Case Reports

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A case of hepatic paragonimiasis was misdiagnosed as hepatocellular carcinoma with rupture and haemorrhage

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Abstract

Paragonimiasis is a disease caused by parasitic infections that mainly involve the lungs. However, it can also produce ectopic infections, such as when the parasites invade the liver, brain and subcutaneous tissue, which then cause different symptoms. This current case report describes a 55-year-old male patient with hepatic paragonimiasis that was misdiagnosed as liver cancer with rupture and haemorrhage. The initial computed tomography findings suggested ruptured liver cancer. The patient underwent laparoscopic right hemihepatectomy. Postoperative pathological analysis resulted in a diagnosis of hepatic paragonimiasis. The patient recovered well postoperatively and was treated with 25 mg/kg praziquantel orally three times a day for 3 days after discharge with good efficacy. In this present case, the rupture and haemorrhage of the liver mass made it difficult for the treating physicians to consider hepatic paragonimiasis, which lead to the initial misdiagnosis of this patient. Although paragonimiasis is very rare, medical staff should be vigilant and have a comprehensive understanding of the different diseases that can cause liver masses so that misdiagnosis can be avoided.

Keywords

Paragonimiasis, liver, hepatocellular carcinoma, liver mass rupture, liver mass haemorrhage

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Introduction

Paragonimiasis, particularly hepatic paragonimiasis, is a type of zoonotic parasitic disease rarely encountered in clinical practice.[1] China, located in Southeast Asia, has a high incidence of paragonimiasis,[2] but Chinese physicians still lack sufficient vigilance against this disease. In addition, the clinical presentation and examination results of hepatic paragonimiasis are atypical,[2] leading to frequent misdiagnosis. This case report describes a patient with hepatic paragonimiasis that was misdiagnosed as hepatocellular carcinoma complicated with rupture and haemorrhage. Hepatic paragonimiasis is occasionally reported, but the presence of a similar eosinophilic hepatic abscess rupture is rare.

Case report

A 55-year-old male patient was admitted to the Department of Hepatobiliary Surgery, The Second Affiliated Hospital of Kunming Medical College, Kunming, Yunnan Province, China on 14 November 2019 presenting with right upper quadrant distending pain for the previous 15 days. Fifteen days before admission, the patient had developed a sudden pain in right upper quadrant and felt discomfort while working in the field. The pain was persistent, but no other symptoms such as fever, acid reflux or diarrhoea were found. After admission, relevant examinations were completed. The eosinophil count was significantly increased (2.68×10^9/l; 0.02×10^9/l < normal < 0.52×10^9/l), while other laboratory tests showed no obvious abnormalities. His computed tomography (CT) findings presented as a multiple patchy space occupying the right lobe of the liver and local effusion under the right capsule of the liver (Figure 1). Following consideration of the patient's imaging findings and medical history, it was thought that the patient might have hepatocellular carcinoma with rupture and haemorrhage. The patient underwent right hemihepatectomy under laparoscopy + cholecystectomy + regional lymph node dissection. Intraoperatively, extensive adhesions were found around the right liver and rupture of the right hepatophrenic plain was observed. The postoperative liver specimen was dissected from multiple sides and a haemorrhagic area of $10 \times 10 \times 2$ cm was located below the liver capsule; and a 5×3.2 cm grey mass with soft section surface was observed below the haemorrhagic area (Figure 2). The pathological diagnosis of the postoperative liver specimen was hepatic paragonimiasis (Figure 2). In the following days, the patient

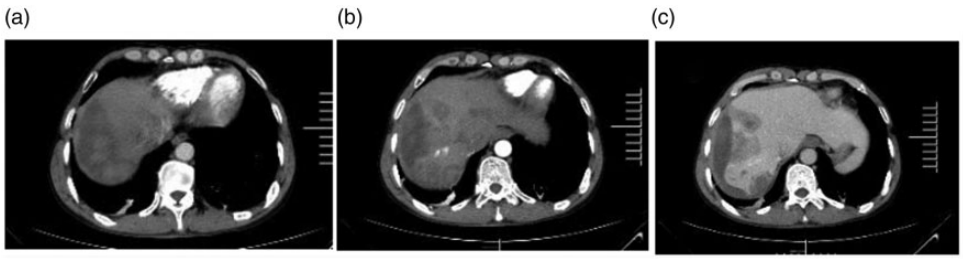

Figure 1. Computed tomography scans of the liver of a 55-year-old male patient that presented with right upper quadrant distending pain for the previous 15 days prior to admission: (a) localized fluid accumulation under the right hepatic capsule was observed, with uneven density, patchy slightly high-density shadow and no enhancement; (b) arterial phase imaging showing multiple patchy low-density lesions in the right lobe of the liver and inhomogeneous enhancement in the arterial phase; (c) delayed phase imaging showed low density shadow.

