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CLINICAL PROFILE OF LIVER ABSCESS: A HOSPITAL BASED PROSPECTIVE STUDY.

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Abstract

Objectives: Liver abscess (LA) is defined as collection of purulent material in liver parenchyma which can be due to bacterial, parasitic, fungal, or mixed infection. The liver abscess is mainly classified into amoebic and pyogenic. This present study was to evaluate the aetiology, clinical profile, management and prognosis of liver abscess patients.

Methods: A detail history, clinical examinations and relevant investigations were performed to all liver abscess patients. Investigations was performed like as routine blood investigations, chest x-ray, PA view, X-ray abdomen, AP view, ultrasound abdomen, CT scan abdomen (if needed). Culture and sensitivity of the aspirate was performed.

Results: Data was analysed by using simple statistical methods with the help of MS-Office software.

Conclusions: Liver abscess was commonly seen in elderly age groups. Male was more preponderance than females. Amoebic liver abscess was commonly found. Amoebic liver abscess was commonly seen in alcoholic patients. Abdominal pain, fever and abdominal distension were common clinical symptoms. Tenderness on right hypochondrial, intercostal region and hepatomegaly were the common clinical sign of liver abscess. Abscess was mostly seen in right lobe than left lobe. Most of the patients were managed by percutaneous single aspiration. If aspiration was failed, percutaneous catheter drainage was the choice for management of liver abscess. Hence, A very prompt recognition is important in instituting effective management and achieving good outcomes. Because of the nonspecific symptoms and laboratory findings, the presence of predisposing factors can be helpful in increasing the level of diagnostic suspicion. The key to successful outcome in the management of liver abscess is early diagnosis and appropriate therapy.

Keywords: Liver abscess, age group, amoebic liver abscess, pyogenic liver abscess, alcoholic, management of liver abscess

Introduction

Liver abscess is a major tropical disease of the gastrointestinal system [1]. Liver abscess (LA) is defined as collection of purulent material in liver parenchyma which can be due to bacterial, parasitic, fungal, or mixed infection. The liver abscess is mainly classified into amoebic and pyogenic. It is a common condition across the globe. Out of total incidence of LA, approximately two-thirds of cases in developing countries are of amoebic aetiology and three-fourths of cases in developed countries are pyogenic [2]. ALA is more common in the developing nations [3]. PLA constitutes the bulk of hepatic abscesses in developed nations. PLA result from ascending biliary tract infection, hematogenous spread through portal venous system, septicemia with involvement of liver by way of hepatic arterial circulation and secondary spread from intraperitoneal infection. *Escherichia coli*, *Klebsiella,* and *Streptococcus* are the most common etiology of PLA [4].

Blood cultures are an important adjunct to the diagnosis of pyogenic abscess and although their yield is usually lower than pus aspirate of liver abscess, they may provide helpful information in patients before they receive antimicrobials or aspiration of their abscess. It is recommended to perform a blood culture for any patient suspected of liver abscess on entry [5].

Serology can be useful in returned travelers who have visited areas of high endemicity and reside in low endemicity settings. Due to long-term positivity following exposure, it is of less value in high endemicity settings where patients may have been previously exposed [6]. The test can also be falsely negative in case of acute presentations, patient's immune response, the type of serologic test or the pathogen strain [7]. The clinical presentation of both amoebic and PLA is indistinguishable. Patients usually present with fever and right upper quadrant tenderness [8]. Objectives of our present study

was to evaluate the aetiology, clinical profile, management and prognosis of liver abscess patients.

MATERIALS & METHODS

This present study was conducted in admitted cases in Department of Surgery, Government Doon Medical College, Dehradun during a period from February 2017 to December 2019. Attendants/entire subjects signed an informed consent approved by Institutional ethical committee of Government Doon Medical College, Dehradun, India was sought. A total of 100 diagnosed liver abscess patients with irrespective of sex were included in this study. Exclusion criteria of this study was hydatid cyst of liver, solid masses of the liver, primary and secondary malignancy of liver.

Methods:

A detail history, clinical examinations and relevant investigations were performed to all liver abscess patients. Investigations was performed like as routine blood investigations, chest x-ray, PA view, X-ray abdomen, AP view, ultrasound abdomen, CT scan abdomen (if needed). Culture and sensitivity of the aspirate was performed.

OBSERVATIONS

This present study was included a total of 100 patients with age group between 20 years to greater than 60 years. Most of the patients 58(58%) were in age group 41 to 60 years of age. 23(23%) patients were in age between 20 t0 40 years. 65% patients were males and 35% were females. Male and female ratio was 13:7.

