentation. (91%) cases were amoebic and (9%) cases were pyogenic in etiology. (30.3%) cases were treated with single aspiration, (25.3%) cases by percutaneous catheter drainage, (22.2%) cases underwent laparotomy and drainage, (19.2%) cases were treated by multiple aspiration and (3%) cases by conservative management
Conclusions: Liver abscess more common in males with alcohol intake history in age group of 41-50 years. 90% were amoebic and 10% were pyogenic. Commonest symptom was abdominal pain. Right hypochondrial and intercostal tenderness were common signs. Right lobe was commonly involved. Percutaneous aspiration of abscess with antiamoebics and antibiotics forms mainstay of treatment.

Keywords: Amoebic, Liver abscess, Pyogenic

INTRODUCTION

Liver abscess was described by Hippocrates as early by 400 B.C.[1] It continues to be a major diagnostic and therapeutic challenge to the medical fraternity and is a life threatening and a potentially serious condition if left untreated. Therefore, it is very important for prompt diagnosis and appropriate management at the earliest.[2]

The two common types of liver abscess encountered are amoebic liver abscess and pyogenic liver abscess. Amoebiasis is a common infestation in developing countries due to poor sanitary facilities. It affects about 10% of the population all over the world. Amoebic liver abscess is the commonest extra intestinal manifestation of amoebiasis. It affects about 3-9% of victims. India is an endemic zone for amoebic liver abscess. It may present as acute abdomen requiring emergency laparotomy. Spontaneous intraperitoneal rupture, extra and retroperitoneal rupture and intrathoracic rupture are frequently seen in liver abscess. Delay in diagnosis may lead to rupture of liver abscess which may increase the morbidity as well as mortality.[3]

Pyogenic liver abscess is not an uncommon entity. It is a relatively rare complication of intra-abdominal infection

or biliary tract infection. It is usually polymicrobial in nature due to the ascending route of infection from the gastrointestinal tract.[4] The overlapping of symptoms between amoebic and pyogenic liver abscess makes early clinical differentiation difficult. This study was conducted to assess the clinical profile of liver abscess in patients attending a tertiary referral hospital.

METHODS

This prospective study was conducted in Government Dharmapuri Medical College Hospital, Dharmapuri, Tamil Nadu, India from May'2013 to April'2016 after approval by Hospital Ethical Committee. The study population consists of patients admitted in General Surgery wards of Government Dharmapuri Medical College Hospital, Dharmapuri, Tamil Nadu, India with features suggestive of Liver Abscess.

An extensive and thorough history taking, clinical examination, routine blood investigations, chest X-ray PA view, X-ray abdomen AP view, ultrasound abdomen, CT scan abdomen (In selected cases) was done. Presence of Anchovy saucy pus or purulent aspirate from abscess was identified and bacteriological culture and sensitivity of the aspirate were done.

Inclusion criteria

Patients admitted in General Surgery wards of Government Dharmapuri Medical College Hospital, Dharmapuri, Tamil Nadu, India confirmed to be of liver abscess.

Exclusion criteria

- Hydatid cyst of liver
- Solid masses of the liver
- Primary and Secondary malignancy of liver.

A total of 99 cases satisfying the inclusion criteria were recruited in the study.

Statistical analysis

Proportions (%) of various outcome measures of interest of liver abscess were arrived and tabulated.

RESULTS

The data collected during the study period with the help of a prestructured proforma and various epidemiological and statistical details are analyzed.

The results of various parameters namely age, sex, history of alcohol intake, clinical symptoms, clinical signs, lobe involvement and number of abscess, etiology and treatment given are shown in Table 1.

Table 1: Clinical profile of patients with liver abscess.

