

**How to Cite:**

Shaparia, P., Chaudhari, O., Bilwal, H., Shah, B., & Maharaul, H. H. (2022). An analysis of ruptured amoebic liver abscess. *International Journal of Health Sciences*, 6(S4), 8287–8294. <https://doi.org/10.53730/ijhs.v6nS4.10521>

## **An analysis of ruptured amoebic liver abscess**

**Dr. Pratik Shaparia**

Assistant Professor, Department of Surgery, Smt.B. K. Shah Medical Institute and Research Centre, Sumandeep Vidyapeeth Deemed to be University, Piparia Vadodara

**Dr Ohang Chaudhari**

Associate Professor, Department of Surgery, Smt.B. K. Shah Medical Institute and Research Centre, Sumandeep Vidyapeeth Deemed to be University, Piparia Vadodara

**Dr Hiren Bilwal**

Assistant Professor, Department of Surgery, Smt.B. K. Shah Medical Institute and Research Centre, Sumandeep Vidyapeeth Deemed to be University, Piparia Vadodara

**Dr Bhavin Shah**

Professor, Department of Surgery, Smt.B. K. Shah Medical Institute and Research Centre, Sumandeep Vidyapeeth Deemed to be University, Piparia Vadodara

**Dr Honeyपालsinh H Maharaul**

Professor, Department of Surgery, Smt.B. K. Shah Medical Institute and Research Centre, Sumandeep Vidyapeeth Deemed to be University, Piparia Vadodara  
Corresponding author email: [honeypal.219@gmail.com](mailto:honeypal.219@gmail.com)

**Abstract**---Introduction: Amoebic liver abscess (ALA) is the most commonly seen extra intestinal manifestation of Entamoeba infection.<sup>[1]</sup> Out of which, a rare complication of amoebic liver abscess is rupture of liver abscess. We report 43 cases of ruptured amoebic liver abscess coming with acute abdomen which were operated at Department of Surgery, Dhiraj general hospital, Vadodara from January 2020 to December 2021. Surgical treatment in these cases should be carried out in a timely fashion prior to the presentation of systemic repercussions or death. result: Out of all patients, 37 patients were male and 6 were female and 37 patients were chronic alcoholic. The mean age was 47 years. At presentation, most cases had clinical signs of generalized peritonitis. Ultrasonography for collection in peritoneal cavity showed moderate free fluid with internal echoes suggestive of pyoperitoneum. Out of which 09 patients had free air under the diaphragm. All 43 patients underwent resuscitation and then shifted for surgery. All underwent exploratory laparotomy for

ruptured liver abscess. Intraoperatively, 05 patients had a single abscess in the right lobe, 06 had abscess in both lobes of liver and 33 had multiple abscesses in right lobe. There was no case of exclusive left lobe abscess. Out of all, 14 patients had perforation in the cecum, 03 patients had a perforation in ascending colon. Exploratory laparotomy and peritoneal wash with wash to abscess cavity was done in 26 patients. Limited resection (Caecal resection) with double barrel ileo-colostomy was done in 08 cases. Primary closure of perforation with proximal ileostomy was done in 03 patients. Right hemicolectomy with end ileostomy and transverse colostomy as mucus fistula was done 06 cases. Liver abscess in all 43 cases were amoebic as amoebic serology of pus was positive in all cases. Postoperatively, 34 patients had pleural effusion, 02 had empyema, 30 patients had sepsis and 14 patients died. Conclusion: Perforation of proximal large bowel is very frequent condition found in patients of ruptured amoebic liver abscess presenting as acute abdomen with high mortality. Surgical intervention is mandatory in all these cases.

**Keywords**---amoebiasis, ruptured liver abscess, caecal perforation, exploratory laparotomy.

## Introduction

*Entamoeba Histolytica* is endemic in many parts of world. It is spread by the fecal-oral route.<sup>[1]</sup> The presentation includes wide spectrum depicting pathology from asymptomatic carrier state to dysentery to fulminant colitis or liver abscess and colonic perforation. In invasive amoebiasis mainly in immunocompromised subjects or malnourished or chronic alcoholics, the trophozoites penetrate the intestinal mucosal layer causing amoebic colitis which is carried along the portal circulation to produce liver abscess and this abscess may rupture into peritoneal, pericardial or pleural cavity. Thus, it carries a high rate of morbidity and mortality and mainly occurs in malnourished patients of developing countries.

