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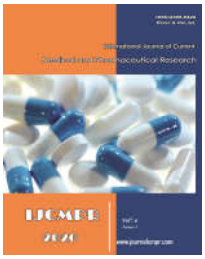

Research Article

LIVER ABSCESS: A CLINICAL ANALYSIS AND OUTCOME

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ABSTRACT

Background: Liver abscess are infective collections in the liver and are classified into amoebic or pyogenic liver abscess. It can lead to a fatal outcome if not detected early and treated urgently with antibiotics and evacuation of the abscess.
Materials and Methods: A series of 45 patients of liver abscess were evaluated. Patients expiring within six hours of admission were not included in the study.
Results: Age of the patients ranged from 18 to 69 years. The incidence of abscess was highest in the age group of 30-50 years. Percutaneous pigtail catheter drainage was done in 43 patients with promising results.
Conclusion: Prognosis became poor with delayed diagnosis and treatment. Percutaneous pigtail catheter drainage with antibiotics is the standard of care.

INTRODUCTION

Liver abscess is a collection of purulent material in the liver substance[1,2],due to the spread of microorganisms, which can enter from an injury via the blood vessels or the biliary tree.The organisms can be bacterial, parasiticorfungal in origin[2]. Theyusuallyare pyogenic or amoebic liver abscess. Liver abscess was seenfrom the era of Hippocrates (400 B.C.) who remarked that the patient's recovery depended on the type of collection in the abscess cavity[3].Liver abscess is common between 20 to 50 years of age. They are usually single and present in the right lobe as the right lobe of the liver is maintained by the superior mesenteric vein via the portal vein. The patients have a dull ache in the abdomen, usually referred to the scapula or the right shoulder with/ without fever[4].Fever is irregular with one or more peaks per day and can be followed by chills and rigor. The etiological factors in pyogenic liver abscess can be cholecystitis, choledocholithiasis with cholangitis, biliary enteric anastomosis (hepatobiliary), appendicitis (portal), endocarditis (arterial), abdominal trauma (traumatic) and cryptogenic where the cause is unknown[5]. Sir William Osler in 1890 identifiedamoebain theabscess and stools of sufferers. In the early 20th century entamoeba histolytica was found to the cause of amoebic liver abscess formation[6].They are commonly seen in places of low sanitation and persons who have visited an endemic area. Rupture of the abscess with generalized peritonitis can occur in patients who are not treated on time with an increased mortality rate. Mortality was 75 -80%in theearly 1900s but has now reduced to 10-40% [7]. USG and Contrast Enhanced CT (CECT) Abdomen makes a fastdiagnosis andradiological intervention in the form of percutaneous catheter drainage has been a game changer for many patients[8-11].Now it can be safely said that the standard of care for management of liver abscess is percutaneouspigtail catheter drainage with IV antibiotics[12].

MATERIAL AND METHODS

A series of 45 consecutive patients of liver abscess admitted and treated at Gauhati Medical College and Hospital during the period from June 2017 to May 2018 were evaluated. The clinical profile of the patients were recorded which included age, sex, disease, associated medical illness, shock and any other associated features. All patients had an immediate USG abdomen done and USG findings (size, site andnumber of abscesses) were noted. CECT abdomen was done in case of diagnostic confusion and to correlate with the USG findings.

Patients were put up for percutaneous pigtail drainage of the collection depending on the size of the abscess and clinical condition of the patient. Patients were properly resuscitated and complete blood count, bleeding time, clotting time, prothrombin time and international normalised ratio were among the parameters checked before they were put up for percutaneousdrainage of the abscess. Patients with very small abscess/ abscesses were treated conservatively. The patients received IV fluids,empirical IV broad spectrum antibiotics, Metronidazole infusion 8 hourly, with gram negative coverage like amikacin/gentamicin in patients whose renal profile and urine output was normal and taking care to measure the serum creatinine regularly as amikacin/gentamicin are nephrotoxic

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drugs[12].Any complications were noted and treated accordingly. Patient's outcome was noted at the time of discharge and at 3 weeks and 2 months follow up. All records were scrutinized and the clinical findings, radiological findings and the management were analysed with the outcome.

RESULTS

The study consisted of 45 consecutive patients of liver abscess. 43 patients had percutaneous pigtail catheter drainage of the abscess while1 patient had percutaneous needle aspiration and 1 patient was treated conservatively. Age of the patients ranged from 18 to 69 years. The incidence of abscess was highest in the age group of 30 to 50 years. Mean age of the patients in our series was 46.49 years. There were 39 males and 6 females. The male /female ratio was 6.5:1. The patients usually belonged to the lower socioeconomic class and were semiliterate. 5(11.1%) patients came within 24 hours of the development of symptoms,13(28.8%) patients within 24-48 hours, and 27(60%) patients came after 48 hours. The patients had clinical features like severe upper abdominal pain mainly on the right side in all the 45 patients(100%),upper abdominal distension in 21 patients(46.7%),nausea in 15 patients (33.3%), and vomiting in21 patients(46.6%).2 patients had jaundice (4.4%).Tender upper abdomen was seen in 25 (55.6%)patients. Hepatomegaly was seen in 27(60%) patients. Signs of peritonitis like abdominal rigidity was not seen in any patient.2 (4.4%) patients came with shock and they were properly resuscitated with IV fluids (crystalloids and colloids).5(11.1%) patients had anaemia <8 gm% which was corrected with whole blood/packed RBC transfusion. Fever was seen in 17(37.8%) patients, while 5(11.1%) gave history of fever since the development of pain abdomen.15(33.3%) patients took analgesics, while 5(11.1%) patients had taken antibiotics before admission.7 (15.6%) patients were diabetics, of which 4 (8.9%) were on oral hypoglycaemic drugs and 3(6.7%) were on insulin.4(8.9%) patients had pneumonitis on chest xray.

