

A Rare Association of Amoebic Liver Abscess and Hepatitis E: Case Report

AVINASH PATHURI¹, JANAK TARUN BAHIRWANI², SHIPRA RAI³, BIJI BOB THOMAS⁴

ABSTRACT

Amoebiasis is a global disease, which is caused by the protozoan *Entamoeba histolytica*. This infection affects nearly 10% of the population of the developing world. Hepatitis E predominantly affects young adults in the age group of 15-40 years. Both these infections are usually related to contamination of water. We are reporting a rare case of co-infection of amoebic liver abscess with Hepatitis E, in a patient who presented with complaints of high grade fever, yellowish discolouration of eyes and pain in the right upper abdomen. In this patient laboratory investigations showed significantly elevated liver enzymes and conjugated hyperbilirubinaemia. Ultrasound scan of the abdomen revealed a liver abscess. Amoebic serology was positive. He was treated with 'Ceftriaxone' and 'Metronidazole'. Due to persistent elevation of liver enzymes, a viral hepatitis panel was sent which showed Hepatitis E IgM (ELISA) positive. With treatment, his symptoms resolved and the elevated liver enzymes normalised.

Keywords: Co-infection, Dysentery, Enzyme-linked immunosorbent assay, Hyperbilirubinaemia

CASE REPORT

A 28-year-old male patient, a restaurant waiter by occupation, presented with complaints of high grade fever with chills and rigors, yellowish discolouration of eyes, severe pain in the right upper abdomen, nausea and vomiting and loss of appetite since 15 days. He also had a history of significant alcohol consumption for the past five years. After physical examination, he was found to be febrile, with icterus, and had tender hepatomegaly. There were no signs of chronic liver disease or liver failure.

His Laboratory investigations (Complete Blood Count (CBC) and Liver Function Tests (LFTs)) showed neutrophilic leucocytosis with significant elevations in Aspartate Aminotransferase (AST) and Alanine Aminotransferase (ALT) along with conjugated hyperbilirubinaemia. He had normal blood glucose and pancreatic enzyme levels. Blood cultures were sterile. Ultrasound scan of the abdomen revealed an abscess in segment VIII of right lobe of the liver. Due to continuing pain abdomen, ultrasound guided drainage of liver abscess was done and subsequently the aspirate showed no growth. Laboratory investigations are shown in [Table/Fig-1]. Amoebic serology (ELISA) was positive. Patient was initially treated with injection Ceftriaxone. Intravenous Metronidazole was added in view of positive amoebic serology. Due to persistent elevation of liver enzymes, blood sample for a viral hepatitis panel, was sent, in which Hepatitis E IgM (ELISA) was found to be positive. He was treated symptomatically with intravenous fluids, paracetamol and analgesics for the same and counselled regarding proper food hygiene and sanitation following which he showed clinical improvement and was later discharged. On follow up after four weeks, his bilirubin levels had decreased and a follow up ultrasound of abdomen showed no residual abscess. There was also a remarkable improvement in AST and ALT levels.

DISCUSSION

Amoebiasis is a global disease caused by the protozoan *Entamoeba histolytica*. This infection affects nearly 10% of the population of the developing world, where over crowding, poor sanitation and economic backwardness are common. This infection is transmitted mainly through faeco-oral route [1].

Investigation	Reference range	On admission	On discharge
Haemoglobin (gm/dL)	13-17 (men), 12-15 (women)	15.6	14.8
WBC count (/μL)	4000-10000	15300	7600
Platelet count (/μL)	150000-400000	252000	276000
LFT	T. Bilirubin-10.5 mg/dL (N-0.1-1.0); Direct Bilirubin-8.6 mg/dL (N-0.0-0.3); Total Protein-7.8 gm/dL (N-6.0-7.8); Albumin-4.1 gm/dL (N-3.5-5.5); Globulin- (N- 2.3-3.5) 3.7 gm/dL; AST-993 IU/L (N-8-40); ALT-2555IU/L (N-8-40); ALP-157IU/L (N-30-100 for men)		T. Bili-1.8 mg/dL; D. Bili-1.6 mg/dL; AST-22 IU/L; ALT-110 IU/L ALP-141 IU/L
Absolute eosinophil count (/μL)	30-350	300	
Random Blood sugar (mg/dL)	79-140	89	
HbA1C (%)	<5.7	4.6	
Urea (mg/dL)	7-18	24	
Creatinine (mg/dL)	0.6-1.2	1	
Serum Amylase	30-125	45 U/L	
Serum Lipase	10-150	47 U/L	
Blood culture	Sterile after six days of incubation		
Amoebic Serology (ELISA)	-	Positive	
Viral Markers	Hepatitis E IgM (ELISA)- Positive; HBsAg (ELISA)- Non reactive; Hepatitis A (IgM ELISA): Negative, Hepatitis C (ELISA): Non-reactive, Leptospirosis (IgM): Negative, Scrub Typhus (OrientiaTutsugamushi): Negative, Widal test: Negative		
Abscess aspirate gram staining	No pus cells; Culture: No growth after 72 hours		
Ultrasound of the abdomen	Well defined hypoechoic lesion in segment VIII of right lobe of liver measuring 4.5×2.0 cm suggestive of liver abscess.		

