Journal of Gastrointestinal Surgery (2018) 22:550–552
https://doi.org/10.1007/s11605-018-3683-3

GI IMAGE

Hepatic Paragonimiasis Mimicking Hepatocellular Carcinoma

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Received: 1 January 2018 / Accepted: 8 January 2018 / Published online: 16 January 2018

Abstract

Paragonimiasis is a parasitic lung infection caused by lung flukes of the genus *Paragonimus*. Ectopic infection may occur but rarely involves the liver. Here, we report a case of hepatic paragonimiasis in a Chinese man who was initially suspected to have hepatocellular carcinoma. He had been previously diagnosed with chronic hepatitis B. No specific symptoms or abnormal blood test results were observed, except for a significant rise in serum alfa-fetoprotein. Magnetic resonance imaging revealed a 12-cm mass with inhomogeneous signal intensity at the left lobe of the liver. Laparoscopic left hemihepatectomy was performed. He was finally diagnosed as hepatic paragonimiasis upon pathological examination and antibody serology. The postoperative course was uneventful. He received a standard course of praziquantel and recovered well. Our case is unique in its tumor-like characteristic and protrudes the difficulty of differential diagnosis with both benignant and malignant hepatic diseases by imaging studies or non-specific symptoms. Hepatic paragonimiasis is unusual; however, it should be considered in the differential diagnosis of liver malignancy by clinicians.

Keywords Paragonimiasis · Liver · Hepatocellular carcinoma

Case Presentation

A 54-year-old Chinese man was evaluated for a 2-week history of epigastric discomfort without fever and cough. He had been previously diagnosed with chronic hepatitis B. Physical examination revealed hepatomegaly. Pertinent laboratory tests were within reference range except for a significant rise in serum AFP (253.6 ng/mL; normal, < 8.0 ng/mL). Chest x-ray was normal. Magnetic resonance (MR) imaging showed a 12-cm mass with inhomogeneous signal intensity at the left lobe of the liver (Fig. 1a). The lesion revealed mild enhancement on T1-weighted MR imaging (Fig. 1b) and restricted diffusion on diffusion-weighted MR imaging (Fig. 1c). Hepatocellular carcinoma (HCC) was suspected, and laparoscopic left hemihepatectomy was performed. Gross examination revealed a huge mass (12.4 cm × 9.8 cm) with a bosselated external surface (Fig. 2). Pathological examination showed oval-shaped eggs (Fig. 3a) and Charcot–Leyden crystals (Fig. 3b) instead of malignant cells. Histological findings revealed a track-like structure surrounded by infiltration of numerous eosinophils and barrier-like arrayed epithelioid cells (Fig. 3c). Parasite eggs were not detected in stool and sputum. However, serology was positive for *Paragonimus westermani* IgG antibody. Finally, he was diagnosed as hepatic paragonimiasis. He was given oral doses of praziquantel 25 mg/kg/day for 3 days and recovered well during the follow-up.

Discussion

Hepatic mass with hepatitis B virus infection and elevated serum AFP level is usually considered as HCC. Paragonimiasis is a parasitic lung infection caused by lung flukes of the genus *Paragonimus*, with most cases reported

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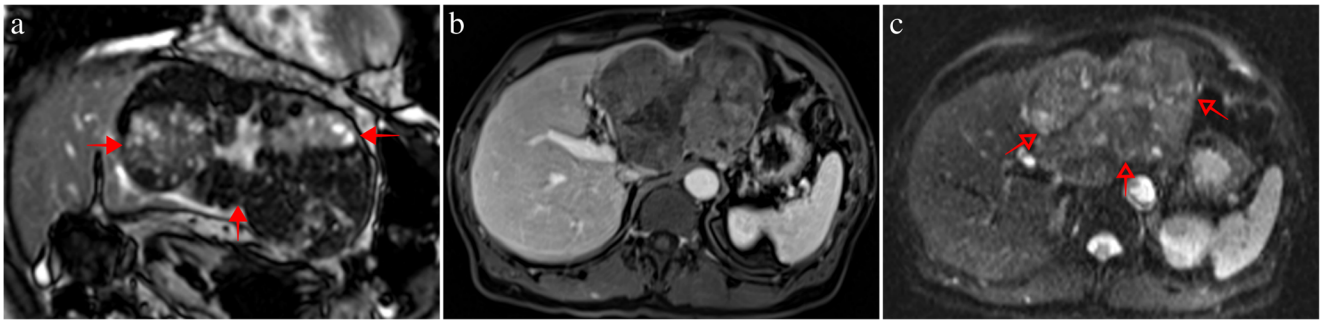