In USG/CT abdomen 25(55.6%) patients had right sided pleural effusion and collapse and consolidation in basal segment of right lung was seen in 19 patients(42.2%).2(4.4%) patients had history of bronchial asthma.31(68.9%) patients had history of alcohol consumption and 25(55.6%) patients were smokers and 32(71.1%) used tobacco. 35(77.8%) patients had abscess in the right lobe of the liver, 5(11.1%) patients had abscess in the left lobe and 5(11.1%) patients had abscess in both the lobes of the liver. 36(80%) patients had pyogenic liver abscess while 9(20%) patients had amoebic liver abscess.40 (88.9%) patients had single abscess while 5(11.1%) patients had multiple abscesses. Size of the abscess cavity was > 5cms in 43 patients and <5cms in 2 patients. The amount of collection from the abscess on drainage ranged from 100 to 400ml.In Pyogenic liver abscess,in the pus culture and sensitivity test, culture was positive in 26(57.8%)cases .In 10(22.2%) cases, culture was sterile. In the culture positive cases, there was growth of E. coli in 19(42.2%) cases,5(11.1%) cases showed klebsiella and 2(4.4%) cases showed staphylococcus aureus. Of the 9 amoebic liver abscess cases, IgG antibody test for amoebiasis was done and 7 ((77.7%) cases tested positive and 2(22.2%) negative.

DISCUSSION

In our series, incidence of liver abscess was more in the age range of 30- 50 years. The minimum age was 18 years and the maximum age was 69 years. The presence of liver abscess was more in males than females and the male: female ratio was 6.5:1. in our series. Similar age group range was seen inastudy by P Choudhary *et al* (2013)[4],CK bertal *et al*(1986)[13],S Mathur *et al*(2002)[14],Sepulveda B *et al*(1986)[15],.In the clinical signs and symptoms, the patients presented with fever, pain and tenderness in the right upper abdomen and liver enlargement.2 (4.4%) patients presented with jaundice.7(15.6%) patients were diabetics and similar was the finding by S Mathur *et al*(2002)[14]. In our series 35(77.8%%) patients had abscess in the right lobe of the liver as also reported by Hughes[16], Hoffner[17], Rahimian[18],Wong[19], Siu[20], Pastagia[21], Stanley[22], Lin[23]. In our series 40 (88.9%) patients had single abscess and similar was the scenario in the reports of GD Branum *et al* (1990)[24] while 5(11.1%) patients had multiple abscesses with MP Sharma *et al* (2006)[25] showing 20-25% incidence. Liver abscess is differentiated into pyogenic and amoebic liver abscess and this differentiation is made on the basis of pus culture and sensitivity test, colour of the pus (anchovy sauce in case of amoebic),and the serology test for amoebiasis, Khan *et al*[26]. Secondary infection is a common complication of amoebic abscess. In our series 36(80%) patients had pyogenic liver abscess while 9(20%) patients had amoebic liver abscess while Rajak CL[27]in his report found 67% was amoebic. In the pus culture, Escherichia coli was the commonest organism to be detected at 19(42.2%) and Klebsiella was next at 5(11.1%) as was also the finding by R K Seeto *et al*(1996)[10], Mohsen AH *et al*(2002)[28]. In our series, 43 patients had percutaneous pigtail catheter drainage and 1 had percutaneous needle aspiration of the liver abscess as the collection was < than 5cc and was at multiple sites in the liver while 1 responded well to conservative treatment. Percutaneous needle aspiration had good response in 79 -100% cases in a study by Baek *et al*(1993)[31] and there was good response in our patient also.In one case the catheter had to be reinserted under USG guidance after it accidentally came out at night with the safe draining out of the remainder of the pus. The advantage of pigtail catheter drainage was it evacuated the whole abscess cavity in a very short time reducing the stay of the patient in the hospital and giving prompt relief to the patient from his/her symptoms and thereby reducing the morbidity and mortality of the patient similarly reported by RB Dietrick(1984)[29],Stain SC(1991)[30]. Length of hospital stay was 10-12 days for the patients in our series. There was no mortality in our series.

CONCLUSION

1.45 patients of liver abscess were examined.2.The incidence was highest in the age group of 30-50 years.3.Prognosis of the patient diminished with delayed diagnosis and treatment.4. Associated comorbidities increased the risk and delayed discharge from the hospital. 5.The patients came from low socioeconomic background.6.Percutaneous catheter drainage is the standard of care for these group of patients in terms of rapid recovery and low mortality.

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