As such Perforation of the caecum from amoebiasis itself is infrequent, but it is very frequent in cases of ruptured amoebic liver abscess. Primarily caecal pathology presents mainly as acute abdomen which poses a great challenge to timely manage as most cases are often misdiagnosed and thus require urgent intervention.<sup>[2]</sup> These pathologies often mimic acute appendicitis. This misdiagnosis can often lead to over or under-treatment of the actual pathology thus resulting in higher morbidity and mortality. Ruptured pyogenic liver abscess should be suspected if septic shock and diffuse abdominal pain are found in a patient with liver abscess. Thus, timely and accurate identification of a primary caecal pathology is important so that patient outcome can be improved. This study was done to highlight the incidence and outcomes of amoebic liver abscess associated with colonic perforation as documented by us at Dhiraj general hospital, Vadodara.

## Materials and Methods

We conducted a clinical, retrospective, and observational study which presented cases of ruptured amoebic liver abscess in a time period of 2 years from January 2020 to December 2021 at Department of Surgery, Dhiraj general hospital, Vadodara. A total of 43 patients presenting with acute abdomen at having amoebic liver abscess were selected over a period of two years between 2020 and 2021. All patients had undergone emergency laparotomy, and the cases with amoebic liver abscess established on histopathology were studied in terms of incidence, clinical presentation and outcomes.

Inclusion criteria: All patients with ruptured amoebic liver abscess

Exclusion criteria: Patients with other causes of gut perforation causing peritonitis. A detailed case study of all the patients who met the inclusion criteria were studied in terms of age, sex, risk factors, clinical presentation, radiological investigations, treatment plan, intraoperative findings, post operative complications, course of treatment, mortality data. This data was collected from indoor records of the patient, operation theatre notes and outpatient department follow up of cases.

All the above cases which were diagnosed with ruptured liver abscess were aggressively resuscitated, undertaken investigations like complete blood count, blood group, coagulation profile, serology, chest xray, abdomen xray, ultrasonography and then shifted to operation theatre. Intraoperative findings like pus filled peritoneal cavity, abscess cavity in liver, bowel adhesions, perforation in large bowel were seen and documented. The peritoneal cavity and abscess cavity were irrigated with warm normal saline till the returns were clear. The abdomen was closed with interrupted one size ethilon non-absorbable suture material after inserting three drains (one subhepatic, one in abscess cavity other in pelvic cavity). Postoperatively, all patients received antibiotics and were discharged accordingly, later followed up for further course of treatment in outpatient department.

## Results

Table 1: distribution according to sex

Sex	Male	Female	Total
Number of patients	37	6	43
percentage	86.04%	13.96%	100%

Table 2: Age wise distribution

Age groups(in years)	Number of patients	percentage
30-40	05	11.62%
40-50	19	44.18%
50-60	16	37.20%
60-70	03	6.97%
Total	43	100%

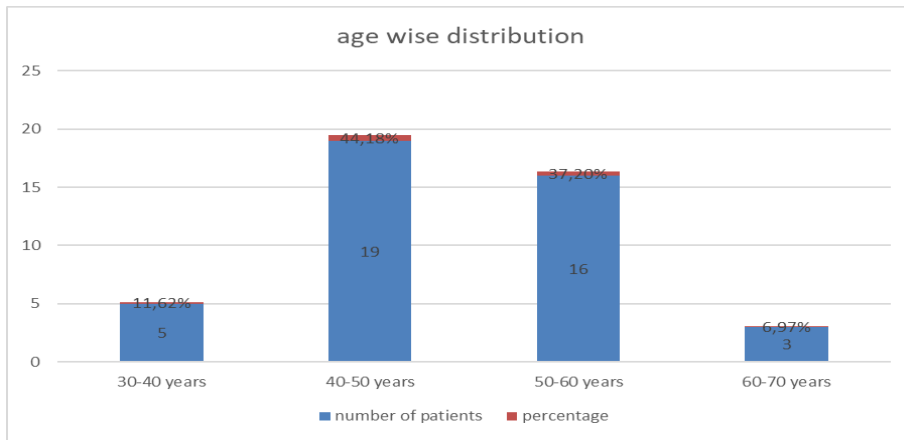


Table 3: Clinical presentation

Clinical presentation	Number of patients	Percentage
Abdominal pain /RUQ pain	40	93.02%
Abdominal distention	32	74.41%
Fever	41	95.34%
Breathlessness/Tachypnoea	36	83.72%
Jaundice	06	13.95%
Nausea /Vomiting	34	79.06%
Total	43	100%

