

## EUS features of hepatic visceral larva migrans (with video)

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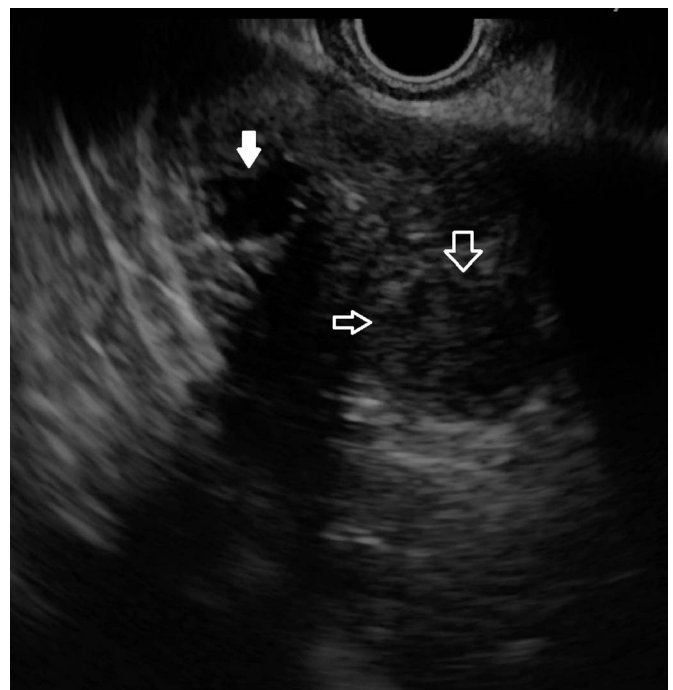
A 36-year-old man presented with right upper abdominal pain of 6 months in duration. It was associated with loss of weight and appetite. He had a poultry farm and had exposure to dogs. Investigations revealed eosinophilia with an absolute eosinophil count of 4390 cells/mm<sup>3</sup>. Contrast-enhanced computed tomographic scan of the abdomen revealed multiple ill-defined hypodense lesions in both the lobes of the liver [Figure 1]. Viral and tumor markers were negative. Ultrasound-guided fine needle aspiration from the liver lesion done elsewhere was inconclusive, and the patient was referred to us for EUS.



**Figure 1.** Computed tomography of the abdomen: multiple well-defined hypodense lesions in both the lobes of the liver (arrows).

Endoscopic ultrasound revealed multiple, ill-defined hypoechoic lesions of varying sizes in both lobes of the liver [Figure 2]. Few of the lesions were anechoic and had mixed echogenicity [Figure 2, 3]. On contrast EUS, these lesions were nonenhancing [Figure 4 and Video 1]. Multiple enhancing peripancreatic and periportal lymph nodes were also noted [Figure 5]. EUS-guided fine needle biopsy from the echogenic liver lesion showed hepatic infiltration by diffuse sheets of eosinophils [Figure 6], whereas the lymph node showed features of reactive lymphoid hyperplasia in the form of lymphohistiocytic aggregates along with the presence of eosinophils [Figure 7]. Periodic acid–Schiff stain did not highlight any parasite profile. IgG *Toxocara* serology was negative. The patient was treated with oral albendazole 400 mg twice daily for 2 weeks. The abdominal pain subsided, and the patient's weight and appetite improved. The peripheral eosinophilia normalized, and an ultrasound of the abdomen done 2 months later revealed resolution of liver lesions.

