

CLINICAL ANALYSIS OF AMOEBIC LIVER ABSCESS

Aravind Ramachandra Mirajkar¹, Kalavathi G. P²

¹Associate Professor, Department of General Medicine, Karwar Institute of Medical Sciences, Karwar, Karnataka.

²Assistant Professor, Department of General Medicine, Karwar Institute of Medical Sciences, Karwar, Karnataka.

ABSTRACT

BACKGROUND

Hepatic Amoebiasis is the infection of the hepatic tissue by the trophozoite form of *Entamoeba histolytica* from the intestine. Hepatic amoebiasis or liver abscess is commonest complication of amoebiasis.

The aim of the study is to know the clinical profile of amoebic liver abscess using a non-invasive diagnostic procedure like screening chest X-ray with special reference to abdominal ultrasound to confirm amoebic liver abscess. Clinical course of disease admitted to hospital and response to both medical and surgical line of treatment were studied.

MATERIALS AND METHODS

Thirty-five patients referred to general medicine department of Karwar Institute of Medical Sciences were screened and selected for this study. Inclusion criteria for study are patients having right hypochondriac pain and palpable tender liver with intercostal tenderness &/or patients having fever, chills, rigor with palpable tender liver &/or patients having cough, breathlessness, right sided chest pain and palpable tender liver &/or patients having loose motion, pain abdomen and palpable tender liver. All the patients who fulfilled inclusion criteria were subjected to blood test, X-ray and abdominal ultrasonography.

RESULTS

Fourteen patients gave history of loose motion associated with blood and mucus, blood or mucus. Pain abdomen, fever and right sided chest pain were the most common symptoms in these patients. Fever and anaemia were the most general physical examination findings. On systemic examination, intercostal tenderness and tender hepatomegaly were seen in nearly all the patients. Anaemia was seen in 71.4%, polymorphonuclear leucocytosis in 65.70% and raised ESR in 77.01% of patients. All the patients had elevated diaphragm, which had restricted movement on X-ray. On abdominal ultrasonography, abscess was observed in right lobe of liver in majority of cases. In the present study, two patients expired before any medical intervention could be given.

CONCLUSION

Pain abdomen and right sided chest pain associated with fever is the presenting complaint. Intercostal tenderness with tender hepatomegaly is seen in almost all cases. Clubbing, jaundice, pedal edema and tachycardia are some findings in general examination. Anaemia, polymorphonuclear leukocytosis and raised ESR are seen in 2/3 of the patients. Solitary right lobe abscess was seen in 91.4% of cases. Raised diaphragm with restriction of movement seen in all patients.

KEYWORDS

Amoebic Liver Abscess, Clinical Analysis, Abdominal Ultrasonography, X-Ray.

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BACKGROUND

Hepatic Amoebiasis is the infection of the hepatic tissue by the trophozoite form of *Entamoeba histolytica* from the intestine. Hepatic amoebiasis or liver abscess is commonest complication of amoebiasis. Other tissue and organs may be involved and amoebiasis of the lung, amoebic pericarditis by direct extension, amoebic abscess of the brain and other

organs, spleen, psoas muscle, buttocks and thigh by systemic spread.¹

Incidence was 0.57% - 0.7%,^{2,3} 4.86 Debakay and Ochsner found an average incidence of hepatic involvement associated with intestinal disease to be 13.2% upto 40%.⁴ In under developed countries amoebiasis is common, more so amongst in low social-economic status group, living in congested area with poor sanitation.^{5,6}

It is more frequently encountered in adult life with highest incidence occurring in the 3rd, 4th & 5th decades.⁷ Hepatic amoebiasis characteristically occurs in adults and only rarely appears in children.⁸ More common in males than in females. About 85-95% of the total cases seem to occur in males.

Amoebic liver abscess is more prevalent in tropical areas, where invasive amoebiasis is common.⁹ India has maximum case reports of amoebic liver abscess.

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Corresponding Author:

Dr. Kalavathi G. P,

Assistant Professor,

Department of General Medicine,

Karwar Institute of Medical Sciences,

Karwar- 581301, Karnataka.

E-mail: kalavathigp@gmail.com

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In recent years, an increased incidence of amoebiasis has been noted in urban male homosexual population.¹⁰ Homosexual mode of transmission is probably oro-anal or genitoanal with oro-genital contact.⁵

Aims and Objectives

This study is done to know the clinical profile of amoebic liver abscess, using a non-invasive diagnostic procedure like screening X-ray chest with special reference to abdominal ultrasound to confirm amoebic liver abscess. Clinical course of disease admitted to hospital and response to both medical and surgical line of treatment were studied.