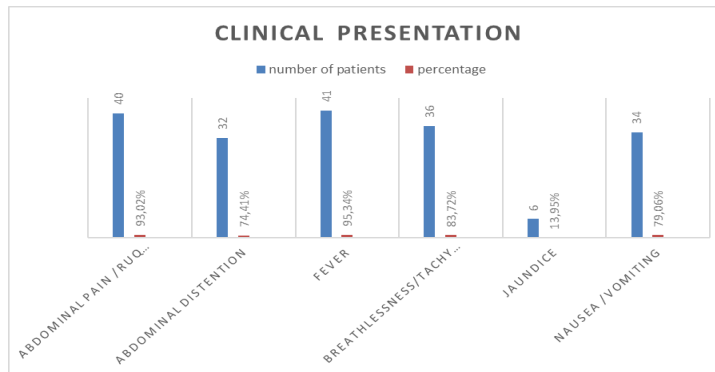


Table 4: Association with alcoholism

	Number of patients	percentage
Alcoholic Patient	37	86.04%
Non Alcoholic Patient	06	13.95%
Total	43	100%

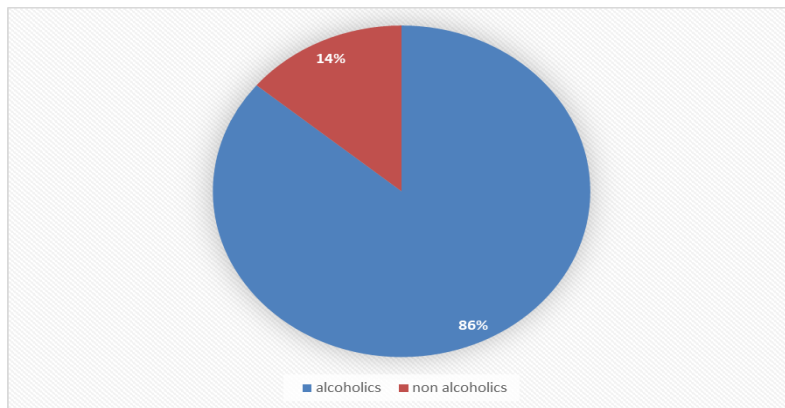


Table 5: Associated comorbidities

Comorbidities	No. of Patients	Percentage
Diabetes	19	44.18%
Tuberculosis	02	4.65%
CRF ( On Dialysis)	01	2.32%
CHF	01	2.32%
MI	02	4.65%
Valvular Heart Disease	01	2.32%
Without co-morbidities	17	39.53%
Total	43	100%

Table 6: Surgical procedure

Surgical procedure	Number of patients	Percentage
Laparotomy and peritoneal lavage with wash of abscess cavity	26	60.46%
Caecal resection(limited resection) with double barrel ileocolostomy	08	18.60%
Right hemicolectomy with End ileostomy and transverse colostomy as mucous fistula	06	13.95%
Perforation closure with proximal ileostomy	03	6.97%
Total	43	100%