A majority of patients with hepatic visceral larva migrans are asymptomatic, and patients with high parasite burden can present with abdominal pain, fever, malaise, fatigue, and weight loss.<sup>[1–3]</sup>



**Figure 2.** EUS: multiple, ill-defined hypoechoic (open arrow) as well as anechoic lesion (bold arrow) in the liver.

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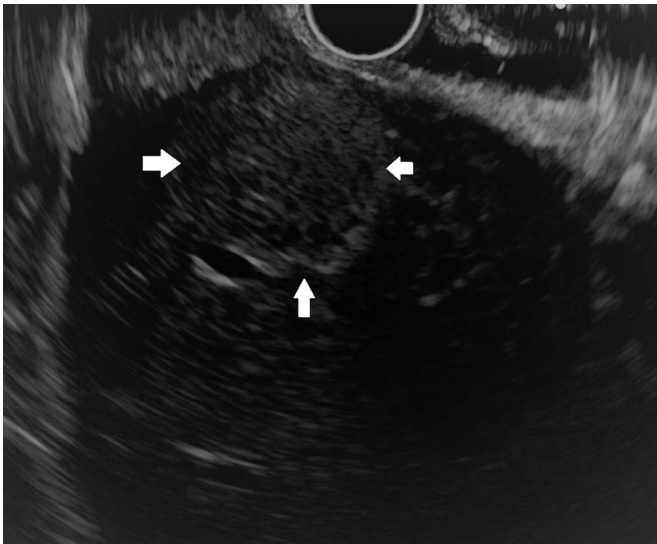
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Endoscopic Ultrasound (2023) 12:4

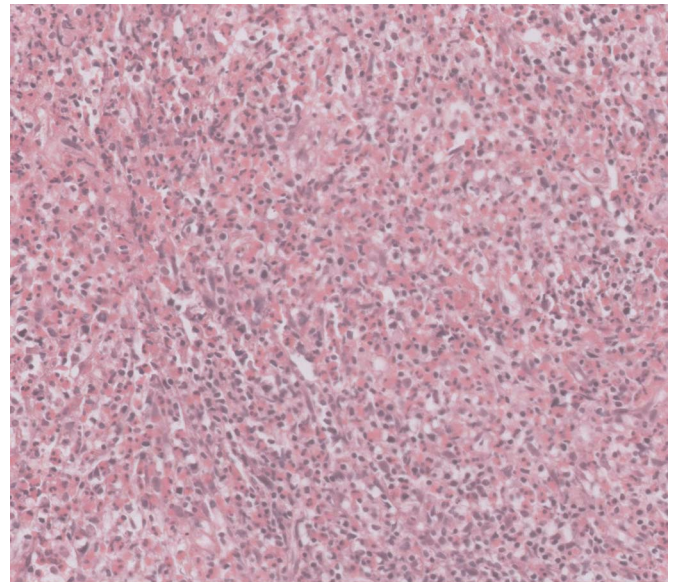
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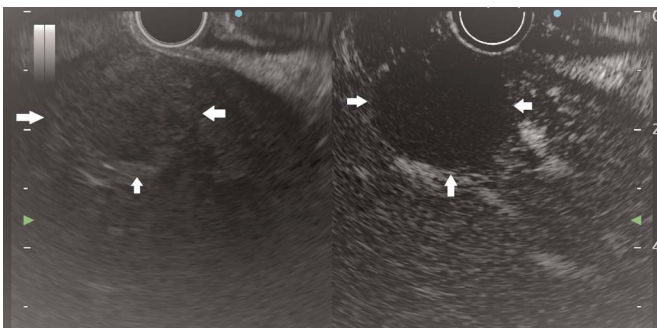
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**Figure 3.** EUS: liver lesion with mixed echogenicity (arrow).

