

CLINICAL PROFILE, COMPLICATIONS AND CURRENT MANAGEMENT OF AMOEBIC LIVER ABSCESS- A STUDY OF 100 CONSECUTIVE CASES

Sadashiv N. Chaudhari¹, Ram P. Prajapat², Abdul Khan³

¹Assistant Professor, Department of General Surgery, Seth GSMC and King Edward Memorial Hospital, Parel, Mumbai, Maharashtra. ²Associate Professor, Department of General Surgery, Seth GSMC and King Edward Memorial Hospital, Parel, Mumbai, Maharashtra. ³Speciality Medical Officer, Bhabha Hospital, Kurla, Mumbai, Maharashtra.

ABSTRACT

BACKGROUND

Amoebic Liver Abscess (ALA) in the Indian population has been relatively common and continues to have a significant morbidity in terms of days lost from work. The mortality rate of ALA cases reported to be around 11%-14% before 1984 and has reduced to around 1% at present. This article aims to review the trends in the clinical aspects of ALA in adult patients.

METHODS

This is a study of 100 consecutive patients diagnosed with liver abscess at a tertiary care center in Western India which were followed up in a prospective manner during their hospital stay and during readmissions. Ultrasonography (USG) and Computed Tomography (CT) were used as diagnostic tools. A pre-decided protocol of management was followed. All patients with unruptured abscesses with size less than 5 cms were given a trial of oral/IV anti-amoebic medications. Larger ones were drained under the cover of medications. Open surgical interventions were reserved for ruptured abscesses and for patients with toxic symptoms. Laparoscopic drainage was instituted for abscesses not responding to aforementioned conservative methods.

RESULTS

Mean hospital stay was 13.4 days with length of stay ranging from 2 to 35 days (S.D. 8.4 days). 100 patients were included in the study. Right lobe involvement was seen in 70% cases while left lobe was involved in 9% cases. Bilateral lobar involvement was seen in 5% cases. 22 patients had more than one ALA. 16% of patients presented with ruptured liver abscess where open surgical drainage was done. Eight patients were put on conservative treatment with intravenous metronidazole, of which, 4 patients responded well to conservative treatment while 4 patients failed to respond to treatment and their abscesses were aspirated. Aspiration along with antibiotics was performed in 76% cases as first line of therapy. Two patients who underwent emergency laparotomy for ruptured ALA, died.

CONCLUSIONS

Aetiology of LA in children has remained the same over the years, and in most regions, it is associated with Staphylococcus aureus and amoebic LA is quite uncommon. US or CT scan are the most frequently employed diagnostic modalities for LA, and follow-up is usually performed by serial US scans. Antimicrobial therapy along with drainage of the abscess by either percutaneous or open surgical route, if required remains the treatment of choice.

KEYWORDS

Amoebic, Liver Abscess

HOW TO CITE THIS ARTICLE: Chaudari SN, Prajapati RP, Khan A. Clinical profile, complications and current management of amoebic liver abscess- a study of 100 consecutive cases. J. Evid. Based Med. Healthc. 2019; 6(36), 2420-2422. DOI: 10.18410/jebmh/2019/496

BACKGROUND

Amoebic liver abscess (ALA) is a major diagnostic and therapeutic challenge to the medical fraternity, especially in the tropics, and is a life threatening and a potentially serious condition if left untreated. In present study, we aimed to

study the current clinical profile, complications and management strategies for the same.

Amoebiasis is an infection by the intestinal protozoan *Entamoeba histolytica*. About 90% of the infections are asymptomatic and the remaining 10% produce a spectrum of clinical syndromes ranging from dysentery to abscess of liver or other organs.^{1,2} Amoebic liver abscess (ALA) is the commonest extra-intestinal manifestation of amoebic infection, possibly because of portal circulation. Despite improved sanitation and advances in treatment, ALA has the highest rate of incidence in developing countries of the tropical regions, including India, where it is endemic.^{2,3} The right lobe of liver is more commonly affected than the left lobe and usually is solitary (30–70%). This has been attributed to the fact that the right lobe portal laminar blood flow is supplied predominantly by the superior mesenteric

Financial or Other, Competing Interest: None.
Submission 09-08-2019, Peer Review 15-08-2019,
Acceptance 23-08-2019, Published 03-09-2019.

Corresponding Author:

Dr. Sadashiv N. Chaudhari,
Assistant Professor, Department of General Surgery,
Seth GSMC and King Edward Memorial Hospital,
Parel, Mumbai, Maharashtra.

E-mail: drsadashiv@gmail.com

DOI: 10.18410/jebmh/2019/496



vein, whereas the left lobe portal blood flow is supplied by the splenic vein.⁴ Mathur S et al. observed four decades ago that fever occurred in 87% of patients and pain at right upper abdominal quadrant in 83% of patients, as main presenting complaints.⁵ Seven percent patients presented with epigastric pain. Diarrhoea was seen in only 7% of patients. Seventy three percent had point tenderness, with 91% having tender hepatomegaly.