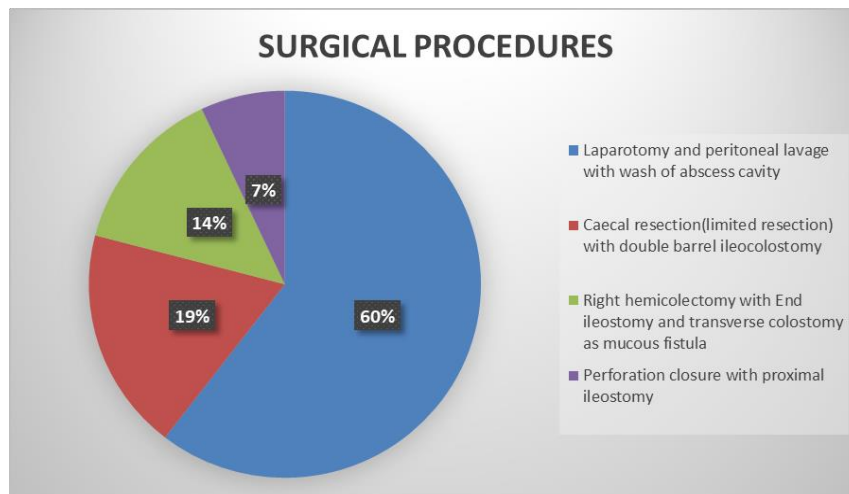


Table 7: Major complications

Major Complications	Number of patients	Percentage
Plueral effusion	34	79.06%
Empyema	02	4.65%
Postoperative sepsis	30	69.76%
Death	14	32.55%

As seen in table 1, total 43 patients were seen out of which 37 were male i.e. 86% and 6 were female i.e. 13.96%. Out of 43 patients, 5 patients were in age of 30-40 years i.e. 11.62%, 19 patients were of 40-50 years i.e. 44.18%, 16 patients were of 50-60 years i.e. 37.20%, 3 patients were above 60 years i.e. 6.9%. ( table 2) . Thus, the mean age was 47 years. Out of 43 patients which had generalized peritonitis., 40 presented with abdominal pain( Right upper quadrant pain), Abdominal distention was seen in 32 patients, Fever was seen in 41 patients, 36 patients presented with tachypnea and breathlessness, jaundice was seen in 6 patients, 4 patients presented with nausea and vomiting.( Table 3)

In all patients, Ultrasonography for collection in peritoneal cavity showed moderate free fluid in with internal echoes suggestive of pyoperitoneum. 09 patients had free air under the diaphragm in x-ray. Out of 43 patients, 37 were alcoholic i.e. 86% and 6 were non alcoholic i.e. 13.95% as seen from table 4. Out of 43 patients, 19 were seen having diabetes i.e. 44.18%, 2 had tuberculosis and 2 had Myocardial infarction i.e. 4.6%, 1 patient had Chronic renal failure and was on dialysis, 1 had Congestive heart failure and 1 had Valvular heart disease i.e. 2.3% and a total of 17 patients i.e. 39.53% had no co-morbidities. (Table 5) According to surgical intervention, 05 patients had a single abscess in the right lobe, 06 had abscess in both lobes of liver and 33 had multiple abscesses. There was no case of exclusive left lobe abscess.

Out of all ruptured liver abscess, 14 patients had perforation in the cecum, 03 patients had a perforation in ascending colon. A total of 26 patients underwent exploratory Laparotomy and peritoneal lavage with wash of abscess cavity i.e.

60.46%, 8 patients underwent Caecal resection(limited resection) with double barrel ileocolostomy i.e. 18.60%, 6 patients underwent Right hemicolectomy with End ileostomy and transverse colostomy as mucous fistula i.e. 13.95%, 3 patients underwent Perforation closure with proximal ileostomy i.e. 6.97%.( Table 6) Liver abscess in all 43 cases were amoebic as amoebic serology of pus was positive in all cases. A total of 34 patients were complicated with pleural effusion i.e. 79%, 2 patients had empyema postoperatively i.e. 4.6% and 30 patients had postoperative sepsis i.e. 69.76% whereas a total of 14 patients i.e. 32.55% succumbed.( Table 7)

## **Discussion**

Our study showed male predominance in patients affected with ruptured liver abscess with 37 patients (86%) which showed similarity with Bhatia et al and Tiwari et al.<sup>[3,4]</sup> In our study, 19 patients were of 40-50 years i.e. 44.18% and the mean age was 47 years whereas in Pang et al. in their study concluded the majority of patients affected were in age group of 50–65 years<sup>[5]</sup> Abdominal pain and fever were the most common presentation in our study whereas in shrikant et al, Pain in abdomen and tenderness was the most common presentation of patients (100% cases).<sup>[6]</sup> In our study, 14 patients had perforation in the cecum whereas in 03 patients had a perforation in ascending colon comparing with kaushal et al, 43 patients revealed cecal perforation and other pathologies that were encountered included volvulus, diverticulitis, and idiopathic typhlitis.<sup>[7]</sup> As our study showed mortality rate of 32.55% comparing with chou FF et al in which the overall mortality rate was higher i.e. (59%)<sup>[8]</sup>

