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Amoebic Liver Abscess in a Young Adult: A Case Report

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Abstract **Case Report**

Background: Amebic liver abscess (ALA) is the most common extraintestinal manifestation of amebiasis. It often presents with nonspecific symptoms and can mimic other hepatic lesions, including malignancies. Imaging plays a crucial role in diagnosis, but confirmation relies on clinical and therapeutic response. ***Case Presentation:*** We report the case of a 37-year-old male with no known medical history, who presented with fever and right upper quadrant pain. Three weeks prior, he had experienced an episode of gastroenteritis. Abdominal ultrasound revealed a poorly defined hypoechoic lesion, and contrast-enhanced CT showed a hypodense, lobulated hepatic mass with peripheral enhancement and central necrosis, raising suspicion for an amebic liver abscess (ALA) but not excluding malignancy. The patient was started on metronidazole, leading to rapid clinical and radiological improvement, confirming the diagnosis. ***Conclusion:*** This case highlights the importance of differentiating ALA from hepatic tumors using imaging features and therapeutic response. Early diagnosis and prompt treatment with metronidazole are essential to prevent complications.

Keywords: Amebic liver abscess (ALA), Hepatic mass, Differential diagnosis, Metronidazole, Imaging (ultrasound, CT).

INTRODUCTION

Amebic liver abscess (ALA) is a serious extraintestinal manifestation of *Entamoeba histolytica* infection, with a higher prevalence in endemic regions such as South Asia, Africa, and Latin America [1,2]. Clinical presentation is often nonspecific, with fever and right upper quadrant pain being the most common symptoms [3,4]. Imaging findings can be variable, sometimes mimicking malignant tumors or pyogenic abscesses, making early and accurate diagnosis essential [5].

We report the case of a 37-year-old male with no prior medical history, who presented with a large hepatic lesion that initially raised suspicion of malignancy but was later confirmed as an amebic liver abscess following treatment with metronidazole.

CASE PRESENTATION

Patient History and Clinical Findings

A 37-year-old male with no significant past medical history presented to the emergency department with a 5-day history of right upper quadrant pain and fever. He denied jaundice, vomiting, weight loss, or history of alcohol consumption. Three weeks before, he had an episode of gastroenteritis, which resolved spontaneously.

On physical examination, the patient was febrile (38.5°C) and had tenderness in the right hypochondrium. There was no hepatomegaly, jaundice, or ascites. Laboratory findings showed:

- Elevated inflammatory markers (CRP: 80 mg/L, WBC: 14,000/mm³)
- Normal liver function tests (bilirubin, AST, ALT, ALP)
- Negative blood cultures
- Serology for *Entamoeba histolytica* was positive

Imaging Findings

Abdominal Ultrasound:

- A poorly defined, heterogeneous hypoechoic lesion in the right hepatic lobe, suggestive of an abscess.

Contrast-Enhanced CT Scan:

- Normal-sized liver

- A hypodense lesion with ill-defined margins in segments VII and VIII
- Heterogeneous peripheral enhancement with central necrosis, giving a lobulated appearance
- Lesion size: 9.5 ×7.5 × 9.5 cm (AP × T × H)
- The primary diagnosis was an amebic liver abscess, but malignancy, particularly a cholangiocarcinoma, remained a differential diagnosis due to the mass-like appearance

Figure 1: Abdominal CT scan (non-contrast) in sagittal view showing a heterogeneous hypodense lesion in hepatic segments VII and VIII