MATERIALS AND METHODS

Thirty-five patients referred to general medicine department of Karwar Institute of Medical Sciences were screened and selected for this study. This study was conducted over a period of a year in 2016-17.

Inclusion criteria for study were patients having right hypochondriac pain and palpable tender liver with intercostal tenderness &/or patients having fever, chills, rigor with palpable tender liver &/or patients having cough, breathlessness, right sided chest pain and palpable tender liver &/or patients having loose motion, pain abdomen and palpable tender liver.

All the patients who fulfilled inclusion criteria were subjected to stool examination for finding trophozoites of amoebae and cysts. In all cases, cysts were confirmed by Iodine staining. As majority of these patients were alcoholic, hepatic function tests were done. Bleeding time, clotting time, estimation of blood glucose, HIV and HbsAg test were done in all the cases. Abdominal ultrasound was done to confirm the presence of the abscess in the liver, and the situation and extent of the abscess. These patients were further investigated for radiological evidences of restriction of diaphragmatic movement, elevated dome of diaphragm, involvement of lung and pleura. All the cases were investigated further for the evidence of systemic complications of amoebic liver abscess.

All the patients were treated with tablet metronidazole 400 mg t.i.d. x 10 days and in acute cases intravenous (IV) metronidazole 500 mg t.i.d. x 5 days followed by oral metronidazole. Tablet Chloroquine 150 mg base 2 BD x 2 days followed by 1 BD x 19 days. In some cases, oral or IV course of antibiotic was given and prognosis was noted in all the cases.

RESULTS

A total of thirty-five amoebic liver abscess cases were screened and enrolled into study by general medicine department of Karwar Institute of Medical Sciences during period 2016-17. The following clinical observation were made in the study.

History	No. of Patients	% of Patients
No. of patients with present and past history of loose motion	14	40.00
No. of present/past history of loose motion	21	60.00
Total	35	100.00

Table 1. History of Loose Stools

Symptoms	No. of Patients	% of Patients
Pain Abdomen	31	88.60
Fever	28	80.00
Right side chest pain	23	65.70
Cough	11	31.40
Breathlessness	05	14.30
Bowel disturbance	04	11.40
Jaundice	02	05.70

Table 2. Symptoms of Amoebic Liver Abscess

Signs	No. of Patients	% of Patients
Fever	28	80.00
Anaemia	25	71.40
Toxic	04	11.40
Jaundice	03	08.60
Clubbing	03	08.60
Pedal Oedema	02	05.70

Table 3. General Physical Examination Findings

Sign	No. of Patients	% of Patients
Intercostal tenderness	35	100.00
Tender hepatomegaly	33	94.3%
Rt. basal crepitation's	15	42.90
Pleural effusion	08	22.60
Tachycardia	10	28.60

Table 4. Systemic Examination Findings

Blood Test Findings	No. of Patients	% of Patients
Anaemia	25	71.40
Polymorphonuclear leukocytosis	23	65.70
Raised erythrocyte sedimentation rate (ESR)	27	77.10

Table 5. Findings of Haematological Investigations

Radiological Tests/ Findings	No. of Patients	% of Patients
Screening chest: Decreased movement of diaphragm	35	100.00
X-Ray Chest: Raised dome of Diaphragm	35	100.00
Right Basal pneumonitis	15	42.90
Pleural Effusion	08	22.90

Table 6. Radiological Findings

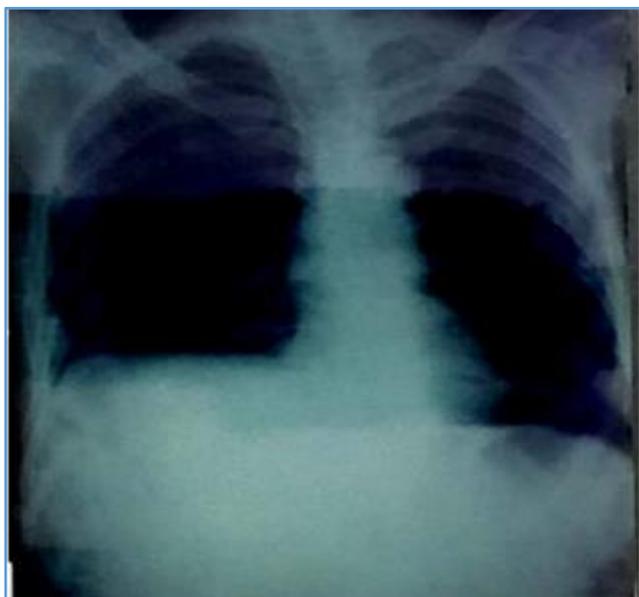


Figure 1. Chest X-ray Showing Elevated Right Dome of the Diaphragm with Minimal Effusion Right Side



