

CASE REPORT

Uncommon Occurrence of Primary Tubercular Liver Abscess in an Immunocompetent Patient: Case Report

Debajane Rout¹, Sibaprasad Pattanayak², Ambuja Satpathy³, Soumya Ranjan Jena⁴

HOW TO CITE THIS ARTICLE:

Debajane Rout, Sibaprasad Pattanayak, et al. Uncommon Occurrence of Primary Tubercular Liver Abscess in an Immunocompetent Patient: Case Report. New Indian J Surg. 2025; 16(2): 75-78.

ABSTRACT

Introduction: Tubercular liver abscess is an extremely rare clinical entity, particularly when it presents in isolation without any pulmonary or gastrointestinal involvement and in the absence of immunocompromising conditions. Tuberculosis affecting the liver is observed in approximately 10 to 15 percent of all extrapulmonary tuberculosis cases, while extrapulmonary tuberculosis itself constitutes about 10 to 20 percent of the global tuberculosis burden. Among those with hepatic involvement, tubercular liver abscess represents only a small fraction approximately 0.34 percent making isolated cases in immunocompetent individuals especially uncommon.

Case report: We report the case of a 42-year-old male farmer from Ganjam district who presented with right upper abdominal pain, vomiting, and intermittent fever lasting 20 days. Clinical and radiological investigations revealed an isolated abscess in the right lobe of the liver. There was no history of prior tuberculosis infection or known contact with tuberculosis patients, and the patient had no comorbid conditions. Microbiological analysis of aspirated pus confirmed the presence of *Mycobacterium tuberculosis*. The patient was treated successfully with percutaneous drainage and systemic antitubercular therapy.

AUTHOR'S AFFILIATION:

¹ Post Graduate, Department of General Surgery, MKCG Medical College and Hospital, Berhampur, Odisha 760004, India.

² Professor and HOD, Department of General Surgery, MKCG Medical College and Hospital, Berhampur, Odisha, India.

³ Associate Professor, Department of General Surgery, MKCG Medical College and Hospital, Berhampur, Odisha, India.

⁴ Assistant Professor Department of Surgery, MKCG Medical College and Hospital, Berhampur, Odisha, India.

CORRESPONDING AUTHOR:

Debajane Rout, Post Graduate, Department of General Surgery, MKCG Medical College and Hospital, Berhampur, Odisha 760004, India

E-mail: debajane95@gmail.com

➤ Received: 26-04-2025 ➤ Accepted: 06-06-2025



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-Commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the Red Flower Publication and Open Access pages (<https://www.rfppl.co.in>)

Conclusion: This case highlights the importance of considering tubercular liver abscess in the differential diagnosis of liver abscesses, even in patients without classic risk factors or concurrent tuberculosis elsewhere in the body. Early diagnosis and appropriate treatment are essential for favourable outcomes, particularly in regions where tuberculosis is endemic.

KEYWORDS

• Primary hepatic tuberculosis • Tubercular liver abscess • Immunocompetent host • Percutaneous abscess drainage • Antitubercular therapy

INTRODUCTION

Primary hepatic tuberculosis is rare, especially in immunocompetent individuals. Hepatic involvement occurs in 10–15% of extrapulmonary TB cases, with tubercular liver abscess (TLA) accounting for just 0.34%. Isolated TLA without pulmonary or gastrointestinal TB is exceptionally uncommon, typically arising via hematogenous or lymphatic spread of *Mycobacterium tuberculosis*.

CASE REPORT

A 42-year-old male farmer from Ganjam presented with 20 days of non-radiating right hypochondrial and epigastric pain, vomiting, and intermittent fever with chills and rigors. He had no contact with TB patient, or comorbidities. He was febrile, anaemic; pulse 98 bpm, BP 106/70 mmHg, RR 16/min. Abdominal exam showed tenderness and

guarding in the right hypochondrium, liver span 16 cm, no splenomegaly or ascites; other systems were normal.

Investigations

Blood tests showed mild anaemia (Hb 10.2 g/dL) and leukocytosis (TLC 11,000/mm³), indicating possible inflammation. Platelet count was normal (3.1 lakh/mm³). ESR was elevated (52 mm/hr), suggesting chronic inflammation. LFT and RFT were normal. Viral serologies (HIV, HBsAg, HCV) were non-reactive.

Chest X-ray showed no signs of pulmonary TB. Abdominal USG revealed a well-defined cystic, heterogeneous hypoechoic lesion (5.6 cm × 6.8 cm × 8.8 cm) in the right liver lobe, CECT abdomen confirmed a non-enhancing, low-density lesion with central hypodensity and peripheral rim enhancement features suggesting a liver abscess.

Table 1: Complete blood count report of the patient

Test	Result	Unit	Reference Range
Hemoglobin (Hb)	9.1	g/dL	13.8–17.2 (men) / 12.1–15.1 (women)
White Blood Cells (WBC)	19,000	cells/mL	4,000–11,000
Neutrophils (Polymorphs)	76	%	40–70%
Lymphocytes	20	%	20–40%
Eosinophils	2	%	1–6%
Platelets	3.27	lacs/mL	1.5–4.5 lacs/mL

Table 2: Liver Function Test and Renal Function Test reports of the patient

Test	Result	Unit	Reference Range
Serum Urea (Sr. Ur)	31	mg/dL	10–50
Serum Creatine (Cr)	0.6	mg/dL	0.6–1.2