Fig. 1 Coronal T2-weighted MR imaging demonstrated a 12-cm mass with inhomogeneous signal intensity (**a**, arrows) at the left lobe of the liver. The lesion showed mild enhancement (**b**) on T1-weighted MR imaging and restricted diffusion (**c**, arrows) on diffusion-weighted MR imaging. *MR* magnetic resonance

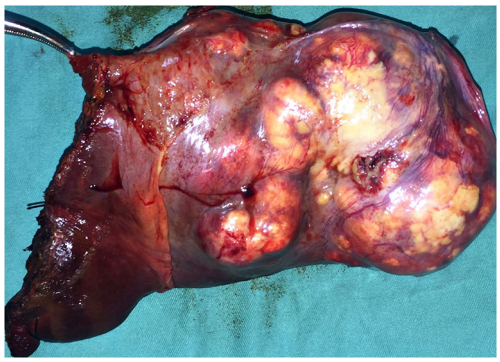

Fig. 2 Macroscopic findings showed a huge mass with a bosselated external surface

from East Asia and caused by *P. westermani* following consumption of raw or undercooked crustaceans.[1] Ectopic infection may occur and most commonly involves the brain and striated muscle. Involvement of the liver is rare. Herein, we presented a case of hepatic paragonimiasis in a Chinese man who was initially suspected to have HCC. Our case is unique in its tumor-like characteristic and protrudes the difficulty of differential diagnosis with both benignant and malignant hepatic diseases by imaging studies or non-specific symptoms. Eosinophilia is seen in hepatic paragonimiasis, but it disappears as the disease turns into its chronic stage.[2] In the reported case, peripheral eosinophilia was not detected. Definitive diagnosis is based on the finding of parasitic eggs in the sputum or feces; however, they usually cannot be found and diagnosis can be made by histopathology and antibody serology. Drug therapy such as praziquantel is the first choice for hepatic paragonimiasis. In the presented case, we adopted liver resection followed by praziquantel because of the huge mass and suspected malignancy. Although hepatic paragonimiasis is unusual, it should be considered in the differential diagnosis of liver malignancy. The positive history of endemic areas for paragonimiasis or consuming raw freshwater crabs needs to be noted by both surgeon and physician.

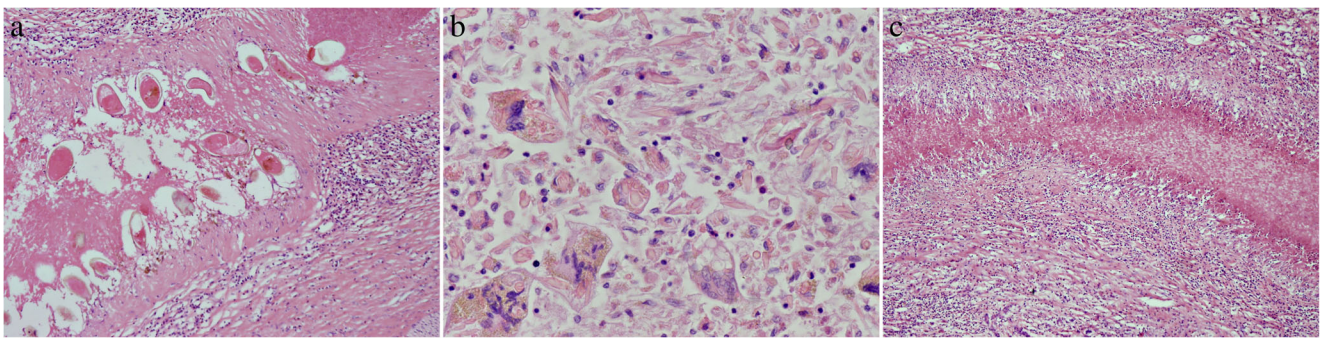

Fig. 3 Pathological findings revealed oval-shaped eggs (**a**) (HE, ×100) and Charcot–Leyden crystals (**b**) (HE, ×400). Histological examination showed a tortuous tract with coagulative necrosis in the center and numerous eosinophils with barrier-like arrayed epithelioid cells in the periphery (**c**) (HE, ×100). *HE* hematoxylin and eosin

Authors' Contributions All four listed authors contributed to the conception, analysis, and drafting of this manuscript.

Compliance with Ethical Standards

Ethical Approval The presented case was approved by the Human Rights Committee of the West China Hospital of Sichuan University.

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