Parameter	Number=99 (%)
Age group	
30-40 years	16 (16.2)
41-50 years	48 (48.5)
51-60 years	20 (20.2)
>60 years	15 (15.1)
Sex	
Male	97 (98)
Female	2 (2)
History of alcohol intake	
Present	*N=61(61.7)*
Amoebic	58 (95)
Pyogenic	3 (5)
Absent	*N=38(38.3)*
Amoebic	32 (84.2)
Pyogenic	6 (15.8)
Clinical symptoms	
Abdominal pain	99 (100)
Fever	57 (57.6)
Abdominal distension	51 (52)
Dysentery	16 (16)
Clinical signs	
Rt. Hypochondrial tenderness	99 (100)
Intercostal tenderness	99 (100)
Hepatomegaly	49 (49.5)
Jaundice	25 (25.3)
Epigastric mass	12 (12.1)
Lobar involvement	
Right lobe	70 (70.7)
Left lobe	8 (8.1)
Ruptured abscess	21 (21.2)
Multiple	5 (5.1)
Etiology	
Amoebic	90 (91)
Pyogenic	9 (9)
Treatment	
Single aspiration	30 (30.3)
Percutaneous catheter drainage	25 (25.3)
Laparotomy and drainage	22 (22.2)
Multiple aspiration	19 (19.2)
Conservative management	3 (3)

DISCUSSION

Liver abscess continues to be one of the common liver disorders even in the era of improved sanitation and personal hygiene as well as availability of wide range of antimicrobials. This study explores the age incidence, sex preponderance, etiology, clinical presentation and modalities of management of liver abscess cases as seen in tertiary care referral institution.

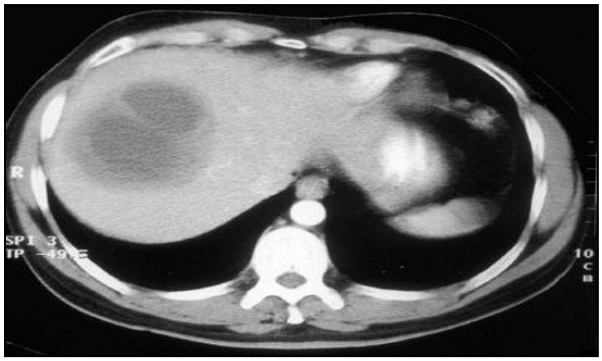

Figure 1: Computerized tomographic image of liver abscess.

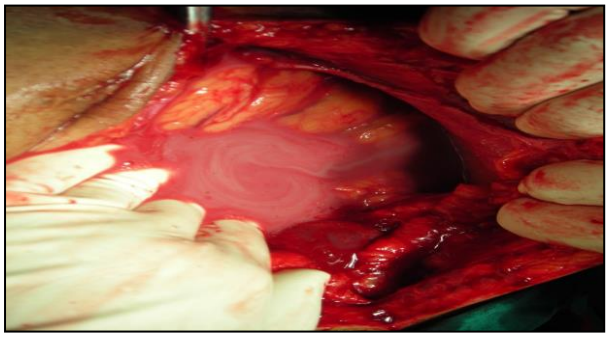

Figure 2: Ruptured liver abscess on laparotomy.

Figure 3: Aspiration of liver abscess.

Incidence

The number of hospitalizations from May'2013 to April'2016 in our surgical wards was 33, 799. The number of liver abscess cases admitted in that period was 99. This accounts for (0.29%) per year. This is concurrent with the study of Kebede A et al.[5]

Age

Most of the liver abscess cases (48.8%) in our study were in the age group of 41-50 years. Seeto R K et al, Tan J A et al have also found this age group to be susceptible for liver abscess.[6,7] Ahsan I et al in their study have found this age group similar for pyogenic abscess in their study.[8] Abdullah AA, et al in their study on amoebic liver abscess have found that amoebic liver abscess is more common in the age group of 20-45 years and differ from our study.[9]

Sex

We have observed male preponderance (97.97%) in our study which concurs with the observation by Tan JA et al, Ahsan I et al, Sharma N et al and Goh KL et al.[7,8,10,11] Male predominance is due to different life styles of men and women of our country with males going out for work consume contaminated water and unhygienic food from street vendors and road side hotels whereas women are mostly house bound.[8]

History of alcohol intake

In present study about 61 (62%) of patients with liver abscess had history of alcohol intake, of which 58 (95%) cases were amoebic abscess and 3 (5%) cases were pyogenic abscess. Sharma N et al noted history of alcohol consumption in 46.5% of patients and Seeto RK et al noted it in 84% of patients in their study respectively. Alcohol being an immunosuppressant, impairs kuppfer cell function and suppresses cell mediated and humoral immunity against Entamoeba histolytica.[6,10]