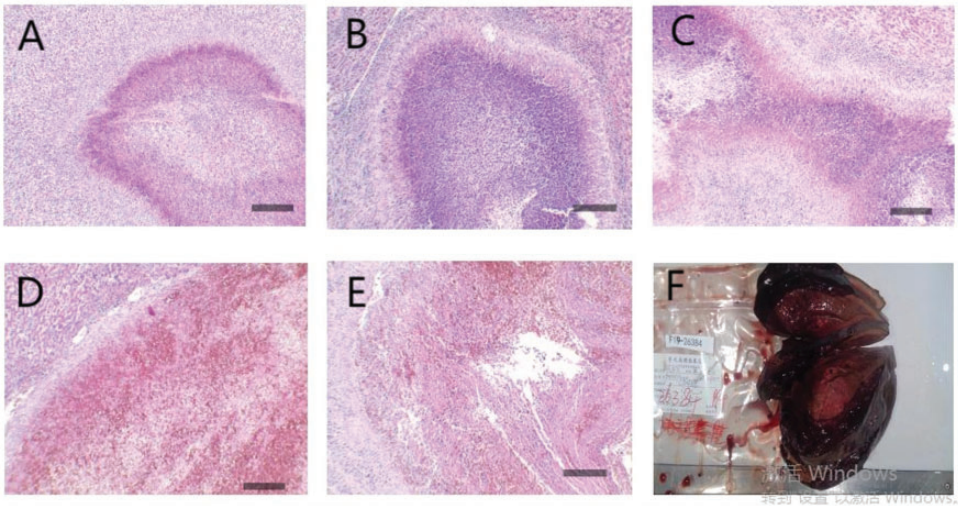

Figure 2. Representative light photomicrographs of tissue sections the postoperative liver biopsy specimen a 55-year-old male patient that presented with right upper quadrant distending pain for the previous 15 days prior to admission. The tissue sections show a large number of eosinophilic infiltrates in the liver tissue, forming extensive eosinophilic liver abscesses that communicate with each other through sinus passages, which are formed when flukes travel through the liver tissue (a – e; haematoxylin and eosin; a – c scale bar 400 μm; d and e scale bar 100 μm). A gross macroscopic image of the liver biopsy specimen showing a capsular haematoma that is visible to the naked eye. The haematoma contains a pale white mass with variously sized sinus tracts (f). The colour version of this figure is available at: http://imr.sagepub.com.

recovered well without complications. He was treated with 25 mg/kg praziquantel orally three times a day for 3 days after discharge with good efficacy. The patient provided written informed consent for publication of their data in this case report.

Discussion

Paragonimiasis is a zoonotic disease caused by flukes belonging to the genus Paragonimus.[3] Humans get infected through the ingestion of raw, pickled or undercooked freshwater crustaceans (second intermediate hosts) or consuming the raw meat of wild boar or deer (paratenic hosts).[3] Infections are often concentrated where dietary habits allow transmission of the parasites.[3]Although the patient denied having eaten any of the foods mentioned above, his years of living in the mountains and working in the fields were also high risk factors for infection. The patient's eosinophil count was significantly increased on admission, but did not attract much attention at that time because he had no specific clinical symptoms and his imaging findings were extremely consistent with the signs of liver cancer. With regard to the CT imaging findings, a previous study proposed that the relationship between the mass and liver capsule, the CT value difference and whether there is a 'tunnel sign' in multidetector CT manifestations are helpful to distinguish hepatocellular carcinoma from hepatic paragonimiasis.[4] The patient's CT imaging findings met some of the above features, however the patient was still misdiagnosed based on the CT findings because of two reasons: (i) the incomplete consideration of parasitic disease by the imaging physicians; and (ii) there have been very few cases of rupture and haemorrhage

in the mass caused by hepatic paragonimiasis reported in the literature.[5] This case demonstrates that there are difficulties in the differential diagnosis of liver paragonimiasis based on CT imaging and the gold standard for a final diagnosis remains pathology. In terms of treatment, oral praziquantel is currently considered to be an effective drug treatment, especially for patients with minor liver lesions. However, if the standard course of praziquantel does not work in some cases, liver surgery is recommended. Therefore, liver resection may be a good choice for hepatic paragonimiasis in some cases, especially for patients with a large mass in the liver, ambiguous preoperative diagnosis or ineffective drug treatment.[6] This current patient had multiple eosinophilic abscesses in the right liver that had ruptured and haemorrhaged, so he had indications for surgical resection. Therefore, despite the existence of the CT misdiagnosis, there was no obvious error in the general direction of his treatment.

In conclusion, hepatic paragonimiasis is easily misdiagnosed because of its low incidence coupled with a lack of specific clinical manifestations and a lack of relevant knowledge of the clinical and imaging physicians. It is particularly difficult to distinguish it from liver cancer, bacterial liver abscess and other liver diseases. Therefore, the understanding of this liver disease must be increased, especially when eosinophilic granulocyte elevation occurs in patients with liver masses. In this clinical situation, the possibility of hepatopulmonary paragonimiasis should be considered. In addition, the imaging findings of patients should be closely observed so that the differences between the imaging findings of paragonimiasis and those of other liver space-occupying diseases can be distinguished. Taking a liver biopsy for pathology remains the best option when a definite diagnosis is really difficult to make based on imaging alone.

Declaration of conflicting interest

The authors declare that there are no conflicts of interest.

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