



VARIOUS CLINICAL PRESENTATION AND MANAGEMENT OF LIVER ABSCESS: SINGLE CENTRE STUDY.

General Surgery

Dr. Jignesh shah	Additional Professor, Department of General Surgery, New Civil Hospital, Surat, Gujarat, India
Dr. Kartik Gorasiya*	Resident doctor, Department of General Surgery, New Civil Hospital, Surat, Gujarat, India *Corresponding Author
Dr. Ruchir Jhaveri	Resident doctor, Department of General Surgery, New Civil Hospital, Surat, Gujarat, India

ABSTRACT

Background and Aims: Liver abscess and its complications both can have their serious implications if presented late. Complication of liver abscess forms the major cause of morbidity and mortality especially in a developing country like India. This is a case series of our experience to highlight various clinical presentations and the outcomes of the different modalities of management of the same.

Material and Methods: During the period of September 2017 to August 2019, an observational study was performed involving 138 patients admitted to the in-patient ward of the Department of General Surgery of New Civil Hospital, Surat. Their diagnosis was made on the basis of clinical features, laboratory investigations and radiological evidence of liver abscess and management was done accordingly and the outcomes were noted.

Results: Amoebic liver abscess was the most common (66%) type of liver abscess with male preponderance (92%) among the study groups and Ultrasonography (USG) of the abdomen was accurate and cost-effective in diagnosis of liver abscesses. Antibiotic with USG (Ultrasonography) guided Percutaneous catheter drainage (PCD) was the commonest used method in this study as management. Mortality rate of 1% was noted.

Conclusion: There are wide variety of clinical presentation of liver abscess like with jaundice, caudate lobe abscess, rupture with peritonitis and pleural rupture and its complications which are difficult to manage to this date. Antibiotic with USG guided PCD insertion is found to be the most effective treatment followed by needle aspiration. Surgical drainage is reserved for ruptured liver abscess and caudate lobe liver abscess (due to difficult approach).

KEYWORDS

Liver abscess, USG guided PCD

INTRODUCTION

Liver abscess (LA) is defined as a collection of purulent material in the liver parenchyma which can be due to bacterial, parasitic, fungal, or mixed infection. It is a common condition across the globe; however, in Europe and North America, LA is a relatively rare condition, commonly seen in India and Taiwan. Approximately One third of all LA in the developing countries is caused by the amoebiasis, a consequence of infection with *Entamoeba histolytica*, and approximately three-fourths of cases in developed countries are pyogenic. [1]. The incidence of LA has recently increased due to increased incidence of predisposing factors such as alcoholism, irrational usage of antibiotics, emergence of drug-resistant bacilli, and immunodeficiency like HIV.

The condition is endemic in tropical countries such as India due to poor sanitary condition, poor hygiene, overcrowding, and alcoholism. [2] Although no distinct clinical criteria exist for distinguishing Amoebic liver abscess (ALA) and Pyogenic liver abscess (PLA), the differential diagnosis can be made based on the following criteria- younger age, residence, or recent travel to areas of endemic amoebiasis, diarrhoea, and marked abdominal pain raise clinical suspicion of ALA. The diagnosis is confirmed by ultrasonography (USG), serological tests such as indirect haemagglutination test, reddish brown (anchovy paste like material) aspirate from the abscess, negative gram stain, and rapid resolution after metronidazole treatment. The diagnosis of PLA is based on picket fence configuration of temperature chart, nausea, vomiting, anorexia, haematological analysis of leucocytosis, anaemia, and positive blood or aspirate culture for bacterial aetiology.[5] The treatment of liver abscess has evolved remarkably with minimal invasive drainage taking the centre stage. Radiological imaging has improved diagnostic competence and has altered therapeutic strategy by allowing the possibility of percutaneous approach using needle aspiration or catheter drainage.[4] While open surgery should be reserved for management of complicated cases. For the past two decades, advances in the imaging field coupled with ultrasound-guided percutaneous needle aspiration and drainage brought dramatic changes in the pattern of treatment for liver abscess. The aim of our study was to determine etiopathology, clinical aspects and radiological, characteristics of the condition and to review its management strategies.

MATERIAL AND METHODS

In the present study, A total of 138 patients were selected from our tertiary care center in south Gujarat. Study was conducted during the period from September 2017 to August 2019. All the patients were subjected to routine blood investigations (complete haemogram, liver function test, prothrombin time, serum alkaline phosphatase (ALP) and radiological investigations like X-ray chest and X-ray abdomen standing and USG of thorax and abdomen and in some patients CT-thorax was done. Based on clinical findings and radiological investigations patients were taken into consideration. USG abdomen was done at the time of admission; and the further plan of management to be followed was decided based on these initial USG findings. All patients were started with 3rd generation Cephalosporin IV 12 hourly and Inj. Metronidazole according to weight (40 mg/kg) IV 8 hourly. USG was done on the day of admission, and day 5 and additionally as and when required. Patient was treated conservatively if the size of abscess cavity less than 5 cm or volume was <100 cc. Percutaneous needle aspiration was done in all patients with liquefied, tappable liver abscess greater than 5 cm with a 18G spinal needle. The site, depth, direction of aspiration was guided by ultrasonography and pus aspirated which was then sent for culture and sensitivity. PCD was done in patients with abscess volume >200 cc, large abscesses with signs of impending rupture. A diagnosis of ALA was considered if the aspirated pus has characteristic anchovy sauce pus appearance and patient had a history of diarrhoea/dysentery. Patients were examined daily for clinical improvement, laboratory and radiological work up was done as required. Surgical drainage (laparoscopic / open approach) was also considered specifically for inaccessible abscess, cases with peritonitis or thoracic rupture. Cure was defined as improvement clinically with subsidence of fever and local signs, symptoms, increased appetite, decrease in WBC count and follow-up ultrasonography showing a reduction in size. Patients were followed up every 14-21 days for a minimum period of 3 months.