Etiology

In present study, about 91% were amoebic abscesses and 9% were pyogenic abscesses. Eschericia coli was the cause for 9% of patients with pyogenic abscess in our study. Eschericia coli and Klebsiella pneumonia were the leading causes of pyogenic liver abscess observed in various studies.[1,4,11-13.] Streptococcus milleri too was reported by Pang T CY et al.[12] Polymicrobial etiology was noted by Wang JH et al.[4]

Clinical symptoms

The commonest clinical presentation observed in our study was abdominal pain which was found in 100% of cases. This was followed by abdominal distension and fever in about half of the cases. The incidence of dysentery in our study was 16.16%. This is similar to the observations made by Kebede A et al, Seeto KR et al, Abdullah AA, Sharma N et al. and Bukhari AJ et al.[5, 6, 9, 10, 14]. The low incidence of dysentery compared to other symptoms is due to invasive form of amoebiasis causing amoebic liver abscess and pyogenic liver abscess mainly due to biliary etiology.

Clinical Signs

On examination, all liver abscess cases in our study had right hypochondrial pain and intercostal tenderness. Hepatomegaly was noted in about half of the cases and jaundice was present in about one fourth of cases. The earlier reports observed by Kebde et al, Abdullah AA et al.[5,9] were concurrent with the findings of present study.

In addition, mass in the epigastric region was noted in 12.12 % of patients in present study.

Presentation

The most commonly involved region of the liver in our study was the right lobe in about 71% of cases which is in accordance with the findings observed by Kebede A et al, Sharma N et al, Qazi AR et al, Khan RA et al in their studies.[5,10,13,15] The reason why right lobe of the liver is more prone to develop abscess than the left lobe is due to greater volume of blood going to right side than the left lobe.[13] About 5% of patients presented with multiple abscesses and all were amoebic in our study contrary to the observations made by Ahsan I et al, Sharma N et al, Goh KL et al Alvarez JA, et al.[8,10,11,16] where multiple abscesses were predominantly pyogenic. Bukhari AJ et al reported predominantly (83%) solitary abscess in their study which was similar to about 80% in our study.[14] Twenty-one percentage of patients presented with ruptured abscess all of which were peritoneal rupture which was in accordance with the observations by Hayat AS et al, Memon AS et al, Perez CI, et al.[17-19] Elevation of right hemidiaphragm was noted in 31% of patients and right sided pleural effusion was noted in 21% of patients in present study.

Treatment

Most of the liver abscess cases were managed surgically in our study. About 30% of cases were treated by single aspiration and 20% of cases by multiple aspirations. Percutaneous catheter drainage was the mode of treatment in 25% of cases. 22% of cases needed laparotomy and drainage all of which were ruptured abscesses. 3% of patients in whom the abscess size was less than 5 centimetres were managed conservatively. Zerem E et al reported needle aspiration either single or multiple was successful in 67% of patients and percutaneous catheter drainage was successful in 100% of patients.[20] A similar observation was made by Qazi AR et al, McGarr PL et al, Ramani A et al.[13,21,22]

Co-existent HIV infection

About 3 (3%) of patients had co-existent HIV infection in our study and all of them were males with amoebic liver abscess.

Mortality

There was 1 (1%) death in present study; a male patient aged 70 years who underwent laparotomy and drainage for ruptured liver abscess.

CONCLUSION

Liver abscess constitutes 0.29% of total surgical ward hospitalizations per year and was more commonly seen in the age group of 41-50 years with a male predominance 97.9% with a history of alcohol intake in nearly two third of cases. Majority of liver abscess were amoebic and nearly 10% were pyogenic.

Abdominal pain was the commonest symptom of liver abscess followed by abdominal distension and fever. Right hypochondrial and intercostal tenderness were the common clinical signs in liver abscess. There was a predominant involvement of the right lobe of the liver. Eschericia coli was the commonest organism causing pyogenic liver abscess. Percutaneous aspiration of abscess with antiamoebics and antibiotics forms the mainstay of treatment.

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