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## Dual etiology liver abscess in a non-habitual alcohol user: A case report of concurrent pyogenic and amoebic infection

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### Abstract

In this report, we present a rare case of concurrent amoebic and pyogenic liver abscess in a 50-year-old immunocompetent male with occasional alcohol use, who responded favourably to percutaneous drainage and combination antimicrobial and antibacterial therapy. This case underscores the importance of maintaining a high index of suspicion for mixed infections, especially in endemic settings, and highlights the need for tailored therapeutic strategies to address dual microbial involvement.

**Keywords:** Liver abscess, amoebic liver abscess, pyogenic liver abscess, simultaneous

### Introduction

Liver abscesses are a significant clinical entity in tropical and developing countries, where infectious diseases remain prevalent. They are broadly classified into two main types based on etiology: amoebic liver abscess (ALA), caused by *Entamoeba histolytica*, and pyogenic liver abscess (PLA), which is typically of bacterial origin. While both forms can independently result in substantial morbidity, concurrent amoebic and pyogenic infection in a single hepatic abscess is an uncommon and underreported occurrence, often associated with diagnostic dilemmas and therapeutic challenges.

### Case report

A 50-year-old male, with a background of occasional alcohol consumption (approximately once or twice per week), presented to the Emergency Department with complaints of fever accompanied by chills, nausea and right upper quadrant abdominal pain for the past five days. There was no history of vomiting, jaundice, cough, or weight loss. On examination, the patient was febrile (101.4°F) with stable hemodynamics. Abdominal examination revealed localized tenderness in the right hypochondrium and epigastrium without guarding or organomegaly. Laboratory investigations demonstrated neutrophilic leukocytosis (TLC ~14,800/mm<sup>3</sup>), elevated alkaline phosphatase, and mildly raised transaminases. An urgent abdominal ultrasonography revealed a hypoechoic lesion measuring 42x54x62 mm (75 cc) in segment VII and VIII of right lobe of liver and lesion of 80x75x68 mm (775 cc) in left lobe of liver with impending rupture.

Ultrasound-guided aspiration was performed, and the pus was characteristic of “anchovy sauce” in appearance, suggestive of amoebic liver abscess. However, Gram staining and subsequent culture of the aspirate also showed the presence of gram-negative bacilli, specifically *Escherichia coli*, confirming a secondary pyogenic infection. The dual etiology of the liver abscess was thus established—concurrent amoebic and pyogenic liver abscess. The patient was initiated on intravenous metronidazole (750 mg TID) to target *Entamoeba histolytica*, along with ceftriaxone (2 g/day) as empirical therapy for gram-negative organisms, based on sensitivity reports.

Two pigtail catheters were inserted for continuous percutaneous drainage of the abscess, and the aspirate volume was monitored. The drainage bags showed characteristic anchovy sauce appearance in one and thick white purulent material in another as shown in fig 1 and 2



Over the next few days, the patient's fever subsided, and his abdominal pain diminished. He showed steady clinical improvement. The patient responded to the pig tail insertion and drainage well and completed a full 10-day course of antimicrobials. Follow-up ultrasound demonstrated significant reduction in abscess size. The patient was discharged in stable condition with advice for oral luminal amoebicide and follow-up imaging after two weeks.

This case highlights a rare but clinically important instance of concurrent amoebic and pyogenic liver abscess in a patient without classic high-risk factors such as chronic alcoholism, diabetes, or immunosuppression. In regions endemic for amebiasis, a high index of suspicion should be maintained, and aspiration of abscesses should routinely undergo both parasitological and bacteriological analysis to detect mixed infections. Early initiation of combination therapy and timely intervention with percutaneous drainage can significantly reduce morbidity and ensure recovery.

### Discussion

In liver abscess cases, distinction between amoebic, pyogenic, or mixed infections is crucial for diagnosis and treatment strategy. Studies from northern India and other endemic regions show that while amoebic liver abscesses (ALA) are common, a significant proportion of patients have bacterial involvement either primarily or secondarily. For instance, Priyadarshi *et al.* observed overlapping clinical, laboratory, and imaging features among amoebic and pyogenic abscesses in their comparative analysis, emphasizing that empirical treatment based only on clinical suspicion can miss bacterial co-infection<sup>[1]</sup>.

