

Clinical profile of patients with liver abscesses admitted to a tertiary care hospital

¹Dr. Ajith MB, ²Dr. Niyaz Ahmed, ³Dr. Shrinidhi B Joshi

¹Professor, Department of General Surgery, BMC & RI, Bangalore, Karnataka, India

²Assistant Professor, Department of General Surgery, BMC & RI, Bangalore, Karnataka, India

³Post Graduate, Department of General Surgery, BMC & RI, Bangalore, Karnataka, India

Corresponding Author:

Dr. Niyaz Ahmed

Abstract

In Asian populations, *Klebsiella pneumoniae* is the most frequent pathogen associated with cryptogenic PLA's. Diabetes mellitus is suggested to be an important risk factor, but the pathogenesis is still unclear. *E. coli* is the most common pathogen in Western countries, in both monomicrobial and polymicrobial isolates, followed by *Streptococcus milleri*. Anaerobes may also be cultured from PLA's and *Bacteroides* spp. are the most common isolated organism. After obtaining approval and clearance from the institutional ethics committee, the patients fulfilling the inclusion criteria will be enrolled for the study after obtaining informed consent. Case record form with follow up chart. All cases had undergone thorough history and detailed clinical examination at the time of admission. Total and differential leukocyte counts was measured with an auto-analyzer. In this study it is found that liver abscess presents with most common presentation as pain abdomen and fever. In this study it is found that fever, loose stools are presenting features of liver abscess in most of the individuals along with pain abdomen.

Keywords: Liver abscesses, *E. coli*, clinical profile

Introduction

Although PLA's (Pyogenic Liver Abscess) may originate from a broad spectrum of microorganisms, the underlying etiology and geographic location of PLA's are often related to specific pathogens. The positive abscess culture rates are higher than those of blood culture samples, and only up to 50% of patients with PLA have both cultures positive. Negative abscess cultures may be found in 20% of patients ^[1].

Numerous studies have subsequently reported biliary tract disease to be the most frequent underlying lesion associated with PLA, with a peak incidence in the seventh and eight decades.

Patients with cryptogenic PLA's are more likely to have negative cultures from the blood, whereas patients with PLA's secondary to biliary tract disorders are more likely to have positive cultures from blood and aspirated pus ^[2].

In Asian populations, *Klebsiella pneumoniae* is the most frequent pathogen associated with cryptogenic PLA's. Diabetes mellitus is suggested to be an important risk factor, but the

pathogenesis is still unclear. *E. coli* is the most common pathogen in Western countries, in both monomicrobial and polymicrobial isolates, followed by *Streptococcus milleri*. Anaerobes may also be cultured from PLA's, and *Bacteroides* spp. are the most common isolated organism [3].

Gas-forming PLA's are uncommon and often associated with compromised immunity in diabetic patients, and they present higher mortality rates than non-gas forming PLA's. *Escherichia coli*, *Enterobacteriaceae* and *K. pneumoniae* are wellknown gas-forming microorganisms.

Staphylococcus aureus is the predominant organism isolated from liver abscess in children. Focal candidal infection of the liver has been reported in an increasing number and variety of patient, most notably in those undergoing chemotherapy for leukemia or liver transplantation. Most common candidal species causing liver abscess are *C. tropicalis* and *C. albicans*. Liver abscess secondary to systemic aspergillosis has also been reported [4].

Children with chronic granulomatous disease or other disorders of granulocyte function may also present with hepatic abscess, most frequently due to organisms such as *Fever* is the most frequent and consistent presenting symptom present in 67% to 99% of patients. Depending upon the extent of hepatic involvement and suppuration, there was variability in the degree of fever. A 'Picket fence' configuration of temperature chart generally has been noted. The fever is associated with chills or rigors [5].

Abdominal pain is present in approximately 35% to 74% of patients. Abdominal pain is predominantly present in right upper quadrant, but patient may present with generalized abdominal pain also.

Localisation of pain is dependent upon in which surface and the lobe, the liver the abscess located. Right lobe abscess produced pain in right lower chest anteriorly or posteriorly, right subcostal area or in the area of gall bladder. Patients who had abscess beneath the right dome of diaphragm produce pain over tip of right shoulder. The right lobe abscess produce pain in right flank, right loin or in the right scapular region in the back. In the abscess of the left lobe pain felt in the epigastric region and left hypochondrium. Rupture into the peritoneal cavity result in severe generalized pain of acute abdomen [6].

Diaphragmatic and right lung involvement result in pleuritis and pleural effusion. Pleuritic type of pain, cough and dyspnea are not infrequent. Cough is usually non productive.

Jaundice may be present in approximately 20% of patients. Many patients also complains of variety of non-specific symptoms such as malaise, anorexia, nausea, vomiting and weight loss.

Right upper quadrant tenderness and hepatomegaly are the most common physical findings. Seeto and Rockey (1996) found that 60% of patients had one or both of these physical findings. Jaundice was present in approximately 20% of patients and this was suggestive of underlying biliary tract disease. Chest signs related to right lung base were present in 25% of patients, hepatic duct compression by an abscess can cause jaundice. The liver tissue itself was insensitive to pain. It was found that, when an enlarged liver is tender, the enlargement is usually rapid and progressive [7, 8].

Methodology

Source of data

Patients diagnosed with liver abscess at Department of general surgery.

Study design

Randomised comparative study.