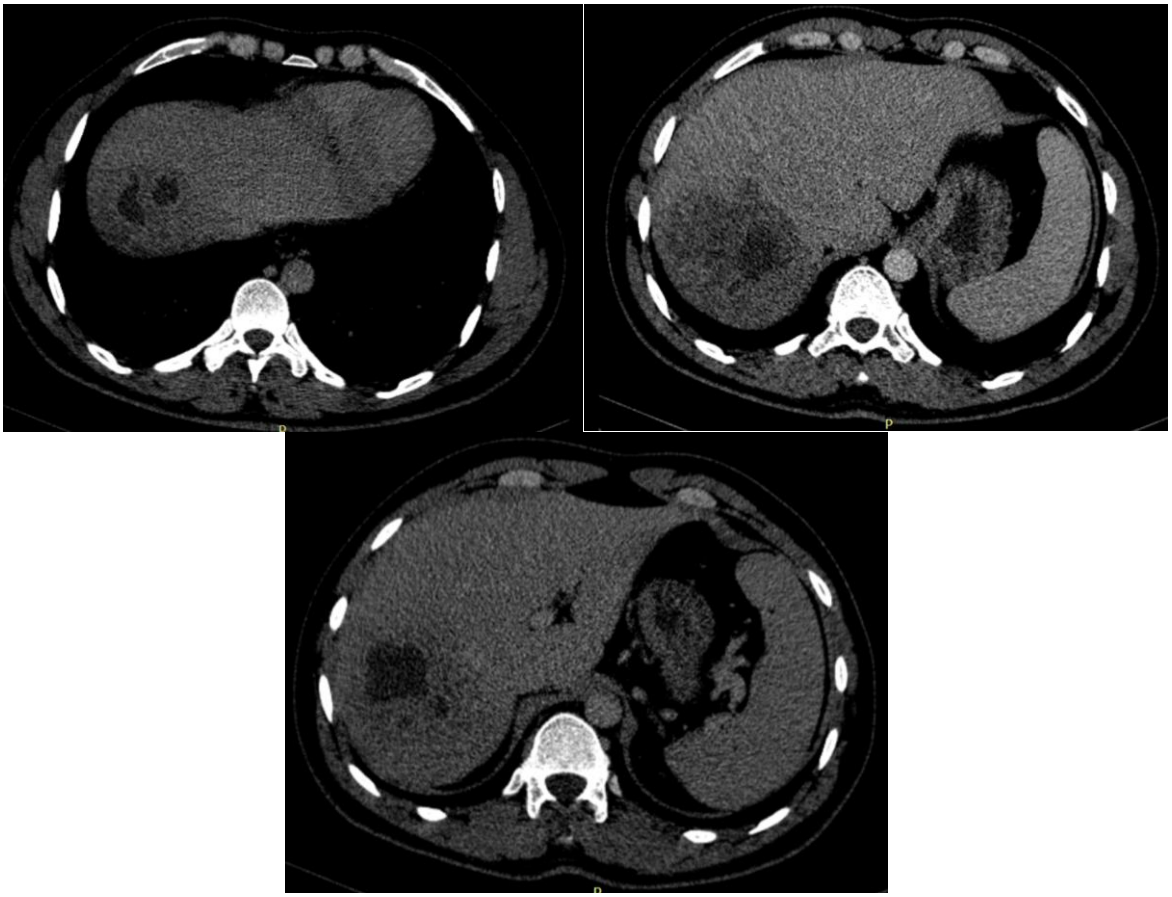

Figure 2: Contrast-enhanced abdominal CT scan in axial slices from top to bottom showing an amebic liver abscess with heterogeneous peripheral enhancement, delineating central necrotic areas

Management and Outcome

The patient was started on metronidazole 750 mg three times daily for 10 days. Within 48 hours, there was a marked improvement in fever and pain. Follow-up imaging after two weeks showed a significant reduction in abscess size, confirming the diagnosis of amebic liver abscess. The patient recovered completely without surgical intervention.

DISCUSSION

Amebic liver abscess is caused by *Entamoeba histolytica*, a protozoan that invades the intestinal mucosa and spreads to the liver via the portal circulation [6]. It is more common in men, particularly in endemic areas [7].

1. Differential Diagnosis: Tumor vs. Abscess

Hepatic abscesses can mimic tumors, making differentiation challenging.

- Amebic Abscesses: Typically present as solitary, hypodense, lobulated lesions with peripheral enhancement and central necrosis [8,9].
- Hepatic Malignancies (e.g., HCC, metastases) often have arterial enhancement and progressive washout, which was absent in our case [10].

Thus, imaging, clinical history (recent gastroenteritis), and response to metronidazole play a crucial role in diagnosis.

2. Treatment Considerations

The gold standard for ALA treatment is metronidazole, with clinical improvement within 72 hours. Percutaneous drainage is only indicated in large or refractory abscesses [11,12]. In contrast, pyogenic abscesses often require broad-spectrum antibiotics + drainage [13].

3. Complications and Prognosis

Untreated ALAs can lead to rupture (peritoneal or pleural), sepsis, or secondary bacterial infection [14]. However, with early diagnosis and treatment, the prognosis is excellent [15].

CONCLUSION

This case highlights the diagnostic challenge of amebic liver abscesses, which can mimic hepatic tumors. Imaging characteristics, clinical history, and rapid response to metronidazole are key to diagnosis. Early treatment prevents complications and ensures a favorable prognosis.

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