[Table/Fig-1]: Laboratory investigations.

ELISA: Enzyme-linked immunosorbent assay, WBC: White blood cell, LFT: Liver function test, IgM: Immunoglobulin M

On review of past case reports, we found that there have been reports of amoebic liver abscess with hepatitis A virus co-infection but very few case reports with hepatitis E virus co-infection [2-4]. There are cases reported on co-infection of Hepatitis A and Salmonella with amoebic liver abscess, but no recorded literature has been documented with co-infection of hepatitis E with amoebic liver abscess even though the mode of transfer of infection is common in both [5].

Also, jaundice in amoebiasis is a rare entity. A study by Dutta DV et al., demonstrated that cholestasis was one of the important causes of jaundice in amoebic liver abscess, where patients had raised conjugated bilirubin levels [6]. These patients were diagnosed late and had more severe complications. Debnath CR et al., in 250 cases majority of patients were male presenting with complaints of upper abdominal pain, high grade fever, vomiting, nausea and loss of appetite. On examination, tenderness in right hypochondriac region was the predominant signs associated with hepatomegaly [7]. In another study by Nigam P et al., which included 236 patients [8], the incidence of cholestasis was 29% with alcohol as one of the important aetiological factors. It also showed that patients with large single or multiple abscesses in the inferior surface of liver had higher incidence of jaundice. Many other studies have also demonstrated the same findings [9]. In this respect, jaundice in a patient with amoebic liver abscess should be carefully interpreted.

CONCLUSION

As demonstrated in the present case, the jaundice present was not explained by the position of abscess. So in such cases a co-infection by another pathogen should always be considered. Another interesting aspect to be noted is in a patient with amoebic liver abscess, a non responsiveness or delayed response to treatment should raise the suspicion of another concurrent illness like hepatitis E. The course of illness maybe prolonged in such instances with the prognosis being excellent if patient is diagnosed early and treated appropriately.

REFERENCES

- [1] Sharma MP, Ahuja V. Amoebic liver abscess. *JACM*. 2003;4(2):107-11.
- [2] Jain A, Kar P. HBsAg carrier with simultaneous amoebic liver abscess and acute hepatitis E. *Indian Journal of Gastroenterology*. 1999;18(3):124.
- [3] Orenstein WA, Wu E, Wilkins J, Robinson K, Francis DP, Timko N, et al. Simultaneous amoebic liver abscess and hepatitis A. *American Journal of Gastroenterology*. 1981;75(1):52-54.
- [4] Schwartz E, Piper-Jenks N. Simultaneous amoebic liver abscess and hepatitis A infection. *Journal of Travel Medicine*. 1998;5(2):95-96.
- [5] Jeans AR, McKendrick MW. *Salmonella Paratyphi A* liver abscess--secondary infection of an amoebic liver abscess. *Travel Med Infect Dis*. 2007;5(2):144-46
- [6] Datta DV, Saha S, Singh SA, Aikat BK, Chhuttani PN. The clinical pattern and prognosis of patients with amoebic liver abscess and jaundice. *The American journal of digestive diseases*. 1973;18(10):887-98.
- [7] Debnath CR, Debnath MR, Khalid MS, Mahmuduzzaman M. Clinical profile of 250 cases of amoebic liver abscess. *Mymensingh Med J*. 2013;22(4):712-15.
- [8] Nigam P, Gupta AK, Kapoor KK, Sharan GR, Goyal BM, Joshi LD. Cholestasis in amoebic liver abscess. *Gut*. 1985;26:140-45.
- [9] Khan JA, Jafri SM, Khan MA. Obstructive jaundice: an unusual presentation of amoebic liver abscess. *J Trop Med Hyg*. 1990;93(3):194-96.

PARTICULARS OF CONTRIBUTORS:

1. Senior Resident, Department of General Medicine, Kasturba Medical College, Manipal, Karnataka, India.
2. Intern, Department of General Medicine, Kasturba Medical College, Manipal, Karnataka, India.
3. Assistant Professor, Department of General Medicine, Kasturba Medical College, Manipal, Karnataka, India.
4. Assistant Professor, Department of General Medicine, Kasturba Medical College, Manipal, Karnataka, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Biji Bob Thomas,
House No. 4, Jawahar Nagar, Prenderghast Road, Secunderabad-500003, Telangana, India.
E-mail: bobth_18@gmail.com; janaktb@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jul 10, 2017**
Date of Peer Review: **Aug 08, 2017**
Date of Acceptance: **Sep 30, 2017**
Date of Publishing: **Feb 01, 2018**