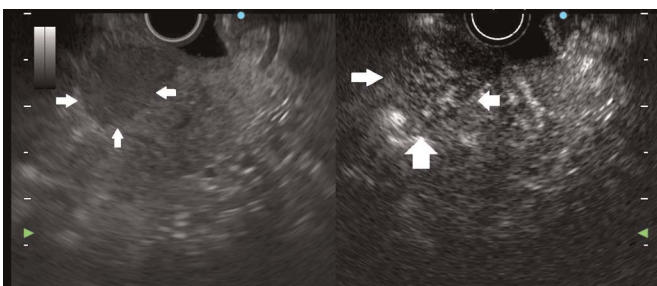


**Figure 6.** Fine needle biopsy from the liver showing diffuse sheets of eosinophils (hematoxylin and eosin, 50 µm).

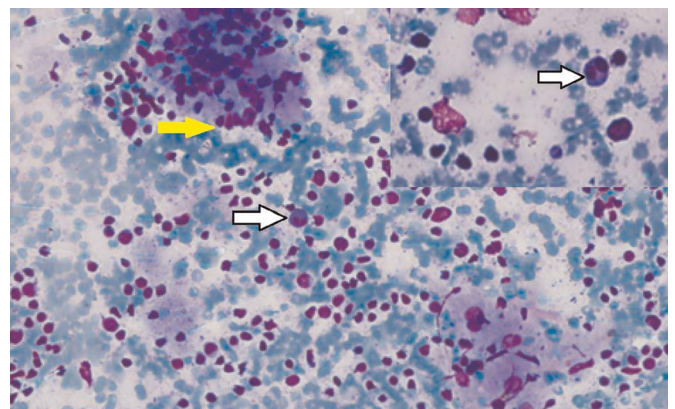


**Figure 4.** Contrast EUS: nonenhancing liver lesion (arrows).

Peripheral blood eosinophilia in patients with liver lesions is an important clue for hepatic visceral larva migrans. The hepatic disease is caused by the slow movement of the larva in the liver resulting in eosinophilic infiltration, granuloma, or abscess. The imaging appearance of hepatic lesions depends on the underlying pathology with eosinophilic infiltration and granulomas appearing hypoechoic or heteroechoic and abscesses having a cystic/complex cystic appearance. These lesions are usually small, multiple, and ill-defined with visibility in the portal venous phase and are usually hypoenhancing on contrast-enhanced imaging modalities.<sup>[2-4]</sup> Varying morphology of the hepatic lesions depicting varying stages of the disease can be better demonstrated by EUS. Moreover, contrast EUS can bring out hypoenhancing characteristics of these lesions.



**Figure 5.** Contrast EUS: diffusely enhancing peripancreatic lymph node (arrows).



**Figure 7.** Fine needle biopsy from the lymph node showing reactive lymphoid cells with lymphohistiocytic aggregates (yellow arrow) and occasional eosinophils (white arrow; MGG, original magnification 10×). Inset: high power better showing eosinophils (white arrow; MGG 100×). MGG: May-Grünwald-Giemsa stain.

### Video Legend

Contrast EUS: Non-enhancing liver lesion. Videos are only available at the official website of the journal ([www.eusjournal.com](http://www.eusjournal.com)).

### Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent. In the form, the patient's guardians have given their consent for his images and other clinical information to be reported in the journal. The patient's guardians understand that his name and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

### Conflicts of Interest

Surinder Singh Rana is an Editorial Board Member of the journal. This article was subject to the journal's standard procedures, with peer review handled independently of the editor and his research group.

### Author Contributions

Abhirup Chatterjee and Anurag Sachan did the collection and interpretation of data, and drafting of the manuscript; Suvradeep Mitra, Nalini Gupta, Pankaj Kumar, Vaneet Jearth, and Rajesh Gupta did the collection and interpretation of data. Surinder Singh Rana did the collection and interpretation of data, as well as drafting and critical evaluation of the manuscript for intellectual content.

### References

1. Ramachandran J, Chandramohan A, Gangadharan SK, Unnikrishnan LS, Priyambada L, Simon A. Visceral larva migrans presenting as multiple liver abscesses. *Trop Doct* 2013;43:154–157.
2. Rohilla S, Jain N, Yadav R, Dhoulakhandi DB. Hepatic visceral larva migrans. *Case Rep* 2013;2013:bcr2013009288.
3. Mok CH. Visceral larva migrans: a discussion based on review of the literature. *Clin Pediatr* 1968;7:565–573.
4. Lim JH. Toxocariasis of the liver: visceral larva migrans. *Abdom Imaging* 2008;33:151–156.