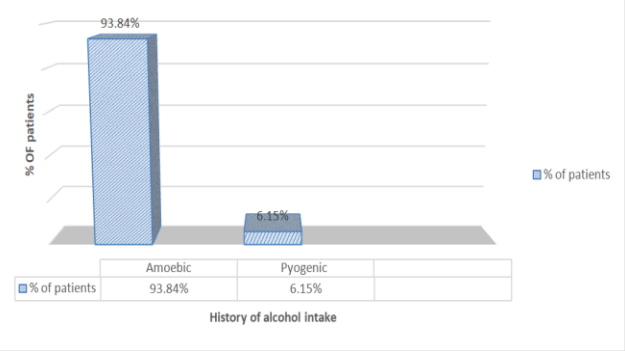

Figure 2: History of alcohol intake of liver abscess patients.

In this present study, 61(94%) of amoebic and 4(6%) pyogenic liver abscess patients were alcoholic.

Table 1: Clinical symptoms of liver abscess patients

Clinical Symptoms	No. of patients	% of patients
Abdominal pain	98	98%
Fever	60	60%
Abdominal distension	55	55%
Dysentery	19	19%

In this present study, most of the case 98(98%) had abdominal pain followed by 60(60%) fever, 55(55%) abdominal distension and 19(19%) dysentery.

Table 2: Clinical signs of liver abscess patients

Clinical signs	No. of patients	% of patients
Right hypochondrial tenderness	98	98%
Intercostal tenderness	98	98%
Hepatomegaly	52	52%
Jaundice	26	26%
Epigastric mass	13	13%

Most of the patients 98(98%) had tenderness on right hypochondria and intercostal region followed by 52(52%) hepatomegaly, 26(26%) jaundice and 13(13%) epigastric mass.

Table 3: Lobe Involvement and Number of Abscess

Presentation	No. of Patients	% of patients
Right lobe	74	74%
Left lobe	12	12%
Ruptured abscess	23	23%
Multiple abscess	7	7%

Most of the patients 74(74%) had abscess on right lobe. Ruptured abscess was on 23(23%) patients. 12(12%) patients was abscess on left lobe. Multiple abscess was seen in 7(7%) patients.

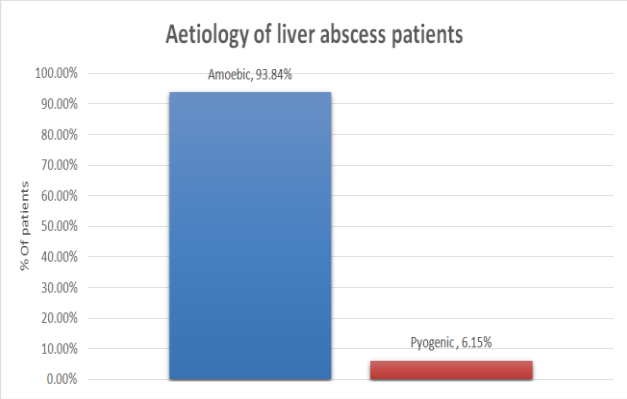

Figure 3: Aetiology of liver abscess patients.

Majorities of patients 61(93.84%) was liver abscess due to amoebic infection. Pyogenic infection was seen 4(6.15%) patients.

Table 4: Mode of Treatment of Liver Abscess

Treatment	No. of patients	% of patients
Single aspiration	37	37%
Percutaneous catheter drainage	26	26%
Laparotomy and drainage	20	20%
Multiple aspiration	13	13%
Conservative management	4	4%

Single aspiration was performed in 37(37%) patients. Percutaneous catheter drainage was seen in 26(26%) patients. Laparotomy and drainage were done in 20(20%) patients. Conservative management was seen in 4(4%) patients.

Discussions

A liver abscess is a suppurative cavity in the liver resulting from the invasion and multiplication of microorganisms, entering directly from an injury through the blood vessels or by the way of the biliary ductal system. Liver abscesses are most commonly due to pyogenic, amoebic or mixed infections. Less commonly these may be fungal in origin [9].

In this present study, we were enrolled a total of 100 patients of liver abscess. Most of the patients 58(58%) were in age group 41 to 60 years of age. Majorities of liver abscess patients (65%) were males. Male and female ratio was 13:7.

Abdullah A A 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 [10].