METHODS

100 consecutive patients who presented with a liver abscess between 1/12/2016 – 1/6/2018 were prospectively followed up and included in the study after approval by Institutional Ethics committee. Date of last contact was based on endpoints of resolution of symptoms or in-hospital mortality. A pre-decided protocol of management was followed. All patients with unruptured abscesses with size less than 5 cm were given a trial of oral/IV antiamoebic medications; larger ones were drained percutaneously under the cover of medications. Open surgical interventions were reserved for ruptured abscesses, for patients with toxic symptoms. Laparoscopic drainage was instituted for abscesses not responding to aforementioned conservative methods.

RESULTS

Mean age of the study subjects was 44.45 years with 50% of the subjects between 41-50 years of age (Range 18-72 years). Male predominance was observed in study subjects with male to female ratio of 8: 1 which resonates with prior observations in literature. 66% of patients were chronic alcoholics. Most common presenting complaint was abdominal pain (100%) followed by fever (53%) and abdominal distension (52%). Most common finding on per abdomen examination was tenderness in the right hypochondrium or intercostal tenderness (100%) followed by hepatomegaly (77%) and jaundice (23%). On ultrasonographic examination of abdomen of these cases, right lobe involvement was seen in 70% cases while left lobe was involved in 9% cases. Bilateral lobar involvement was seen in 5% cases and ruptured abscess was presented in 16% cases of which 15 were from right lobe and one ruptured abscess in left lobe. 22 patients had more than one ALA. Among the 84 patients with unruptured ALA, size ranged from 3-14 cm on imaging. Anaemia was present in 37 cases while leucocytosis was seen in 78 cases. Altered liver function was observed in 41 patients and it was primarily an obstructive pattern. Only 10 of these 41 patients had transaminase elevations. Associated complications were ascites (9%), pleural effusion (13%) and peritonitis (6%).

Patients were managed according to a pre-decided protocol. Out of 100 patients, 16% of patients presented with ruptured liver abscess where open surgical drainage was done. Eight patients were put on conservative treatment with intravenous metronidazole, of which, 4 patients responded well to conservative treatment while 4 patients failed to respond to treatment and their abscesses were aspirated. Aspiration along with antibiotics was performed in 76% cases as first line of therapy. A dry-tap without

placement of pigtail catheter was performed by the interventional radiology department in 15 of the 76 patients while the remaining 61 had indwelling pigtailed catheters which were managed expectantly as per drainage amount. 10 of these 61 had minimal to no collections on residual USG scans prior to discharge and hence the catheters were removed, and patients were discharged with appropriate oral medical therapy. The 51 patients who remained, were discharged home with their pigtail catheters in situ, 18 of which had more than 1 pigtail at the time of discharge. There was a total of 15 readmissions for 12 patients. All patients who were discharged (98/100) were treated with Metronidazole 750 mg orally three times a day for 10 days followed by luminal clearance with a full course regimen with diloxanide furate. There were no pregnant patients or children in this study.

Mean hospital stay was 13.4 days with length of stay ranging from 2 to 35 days (S.D. 8, 4 days). There were 2 deaths in this study, 2 male patients aged 70 and 63 years who underwent laparotomy and drainage for ruptured liver abscess. Both of them had presented in shock, profound tachycardia and with APACHE II score of more than 15.

DISCUSSION

ALAs are most commonly solitary, though in 16% of the cases may be multiple.⁶ Secondary bacterial infection is common in multiple liver abscesses. On laboratory culture, a pyogenic abscess may yield bacterial flora.^{7,8} Amoebic liver abscess does not show neutrophils, as there is no pus, and amoebae are rarely isolated from the abscess. Patients with pyogenic abscess are typically older and have a history of underlying bowel disease or recent surgery. Amoebic serology is helpful, but aspiration of the abscess, with Gram's staining and culture of the material may be required for differentiation of the two diseases.¹ Male predominance is due to different life styles of men and women of our country with males going out for work consume contaminated water and unhygienic food from street vendors and road side hotels whereas women are mostly house bound.² The most commonly involved region of the liver in the study was the right lobe in about 71% of cases. This was also in accordance with the findings observed by Kebede A et al.,⁹ and Khan RA et al.¹⁰ in their studies. The reason why right lobe of the liver is more prone to develop abscess than the left lobe is due to greater volume of blood going to right side in a laminar flow pattern, than the left lobe.¹¹

Kemparaj P et al. in their studies, observed anaemia in 36% cases while leucocytosis was seen in 78% cases.^{12,13} Jain V et al. observed Pleural effusion was seen in 12% (n=6) cases whereas ascites was observed in 6% cases.¹⁴ In a study by Dhanapal PV et al. most of the liver abscess cases were managed with interventions.¹⁵ About 30% of cases were treated by single aspiration and 20% of cases by multiple aspirations. Percutaneous catheter drainage was the mode of treatment in 25% of cases. 22% of cases needed laparotomy and drainage all of which were ruptured abscesses. 3% of patients in whom the abscess size was less

than 5 centimetres were managed conservatively. There was 1 (1%) death in their study. Zerem E et al. reported needle aspiration either single or multiple was successful in 67% of patients and percutaneous catheter drainage was successful in 100% of patients.¹⁶ In another study, minimally invasive aspiration of 30-40% of patients was adequate under USG guidance and 49% underwent USG guided Malecot catheter drainage.^{12,13} Indication for laparotomy was peritonitis following rupture of liver abscess. 4% of patients underwent surgical intervention. Overall mortality was 2.5%. The overall mortality rate seen in amoebic liver abscess from various series ranges from 2-15%. It appears in literature that abscess size less than 5 cm responds favourably to antibiotic alone. This was reflected in our study as well.