RESULTS

Table 1. clinical features

Symptoms	No. of patients	percentage
Abdominal pain	127	92%
Fever	102	74%
Vomiting	13	9%

Loose stools	31	22%
Anorexia	101	73%
Breathlessness	10	7.25%
Signs	No. of Patients	Percentage
Hepatomegaly	49	36%
Tenderness in RHC	68	49%
Pallor	33	24%
Icterus	42	30%

Table 2. lobe involvement

Lobe involved	PLA	ALA	no. of patients (%)
Right lobe	20	48	68 (49%)
Left lobe	7	14	21(15%)
Both	20	13	43 (31 %)
Caudate lobe	3	11	14 (10%)

Table 3. Mode of Management

Mode of treatment	Pyogenic abscess	Amoebic abscess	Total(%)
Conservative			31 (22.46)
Aspiration	17	25	42 (30.43)
Percutaneous catheter placement	13	31	44 (31.88)
Surgery (Laparotomy-14/ Laparoscopic-07)	06	15	21 (15.21)

Table 4. Comparison of Investigation

Investigation	Jha et al [n=125]	Mangukiya et al [n=400]	L. Liu et al (n=105)	Our study (n=138)
Haemoglobin (Anaemia)	55%	41.5%	47%	42%
Leucocytosis	77%	78%	89%	38%
Hyperbilirubinemia	46%	12.5%	24%	20%
S.ALP (Increased).	62%	-	52%	30%
Altered Prothrombin Time	43%	34.5%	-	16%

Table 5. Comparison of Modality of Management

MODALITY OF MANAGEMENT	Serriano et al. (n=109)	Jha et al (n=125)	our study (n=138)
CONSERVATIVE	17	18	31
ASPIRATION	13	43	42
PCD	72	43	44
SURGERY	7	21	21

Table 6. Comparison of Complications

Complication	Mangukiya et al (n=400)	Jha et al (n=125)	our study (n=138)
Rupture & peritonitis	20 (5%)	21 (16%)	22(16%)
Rupture in pleura	20 (5%)	10 (8%)	9 (7%)
Liver abscess with Jaundice	50 (12.5%)	58 (46%)	28 (20%)
DEATH	6 (1.5%)	7 (5.6%)	2 (1%)

DISCUSSION

The present study showed the maximum incidence of the disease is in patients in their 4th decade of life (31-40) (28%) with a mean age of 46 years. Males were more commonly affected (92%). Abdominal pain was the most common complaint found in 127 cases(92%), followed by fever in 102 cases (74%). Other symptoms like anorexia in 101 cases (73%) of patients and diarrhoea found in 31 patients (22%). On examination, abdominal tenderness was elicited in right hypochondrium in 68 cases (49%), Hepatomegaly in 49 cases (36%), Icterus in 42 cases (30%) and Pallor in 33 cases (24%). Laboratory investigations were analysed. Leucocytosis was found in 90 cases (65%). Anaemia was found in 42% of cases. Alkaline phosphatase was raised in 30% cases. Elevated total bilirubin was present in 20% of cases. Prothrombin time was altered in 16% of cases. On radiological examination, x-ray chest was abnormal (Elevated right dome of diaphragm) in 58 % of cases with right sided costophrenic angle blunting, suggestive of either pleural effusion or rupture, was seen in 13.7% cases. On USG, rupture with peritonitis found in 16% of cases. In this study 95 cases (69%) had solitary abscess and 43 cases (31%) showed multiple liver abscesses. Out of which most common was in the right lobe of liver (49%). Left lobe accounted for 15 % of cases, and 14 patients (10%) had caudate lobe abscess. Serial USG was done and patients were evaluated by clinical examination, improvement in symptoms and signs. Out of 138 cases 22.46 % were treated conservatively with 3rd generation Cephalosporin and metronidazole,

30.43% were treated with aspiration plus antibiotics, 31.22 % were treated with percutaneous catheter drainage with antibiotic. 16% patient presented with rupture in peritoneal cavity which required surgical drainage in which 14 patients underwent laparotomy and peritoneal lavage and 7 patients underwent Laparoscopic drainage. And total 28% patients presented with complication. Surgical drainage required in 15% patients due to rupture into peritoneal cavity due to late presentation. Respiratory complication occurred in 7% of patient and 1 case required repositioning of percutaneous catheter due to displacement. In our study of 138 cases, 2 patients expired due to complications.

CONCLUSION

The study attempts to show our experiences in the field of hepatic abscess and to provide useful information regarding various clinical presentations with complications like rupture with peritonitis, rupture in pleura and cholestasis and with unusual presentations like caudate lobe abscess, which are difficult to manage to this date. Based on our experience, early diagnosis of liver abscess with USG guided PCD catheter insertion is the most effective line of management in uncomplicated cases, while surgical drainage should be reserved for complicated cases.

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