Similarly, Chethan *et al.* reported mixed infections (pyogenic, amoebic, or mixed infections) as part of their cohort. They found that pyogenic causes are becoming relatively more frequent, particularly in patients with risk factors like alcoholism and older age<sup>[2]</sup>.

The paper on modern management of liver abscesses also highlights that imaging (USG/CT) helps locate abscesses and guide drainage, but differentiating etiologies requires analysis of drained pus through microscopy, culture, and serology for both bacterial and amoebic agents<sup>[3]</sup>.

### Medical Therapy and Drainage

- **For amoebic component:** Metronidazole (or equivalent) is standard. Most ALAs respond well to antiparasitic therapy unless complicated<sup>[3]</sup>.
- **For bacterial component:** Empirical broad-spectrum antibiotics tailored to local antibiogram. Mixed cases require combined antimicrobial therapy for better outcomes. *E. coli*, *Klebsiella*, and *Pseudomonas* are common organisms in such cases<sup>[2, 6]</sup>.

Drainage is indicated for abscess size >5 cm, severe symptoms, or non-response in 48–72 hrs. Percutaneous

catheter drainage (e.g., pigtail catheter) is preferred<sup>[2, 5]</sup>. Duration: Catheter is left in situ until drainage output reduces and imaging shows resolution—usually 7–10 days or more depending on response<sup>[6]</sup>.

In our patient, the presentation (fever with chills, RUQ pain), imaging showing a hepatic abscess, and the finding of “anchovy sauce” pus plus bacterial growth align with what is described in literature for mixed infections—though the mixed etiology is rare in patients without heavy alcohol, immunocompromise, or significant comorbidity. This similarity underscores that even occasional alcohol use does not rule out serious mixed infections. Our case thus adds to the small pool of reports that show that mixed ALA + PLA can occur in less obvious risk settings<sup>[1, 2, 4]</sup>.

### Suggestions for This Patient & Similar Cases

1. Continue combined antimicrobial therapy until imaging confirms resolution, not just symptom relief.
2. Maintain the pigtail catheter properly with sterile precautions and timely flushing to avoid blockage or tract infection.
3. Review local antibiogram to guide antibiotic selection—ensure coverage of *E. coli*, *Klebsiella*, etc.
4. Perform serology or stool exam to detect residual intestinal *E. histolytica*; administer luminal amoebicide if needed.
5. Educate the patient on sanitation and hygiene to prevent recurrence. Even occasional alcohol use may impair host immunity.
6. Schedule follow-up at 2–4 weeks post-discharge with repeat imaging and labs (WBC, LFTs, ALP).
7. Report and publish similar rare presentations to broaden clinical awareness.

### References

1. Priyadarshi RN, Anand U, Kumar B. Comparative study of amoebic and pyogenic liver abscesses: a retrospective analysis of 230 cases. *Indian J Gastroenterol.* 2023;42(1):50–57.
2. Chethan L, Shreya J. Clinical study of liver abscess in a tertiary care hospital. *Int Surg J.* 2021;8(12):3706–10.
3. Wadhera S, Sundar A, Singh R. Modern management of liver abscess. *Indian J Gastroenterol.* 2022;41(3):222–230.
4. Zou Z, Zhang J, Liu Y, Wang H. Amoebic liver abscess co-infected with bacterial liver abscess: A rare case in an immunocompromised patient. *IDCases.* 2025;30:e01546.
5. Singh A, Saxena R, Sharma RK. Study of clinico-aetiological profile of liver abscess in patients of a tertiary care hospital. *J Evid Based Med Healthc.* 2022;9(5):432–437.
6. Gupta N, Nair V, George P, *et al.* Observational study of clinical profiles and management of liver abscess in hospitalized patients: A North-Indian tertiary care perspective. *Cureus.* 2024;16(2):e48172.