In our study 66% of patients were found to have history of chronic alcohol intake. A study by Sharmila et al. has shown alcohol intake history present in 82 percent of patients.¹⁷ Most common presenting complaint in our study was pain abdomen (100%) followed by fever (53%) and abdominal distension (52%). The commonest clinical presentation observed in the study by Dhanapal PV et al. was abdominal pain which was found in 100% of cases which was followed by abdominal distension and fever in about half of the cases.¹⁵ This is also similar to the observations made by Jain V et al., Kemparaj P et al., and Kebede A et al.^{9,12,14}

CONCLUSIONS

The clinical profile of ALA today seems comparable to older studies. However, the diagnostic modalities have improved with better imaging and serologic testing. Metronidazole is still useful almost universally in ALA cases. More patients respond to pigtail drainage or even multiple catheters as required and lesser patients require open drainage. Laparoscopic drainage has been attempted with significant success in multiple studies for abscesses that are large, or which do not settle with conservative management, circumventing the need for a formal laparotomy in many patients.

ACKNOWLEDGEMENT

We would like to thank our HOD Dr. Rajeev Satoskar for permitting us to conduct this study.

REFERENCES

- [1] Abbas MT, Khan FY, Muhsin SA, et al. Epidemiology, clinical features and outcome of liver abscess: A single reference center experience in Qatar. *Oman Med J* 2014;29(4):260-263.
- [2] Nath J, Singha B, Paul J, et al. Diagnosis and epidemiology of amoebiasis in India. *Curr Sci* 2018;114(10):2045-2052.
- [3] Rahimian J, Wilson T, Oram V, et al. Pyogenic liver abscess: recent trends in etiology and mortality. *Clin Infect Dis* 2004;39(11):1654-1659.
- [4] Lardiè-re-Deguelte S, Ragot E, Amroun K, et al. Hepatic abscess: diagnosis and management. *J Visc Surg* 2015;152(4):231-243.
- [5] Mathur SN, Itigi A, Krishnaveni, et al. Tinidazole and metronidazole in the treatment of amoebic liver abscess. *J Int Med Res* 1973;1(2):429-433.
- [6] Martínez-Palomo A, Espinosa-Cantellano M, et al. Amebic Liver Abscess. In: Muriel P, ed. *Liver pathophysiology: therapies and antioxidants*. Academic Press 2017:181-186.
- [7] Lübbert C, Wiegand J, Karlas T. Therapy of liver abscesses. *Viszeralmedizin* 2014;30(5):334-341.
- [8] Olivos-García A, Saavedra E, Ramos-Martínez E, et al. Molecular nature of virulence in *Entamoeba histolytica*. *Infect Genet Evol* 2009;9(6):1033-1037.
- [9] Kebede A, Kassa E, Ashenafi S, et al. Amoebic liver abscess: a 20-year retrospective analysis at Tikur Anbessa Hospital, Ethiopia. *Ethiopian J Health Development* 2011;18(3):199-202.
- [10] Khan R, Hamid S, Abid S, et al. Predictive factors for early aspiration in liver abscess. *World J Gastroenterol* 2008;14(13):2089-2093.
- [11] Kurland JE, Brann OS. Pyogenic and amoebic liver abscesses. *Curr Gastroenterol Rep* 2004;6(4):273-279.
- [12] Kemparaj T, Khan MR, Narayan S. Liver abscess presentation and management: a retrospective study. *Int Surg J* 2017;4(2):550-554.
- [13] Kemparaj T, Muralidhar A, Narasimhamurthy KN. Our experiences with liver abscesses in hospitals attached to Bangalore Medical College and Research Institute, India. *Int Surg J* 2018;5(10):3292-4297.
- [14] Jain V, Manjavkar S, Kapur P, et al. Clinical and biochemical profile of liver abscess patients. *Int J Res Med Sci* 2017;5(6):2596-2600.
- [15] Dhanapal PV, Banurekha R. Clinical profile of liver abscess in a tertiary referral hospital. *Int Surg J* 2017;4(6):2025.-2029.
- [16] Zerem E, Hadzic A. Sonographically guided percutaneous catheter drainage versus needle aspiration in the management of pyogenic liver abscess. *AJR Am J Roentgenol* 2007;189(3):W138-W142.
- [17] Sharmila SK, Muneer Kanha M. Clinical profile of liver abscess. *IOSR J Dent Med Sci* 2015;14(2):25-38.