Primary hepatic peripheral T-cell lymphoma in a patient with chronic hepatitis B infection

We report a case of primary hepatic peripheral T-cell lymphoma in a patient with hepatitis B virus–related cirrhosis. This patient presented with a solitary hepatic lesion with computed tomography and magnetic resonance imaging features that did not resemble hepatocellular carcinoma. Subsequent biopsy of the lesion revealed that it was a peripheral T-cell lymphoma. The patient was successfully treated with multi-agent chemotherapy followed by radiofrequency ablation. Although hepatocellular carcinoma is the most frequently encountered primary hepatic tumour in patients with hepatitis B virus–related cirrhosis, primary hepatic lymphoma should also be borne in mind. Nevertheless, primary hepatic lymphoma is a rare entity, and has no proven association with chronic hepatitis B infection.

Case report

A 32-year-old Chinese man had been receiving lamivudine for treatment of chronic e antigen–negative hepatitis B at United Christian Hospital since May 2001. Before commencing treatment with lamivudine, his serum alanine aminotransferase (ALT) was 324 IU/L (reference level, <41 IU/L), HBV DNA was 1.9 x 10^8 copies/mL, and a liver biopsy showed moderate hepatitic activity with diffuse large B-cell lymphoma being the most frequently reported histological subtype. Primary hepatic lymphoma arising from a T-cell lineage is less common, and described subtypes include peripheral T-cell lymphoma, anaplastic T-cell lymphoma, and hepatosplenic T-cell lymphoma. To our knowledge, only 14 cases of localised primary hepatic peripheral T-cell lymphoma have been described in the literature. In this article, we describe a case of primary hepatic peripheral T-cell lymphoma in a patient with pre-existing hepatitis B virus (HBV)–related cirrhosis.

Introduction

Although secondary hepatic involvement is commonly seen in the late stages of non-Hodgkin's lymphoma, non-Hodgkin's lymphoma arising in the liver is rare. Primary hepatic lymphoma constitutes about 0.4% of cases of extranodal non-Hodgkin's lymphoma, and only about 0.016% of all cases of non-Hodgkin's lymphoma. The majority of cases of primary hepatic lymphoma originate from a B-cell lineage, with diffuse large B-cell lymphoma being the most frequently reported histological subtype. Primary hepatic lymphoma arising from a T-cell lineage is less common, and described subtypes include peripheral T-cell lymphoma, anaplastic T-cell lymphoma, and hepatosplenic T-cell lymphoma. To our knowledge, only 14 cases of localised primary hepatic peripheral T-cell lymphoma have been described in the literature. In this article, we describe a case of primary hepatic peripheral T-cell lymphoma in a patient with chronic hepatitis B virus (HBV)–related cirrhosis.

Key words
Carcinoma, hepatocellular; Hepatitis B; Liver cirrhosis; Lymphoma

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United Christian Hospital, Kwun Tong, Hong Kong:
Department of Medicine and Geriatrics
VKS Leung, FHKAM (Medicine)
SY Lin, FHKAM (Medicine)
TN Chau, FHKAM (Medicine)
Department of Radiology
TKL Loke, FHKAM (Radiology)
Department of Pathology
CY Leung, FHKAM (Pathology)
Department of Surgery
TP Fung, FHKAM (Surgery)
SH Lam, FHKAM (Surgery)

Correspondence to: Dr VKS Leung
E-mail: vinju@netvigator.com
cell lymphoma. A biopsy of the non-tumour liver parenchyma demonstrated cirrhosis. Staging CT scans of the thorax, abdomen and pelvis and bone marrow biopsy were negative. Serological tests for hepatitis C virus (HCV) and human immunodeficiency virus were negative. The patient was then treated with eight courses of combination chemotherapy, which consisted of cyclophosphamide, epirubicin, vincristine, and oral prednisolone. Two months after he completed chemotherapy, MRI of his liver showed a residual 0.8-cm non-enhancing lesion in the right lobe, which was hypointense on T1-weighted imaging and hyperintense on T2-weighted imaging. As the lesion was considered too small for obtaining adequate biopsy material for confidently excluding residual malignancy, percutaneous USG-guided radiofrequency ablation was performed. The patient remained asymptomatic 6 months afterwards, and an abdominal MRI found no evidence of lymphoma recurrence.

Discussion

Hepatocellular carcinoma is the most common primary hepatic tumour, and patients with chronic HBV infection or cirrhosis are at risk of developing this malignancy. Hepatic masses larger than 1 to 2 cm in diameter in a patient with a cirrhotic liver can be treated as hepatocellular carcinoma without histological proof, if the lesions show the typical vascular pattern (arterial hypervascularity and washing out in the early or delayed venous phase) on CT scan and/or MRI. This case illustrates that biopsy is necessary for lesions showing an atypical vascular pattern on dynamic imaging.

The aetiology of primary hepatic lymphoma is unknown although viruses are thought to have an important role in the pathogenesis of this disorder. The Epstein-Barr virus (EBV) is particularly important, especially in the presence of immunosuppression when reactivation of EBV may trigger the onset of primary hepatic lymphoma. A number of reports have described an increased incidence of primary hepatic lymphoma in patients with HBV or HCV infection, although the precise relationship between chronic viral hepatitis and primary hepatic lymphoma remains obscure. It has been postulated that chronic antigenic stimulation by HBV may play a role in the development of primary hepatic lymphoma. Aozasa et al reported a 20% prevalence of hepatitis B surface antigen (HBsAg) positivity in a series of 69 patients with primary hepatic lymphoma, 52 of whom were from western countries and 17 from Japan. However, Lei et al reported a series of cases of primary hepatic lymphoma in Hong Kong Chinese in which only one of seven patients was positive for HBsAg. The authors argued against a pathogenetic role for HBV in the development of primary hepatic lymphoma.
due to the disproportionately low number of cases of primary hepatic lymphoma in Hong Kong, a known endemic area for chronic HBV infection. Thus far, there has not been sufficient evidence to support HBV as an important aetiological factor in primary hepatic lymphoma.

The most common presenting symptom in primary hepatic lymphoma is abdominal pain, occurring in over 40% of patients. Other presenting symptoms include weight loss, fever, anorexia, nausea, night sweats, and vomiting. Our patient was asymptomatic and was diagnosed incidentally, as is the case in about 9% of patients with primary hepatic lymphoma.

Primary hepatic lymphoma may appear as solitary, multifocal, or diffusely infiltrative lesions. Their appearances on CT scans and MRI are non-specific, and biopsy is needed for definitive diagnosis. Primary hepatic lymphoma lesions are positive on fluorine-18 fluorodeoxyglucose-positron emission tomography (FDG-PET), and FDG-PET may be useful for detecting extrahepatic involvement and evaluating treatment responses.

References

9. De Renzo A, Perna F, Persico M, Mainolfi S, Pace L. Radiofrequency ablation may have a role, particularly for small (<3 cm) solitary tumours confined to the liver. Primary hepatic lymphoma has a relatively favourable prognosis when detected early. Lymphomas occurring in patients with advanced disease, with unfavourable histological subtypes, and co-existing diseases, especially cirrhosis and acquired immunodeficiency syndrome, are associated with a much poorer prognosis. It has been reported that patients with primary hepatic peripheral T-cell lymphoma have a poorer prognosis, although cases of complete response to chemotherapy have been documented.

In summary, primary hepatic lymphoma, though a rare disease, should be considered in patients presenting with focal hepatic lesions. Biopsy is necessary for lesions showing atypical radiological features.