## **Conclusion**

Amoebiasis is the second leading cause of death from parasitic disease worldwide.<sup>[9]</sup> Although, amoebiasis is a common parasitic infection, fulminant amoebic colitis remains a very rare complication with a reported incidence of 1%. Even with aggressive management of this entity, patients have got a poor prognosis. Surgical intervention i.e. draining the abscess and cleaning the abdominal cavity is the only way of saving the patient's lives. The different approaches to surgical management of these patients is discussed above, wherein early identification and timely intervention remain as mainstay of treatment in all cases. Large bowel Perforation is the frequent surgical complication associated with ruptured amoebic liver abscess occurring principally in masculine gender and in the fourth decade of life. Resection and stoma creation is the procedure of choice that can resolve the septic focus from the first surgical procedure, depending on the general status of the patient. Thus, The occurrence of a rupture in the evolution of liver abscess is a factor of mortality. A good knowledge of the predictive factors of rupture can guide therapeutic choice between a medical treatment alone or with percutaneous drainage. This can allow to minimize the frequency of the rupture and others complications, thus reducing the morbidity and the mortality.<sup>[10]</sup> However, morbidity and mortality are high, and there is a tendency for these to be lower on comparing initial cases with those with recently conducted surgical procedures.

## References

1. In Williams, N., In O'Connell, P. R., & In McCaskie, A. (2018). *Bailey & Love's Short Practice of Surgery, 27th Edition: The Collector's edition.*
2. Kaushal-Deep SM, Anees A, Khan S, Khan MA, Lodhi M. Primary cecal pathologies presenting as acute abdomen and critical appraisal of their current management strategies in emergency settings with review of literature. *Int J Crit Illn Inj Sci.* 2018 Apr-Jun;8(2):90-99.
3. Bhatia M, Ali M. Ruptured liver abscess: Analysis of 50 cases. *Med J DY Patil Vidyapeeth* 2017;10:532-5.
4. Tiwari D, Jatav OP, Jain M, Kumar S. Study of clinical and etiopathological profile of liver abscess. *J Evid Based Med Healthc* 2015;2:6705-12.
5. Pang TC, Fung T, Samra J, Hugh TJ, Smith RC. Pyogenic liver abscess: An audit of 10 years' experience. *World J Gastroenterol* 2011;17:1622-30.
6. PERKA, Shrikant et al. Audit of patients with ruptured amoebic liver abscess and outcome of surgical versus non-surgical treatment. *International Surgery Journal*, [S.l.], v. 3, n. 4, p. 2163-2166, dec. 2016. ISSN 2349-2902.
7. Kaushal-Deep SM, Anees A, Khan S, Khan MA, Lodhi M. Primary cecal pathologies presenting as acute abdomen and critical appraisal of their current management strategies in emergency settings with review of literature. *Int J Crit Illn Inj Sci.* 2018 Apr-Jun;8(2):90-99.
8. Chou FF, Sheen-Chen SM, Lee TY. Rupture of pyogenic liver abscess. *Am J Gastroenterol.* 1995 May;90(5):767-70.
9. Stanley, s. l., jr. amoebiasis. *lancet.* 2003; 361:1025–1034
10. Ndong A, Tendeng JN, Ndoye NA, Diao ML, Dieye A, et al. (2020) Predictive risk factors for liver abscess rupture: A prospective study of 138 cases. *Arch Clin Gastroenterol* 6(1): 001-005.
11. Jani, J. R., Bajamal, A. H., Utomo, S. A., Parenrengi, M. A., Fauzi, A. A., Utomo, B., & Dwihapsari, Y. (2021). Correlation between magnetic resonance imaging (MRI) and dynamic mechanical analysis (DMA) in assessing consistency of brain tumor. *International Journal of Health & Medical Sciences*, 4(2), 260-266. <https://doi.org/10.31295/ijhms.v4n2.1737>
12. Widana, I.K., Sumetri, N.W., Sutapa, I.K., Suryasa, W. (2021). Anthropometric measures for better cardiovascular and musculoskeletal health. *Computer Applications in Engineering Education*, 29(3), 550–561. <https://doi.org/10.1002/cae.22202>