Inclusion criteria

1. Patients who give informed consent.
2. Age above 18 years.
3. Diagnosed with liver abscess >5cm in diameter > 150ml.

Exclusion criteria

1. Age-less than 18 years.
2. Patients diagnosed with liver abscess < 150ml.
3. Patients with ruptured liver abscess.

Methodology

After obtaining approval and clearance from the institutional ethics committee, the patients fulfilling the inclusion criteria will be enrolled for the study after obtaining informed consent. Case record form with follow up chart. All cases had undergone thorough history and detailed clinical examination at the time of admission. Total and differential leukocyte counts was measured with an auto-analyzer.

Results**Table 1:** Distribution of Subjects Based on Age Groups

Age groups (in years)	Frequency	Percent
18 to 25	8	7.5
26 to 35	22	20.8
36 to 45	37	34.9
46 to 55	22	20.8
> 55	17	16.0
Total	106	100.0

INFERENCE: In this study it is found that liver abscess can occur in all the age group individuals, however highest incidence is seen among the age group 36-45 years.

Table 2: Distribution of Subjects Based on Gender

Gender	Frequency	Percent
Females	17	16.0
Males	89	84.0
Total	106	100.0

INFERENCE: In this study it is found that liver abscess is predominantly seen in males.

Table 3: Distribution of the Subjects Based on First Chief Complaint

	Frequency	Percent
Loss of appetite	2	1.8
Breathlessness	1	.9
Dysuria	1	.9
Fever	20	18.9
Loose stools	6	5.7
Pain abdomen	75	70.8
Vomiting	1	.9
Total	106	100.0

INFERENCE: In this study it is found that liver abscess presents with most common presentation as pain abdomen and fever.

Table 4: Distribution of the Subjects Based on Second Chief Complaint

	Frequency	Percent
No 2nd compliant	28	26.4
Burning micturition	1	.9
Dysuria	9	8.5
Fever	27	25.5
High coloured urine	1	.9
Icterus	1	.9
Loose stools	26	24.5
Loss of appetite	3	2.8
Pain abdomen	9	8.5
Vomiting	1	.9
Total	106	100.0

INFERENCE: In this study it is found that fever, loose stools are presenting features of liver abscess in most of the individuals along with pain abdomen.

Table 5: Distribution of Subjects Based on Per Abdomen Examination Findings

	Frequency	Percent
Diffuse tenderness	26	24.5
Non tender	6	5.7
Right hypochondriac tenderness	73	68.9
Right upper abdomen gaurding	1	.9
Total	106	100.0

INFERENCE: In this study it is found that right hypochondriac tenderness is an important examination finding present in most of the individuals with liver abscess

Discussion

Liver abscess can occur in any age group individuals. According to the Inclusion and Exclusion criteria of this study subjects between 18-65 years of age are studied. Among that it occurs mainly in the age group of 36-45 years. It is also observed that age group of 26-35 years and 46-55 years also have a higher incidence rate. Liver abscess predominantly affects males ^[9].

Abdominal pain is the most common presenting complaint in hepatic abscess. Pain abdomen is localized to right upper abdomen in most cases however diffuse pain abdomen can also be present. Next common presenting complaint is fever. Fever is high grade and often associated with chills and rigors.

On per abdomen examination, right hypochondriac tenderness is often present.

Alcoholism was found to be the most consistent etiological factor in this study of liver abscess. 82/106 (77.3%) of the cases of this study were found to be alcoholics as compared to other study by Shyam Mathur *et al.* where 70% of the cases were alcoholic which concludes Alcoholism has a strong association with liver abscess patients ^[10].

Conclusion

Liver abscess is a disease of concern because of rising incidence. It is of significant burden

especially in the developing countries. Amoebic liver abscess being more common among the different causes of liver abscess.

As discussed earlier it can present with non-specific symptoms. High index of suspicion is often necessary to make a diagnosis of liver abscess. There are no pathognomonic signs for liver abscess, however it is observed that right upper abdomen tenderness is a constant sign in most of the cases.

References

1. Gunnarson G, Frerdman LS. Liver abscess due to *Staphylococcus aureus* in a patient with AIDS who underwent bowel biopsy. *Clinical Infectious Disease*. 1994;18:802-804.
2. Pitt HA, Zuidema GD. Factor's influencing mortality in the treatment of pyogenic hepatic abscess. *Surgery, Gynaecology and Obstetrics*. 1975;140:228-234.
3. Shaman JD, Robbins SL. Changing trends in causation of hepatic abscess. *American Journal of Medicine*. 1960;28:943-950.
4. Branum GD, Tyson GS. Hepatic abscess: Changes in etiology, diagnosis and management. *Annals of Surgery*. 1990;212:655-662.
5. Salat RA. Immune Mechanisms against *Entamoeba histolytica*. *Review of Infectious Diseases*. 1986;8:261-272.
6. Current RL. The global problem of Amebiasis: Current status reviews of infectious diseases. 1986;8:218-227.
7. Aikat BK, Pal BK, Datta DV. Pathology and pathogenesis of fatal hepatic Amoebiasis-A study on 79 autopsy cases. *Transactions of Royal Society of Tropical Medicine*. 1979;73(2):188-192.
8. Ravdin JI. Amebiasis. *Clinical Infectious disease*. 1995;20:1453-1466.
9. Rogers WF, Ravdin J. Review of Immune mechanisms against *Entamoeba histolytica*. *Review of Infectious diseases*. 1986;8:261-272.
10. Shyam Matur, Gehlot RS, Alok Mehta. Liver abscess. *Journal of Indian Academy of Clinical Medicine*. 2002;3(4):78-79.