Figure 2. Abdominal Ultrasound showing a Hypoechoic Lesion in Posterior Aspect of Right Lobe

Hepatic Site of Amoebic Liver Abscess	No. of Patients	% of Patients
Right lobe	32	91.40
Left lobe	02	05.70
Multiple	01	02.90
Total	35	100.00

Table 7. Abdominal Ultrasound Findings

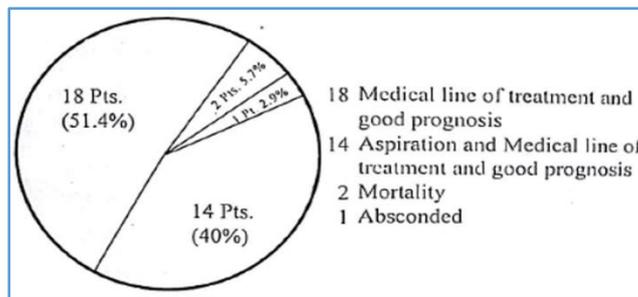


Figure 3. Treatment and Prognosis of Amoebic Liver Abscess Patients

DISCUSSION

Few of the important studies are considered for comparison purpose and the comparative study is discussed below.

History	Kapoor 1979 ⁷	Present Study
Present & Past of history of altered bowel Habit	60%	40%

Symptoms	Turril et al 1966 ⁸	Kapoor 1979 ⁷	Present study
Pain Abdomen	66%	75%	88.6%
Fever	67%	63%	80%
Right side chest pain	44%	62%	65.7%
Cough	36%	21%	31.4%
Jaundice	11%	2.5%	5.7%

Turill et al 1966 and Kapoor 1979 series, has lesser incidence of pain abdomen compared to the present study may be due to lesser enlargement in their group. The present study compared favourably with Turril et al 1966 and Kapoor 1979 series. Pain in the right side of the chest seen due to diaphragmatic and pleural involvement present study

compares favourably with Kapoor 1979 series. The present study results of cough and breathlessness are comparable with other studies. The incidence of jaundice compared favourably with other studies.

Sign	Ramachandran et al 1972 ¹¹	Samsi et al 1974 ¹²	Kapoor 1979 ⁷	Present Study
Tender Hepatomegaly	90%	91.2%	88%	94.3%

Table 10. Comparison of Systemic Examination Findings from Different Studies

Most of the other studies also show a similar incidence of tender hepatomegaly.

Sign	Subramaniam and Krishnan et al 1977 ¹³	Present study
Jaundice	7.8%	8.6%

Table 11. Comparison of Jaundice from Different Studies

The present study favourably compared with Subramaniam and Krishnan et al 1977, where the jaundice is less common clinical feature.

Sign	Turril et al 1966 ⁸	Kapoor 1979 ⁷	Ramachandran et al 1972 ¹¹	R N Garrison et al 1994 ³	P. Nigam et al 1985 ¹⁴	Present Study
Lung Signs	18%	35.5%	3.6%	54%	16%	42.9%

Table 12. Comparison of Lung Signs from Different Studies

The present study correlates well with Kapoor 1979 and R N Garrison et al 1994 series, where the incidence of involvement of lung was more as the patient starts the medical advice late during the disease.

	R.N. Garrison et al 1994 ³	Kevin M Decock et al 1993 ⁵	P. Nigam et al 1985 ¹⁴	Present study
Anaemia	47%	50%	57%	71.4%

Table 13. Comparison of Frequency of Anaemia from Different Studies

In the present study, anaemia was higher compared to other studies probably because of poor social-economic status of the patients in the present study leading to anaemia.

	Subramaniam and Krishnan et al 1977 ¹³	Ramachandran et al 1972 ¹¹	Present Study
Polymorphonuclear leukocytosis	24%	60%	65.7%
Raised ESR	37%	74.6%	71.1%

The present study result of polymorphonuclear leucocytosis is comparable with Ramachandran et al 1972 study. In the other series, the incidence was less. ESR is raised in all the series except Krishnan et al 1977 Series.