The most commonly reported signs and symptoms include fever in most but not all cases, abdominal pain, and hypotension [11,12]. The percentage of patients affected by each symptom encompasses a fairly wide range, which reflects the high degree variability in clinical findings. The difficulty in making the diagnosis is also reflected in the reported delay in time of onset of symptoms to time of diagnosis, which on average is one week [13]. Laboratory findings in patients with HA are also relatively nonspecific. The most common abnormalities are elevated white blood cell count (WBC), elevated C-reactive protein, hypoalbuminemia, elevated aspartate aminotransferase (AST), elevated alanine aminotransferase (ALT), elevated alkaline phosphatase (ALP), elevated gamma glutamyl transpeptidase (GGT), elevated bilirubin, and elevated international normalized ratio (INR) [13]. While laboratory testing alone is not diagnostic,47 laboratory abnormalities usually prompt imaging studies that do lead to the diagnosis. Diagnosis of HA is made by imaging in 90% of cases [11]. Imaging can also help identify the underlying cause in some cases.2 The primary methods of diagnostic imaging are conventional ultrasound (US) and CT. Both methods carry a sensitivity of 96%–100% for detection of HA [14]. Lin et al. found that 25% of patients had equivocal results in the emergency department, and 14% had a false negative result on US [15]. HA are typically hypo-echoic on US and may have varying degrees of internal echogenicity depending on the presence of septations or gas [14].

In this present study, 61(94%) of amoebic and 4(6%) pyogenic liver abscess patients were alcoholic. most of the case 98(98%) had abdominal pain followed by 60(60%) fever, 55(55%) abdominal distension and 19(19%) dysentery. Most of the patients 98(98%) had tenderness on right hypochondria and intercostal region followed by 52(52%) hepatomegaly, 26(26%) jaundice and 13(13%) epigastric mass.

Sharma N et al noted history of alcohol consumption in (46.5%) of patients and Seeto R K et al noted it in (84%) of patients in their study, respectively. Alcohol being an immunosuppressant impairs Kupffer cell function and suppresses cell mediated and humoral immunity against Entamoeba histolytica [16,17].

The most important and accurate diagnostic tool in our study was USG, which had accuracy of 96%. CECT abdomen was performed in some cases due to diagnostic confusion and right lobe.

In this present study, most of the patients 74(74%) had abscess on right lobe. Ruptured abscess was seen in 23(23%) patients. 12(12%) patients had abscess on left lobe. Multiple abscess was seen in 7(7%) patients. Amoebic infection 61(93.84%) was the most common aetiology of liver abscess. Pyogenic infection was seen 4(6.15%) patients.

The most commonly involved region of the liver in our study was the right lobe, which is in accordance with the findings observed by Khan R A et al, Kebede A et al, Sharma N et al and Qazi A R et al [10,18,16,19] in their studies. 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.18 About 5% of patients presented with multiple abscesses and all were amoebic in our study contrary to the observations made by Sharma N et al, Ahsan I et al, Alvarez JA et al and Goh K L et al [16,20,21] where multiple abscesses were predominantly pyogenic. Bukhari A J et al reported predominantly (83%) solitary abscess in their study, which was similar in our study. Ruptured abscess all of which were peritoneal rupture, which was in accordance with the observations by Hayat A S et al [22].

In this present study, most of the patients were managed surgically. Single aspiration was performed in 37(37%) patients. Percutaneous catheter drainage was seen in 26(26%) patients. Laparotomy and drainage were done in 20(20%) patients. 4(4%) patients were treated by conservatory.

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 [19]. Death was occurred in 1(1%) patient aged 75 years who underwent laparotomy and drainage for ruptured amoebic liver abscess. Mortality was 1(1%).

Conclusions

This present study was concluded that liver abscess was commonly seen in elderly age groups. Male was more preponderance than females. Amoebic liver abscess was more common than pyogenic liver abscess. Alcoholic patients had commonly amoebic liver abscess . Abdominal pain, fever and abdominal distension were common clinical symptoms. Tenderness on right hypochondrial, intercostal region and hepatomegaly were the common clinical sign of liver abscess. Abscess was mostly seen in right lobe than left lobe. Most of the patients were managed by percutaneous single aspiration. If aspiration was failed, percutaneous catheter drainage was the choice for management of liver abscess. Hence, A very prompt recognition is important in instituting effective management and achieving good outcomes. Because of the nonspecific symptoms and laboratory findings, the presence of predisposing factors can be helpful in increasing the level of diagnostic suspicion. The key to successful outcome in the management of liver abscess is early diagnosis and appropriate therapy.

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