Total Bilirubin	0.5	mg/dL	0.3-1.2
Direct Bilirubin	0.1	mg/dL	0.1-0.3
AST (SGOT)	64	U/L	5-40
ALT (SGPT)	58	U/L	7-56
Serum Proteins (Total)	6.0	g/dL	6.0-8.3
Serum Albumin (Sr. Alb)	3.2	g/dL	3.4-5.4
Sodium (Na ⁺)	136	mEq/L	135-145
Potassium (K ⁺)	3.7	mEq/L	3.5-5.1

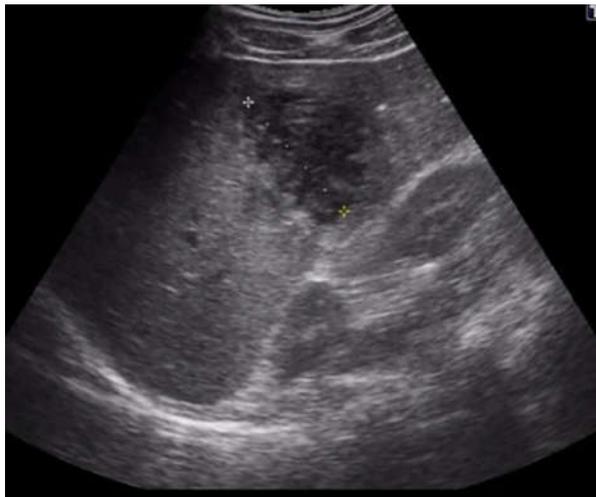


Figure 1: Ultrasound of liver showing a well-defined, heterogeneous hypoechoic lesion (marked by white arrows) measuring approximately 5.6 × 6.8 × 8.8 cm in the right lobe of the liver



Figure 2: X-ray chest showing no evidence of pulmonary TB

Treatment

The patient underwent USG guided pigtail catheterization, draining approximately 150 ml of cream-colored pus. Empirical intravenous antibiotics metronidazole 750 mg TDS and amikacin 500 mg BD were started. The pus was sent for Ziehl-Neelsen staining, Gram staining, culture and sensitivity, and CBNAAT. ZN stain revealed acid-fast bacilli, and CBNAAT confirmed *Mycobacterium tuberculosis*, diagnosing a tubercular liver abscess.

After removing the pigtail catheter, standard ATT was initiated: isoniazid, rifampicin, pyrazinamide, ethambutol and pyridoxine for 2 months, followed by isoniazid and rifampicin for 6 months. The patient was discharged in stable condition and follow-up after 6 weeks showed marked regression of the abscess.

DISCUSSION

Bristowe first described tubercular liver abscess (TLA) in 1858. Most of the cases described usually occurred in association with miliary tuberculosis, mainly through hematogenous dissemination travelled there via hepatic artery but in Primary hepatic involvement the route of spread is the portal vein. In an Indian study of 242 immunocompetent TB, 38 had isolated liver involvement of which 10 had TLA.

Levine classified Hepatic TB into:

1. Miliary tuberculosis
2. Primary pulmonary tuberculosis with liver involvement
3. Primary liver tuberculosis
4. Tubercule(abscess)
5. Tuberculous cholangitis

Symptoms of the disease are commonly non-specific and include fever, vague abdominal pain, anorexia, weight loss, hepatomegaly. Jaundice is a very rare.

Percutaneous drainage of the abscess, combined with systemic ATT (HERZ) regimen for 2 months followed by (HR) regimen for 4 months are the treatment of choice.

CONCLUSION

Although rare, isolated tubercular liver abscess should be considered in liver abscess diagnoses, especially in endemic regions like India, even in immunocompetent individuals. Early diagnosis with imaging and microbiological tests, followed by antitubercular therapy, ensures better outcomes.

Conflict of Interest Statement: The authors declare no conflict of interest.

Funding Statement: No external funding was received for this study.

Abbreviations:

TLA – Tubercular Liver Abscess

ATT – Antitubercular Therapy

HERZ – Isoniazid (H), Rifampicin (R), Ethambutol (E), Pyrazinamide (Z)

HR – Isoniazid (H), Rifampicin (R)

ZN – Ziehl-Neelsen

CBNAAT – Cartridge-Based Nucleic Acid Amplification Test

REFERENCES

1. Agarwala R. Xpert MTB/RIF for diagnosis of tubercular liver abscess: A case series. *Infez Med.* 2020; 28: 420-424.
2. Kumar A., Kumar A., Kumar A., *et al.* An immunocompetent adult male presented with a liver abscess caused by Mycobacterium tuberculosis: A case report from India. *Case Rep Infect Dis.* 2023; 2023: 9049315. doi:10.1155/2023/9049315.
3. Devi S., Mishra P., Sethy M. Isolated tubercular liver abscess in a non-immunodeficient patient: A rare case report. *Cureus.* 2019; 11: e5677.
4. Meena M., Dixit R., Meena LP. Primary/local hepatic tuberculosis without dissemination. *BMJ Case Rep.* 2015 Jan 27; 2015.
5. M.N. Akcay, K.Y. Polat, D. Oren, G. Ozturk Primary tuberculous liver abscess. A case report and review of literature, *Int J Clin Pract*, 58 (2004), pp. 625-627
6. Hayashi M., Yamawaki I., Okajima K., Tomimatsu M., Ohkawa S. Tuberculous liver abscess not associated with lung involvement. *Intern Med.* 2004; 43(6): 521–3.
7. Eshiwe C., Shahi F., Gordon N., Lillie P. Rare and unusual case of hepatic and disseminated tuberculosis in an immunocompetent patient. *BMJ Case Rep.* 2019; 12: e229384.
8. Brookes M.J., Field M., Dawkins D.M., Gearty J., Wilson P. Massive primary hepatic tuberculoma mimicking hepatocellular carcinoma in an immunocompetent host. *Med Gen Med.* 2006; 8:11.