Hepatic Site of Amoebic Liver Abscess	Burton L. Reid et al 1992 ¹⁵	H. Kean et al 1956 ¹⁶	Present Study
Right lobe	80%	51%	91.4%
Left lobe	10%	24%	5.7%
Multiple	10%	25%	2.9%

Right lobe of liver is involved in majority of the cases as the right lobe is bigger in size. The present study compares favourably with other series. Left lobe involvement is less common in amoebic liver abscess, which is seen in other series also. Multiple abscess seen in only one case in our study. Whereas in other series, the incident is slightly more compared to the present study, probably due to less immune compromised stage in the other series.

	Subramaniam and Krishnan et al 1977 ¹³	Kapoor 1979 ⁷	Present study
Mortality	7.5%	6.6%	5.7%

Table 16. Comparison of Mortality from Different Studies

With the availability of anti-amoebic drugs, the mortality in cases of amoebic liver abscess considerably improved. With surgical intervention of large abscess has further reduced the incidence of mortality in amoebic liver abscess. The present study compares well with mortality seen in the above studies.

CONCLUSION

Pain abdomen and right sided chest pain associated with fever is the presenting complaint. Intercostal tenderness with tender hepatomegaly seen in almost all cases. Clubbing, jaundice, pedal edema and tachycardia are some findings in general examination. Anaemia, Polymorphonuclear leukocytosis and raised ESR are seen in 2/3 of the patients. Solitary right lobe abscess was seen in 91.4% of cases. Raised diaphragm with restriction of

movement seen in all patients. Mortality was seen in two patients i.e., 5.7% of cases.

REFERENCES

- [1] Chatterjee KD. Parasitology (protozoology and helminthology) in relation to clinical medicine. 11th edn. Calcutta: Chatterjee Medical Publishers 1976:14-36.

- [2] De la Maza LM, Naceim F, Berman LD. The changing etiology of liver abscess. Further observations. *JAMA* 1974;227(2):161-163.
- [3] Garrison RN, Polk HC. Liver abscess & sub-phrenic abscess. In: Blumgart LH, ed. *Surgery of liver and biliary track*. Vol 2. Edinburgh: Churchill Livingstone 1994:1091-1119.
- [4] Branum GD, Meyers W. Pyogenic and amoebic liver abscess. In: Sabiston DC, ed. *Text book of surgery*. 14th edn. Philadelphia: WB Saunders 1991:992-999.
- [5] DeCock KM, Reynolds TB. Amebic and pyogenic liver abscess. In: Schiff L, Schiff ER, eds. *Diseases of the liver*. 7th edn. Philadelphia: Lippincott Co, 1993:1320-1333.
- [6] Gupta SS, Singh O, Shukla S, et al. Acute fulminant necrotizing amoebic colitis: a rare and fatal complication of amoebiasis: a case report. *Cases J* 2009;2:6557.
- [7] Kapoor OP. *Amoebic liver abscess*. Bombay, India: S.S. Published 1979;1-200.
- [8] Turrill FL, Burnhan JR. Hepatic amebiasis. *Am J Surg* 1966;111(3):424-430.
- [9] Ratnasamy V, Thirunavukarasu K, Selvam K, et al. Amoebic liver abscess: an unusual cause for a right iliac fossa mass: a case report. *BMC Infect Dis* 2016;16(1):741.
- [10] Goldmeier D, Sargeaunt PG, Price AB, et al. Is *Entamoeba histolytica* in homosexual men a pathogen? *Lancet* 1986;1(8482):641-644.
- [11] Ramachandran S, Sivalingam S, Perumal JR, et al. Hepatic amoebiasis in Ceylon. *J Trop Med Hyg* 1972;75:23-33.
- [12] Samsi AB, Patwardhan NA, Bhalerao RA. Experiences with hepatic amoebiasis. *J Surg* 1974;36:137.
- [13] Subramaniam R, Krishnan KT, Madangopalan N. Review of cases of amoebic liver abscess proven at aspiration over last five years. *The Journal of the Association of Physicians of India* 1970;18(9):729-734.
- [14] Nigam P, Gupta AK, Kapoor KK, et al. Cholestasis in amoebic liver abscess. *Gut* 1985;26(2):140-145.
- [15] Reed SL. Amebiasis: an update. *Clin Infect Dis* 1992;14(2):385-393.
- [16] Kean BH, Gilmore HR, Van Stone WW. Fatal amebiasis: report of 148 fatal cases from the Armed Forces Institutes of Pathology. *Ann Intern Med* 1956;44(5):831-843.