


# Primary hepatic follicular lymphoma 5 years post sustained virological response from hepatitis C viral infection

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## CLINICAL QUESTION

A 72-year-old man who was treated with a combination of simeprevir with peginterferon and ribavirin for hepatitis C virus (HCV) infection (genotype 1b) 5 years ago and has been treated as sustained virological response, was found to have a 2.6 cm tumourous lesion in the medial segment of the liver. He underwent a left hepatic lobectomy with a diagnosis of suspected hepatocellular carcinoma. The patient remained stable in follow-up CT every 3 months for more than 14 months.

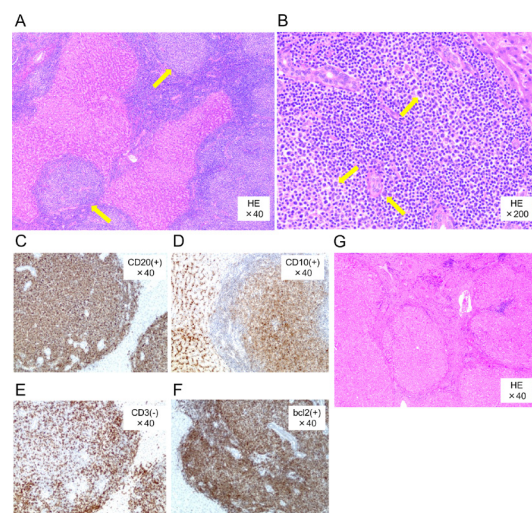
## DIFFERENTIAL DIAGNOSES

- Hepatocellular carcinoma.
- Mantle cell lymphoma.
- Mucosa-associated lymphoid tissue lymphoma.
- Primary diffuse large B-cell lymphoma.
- Primary hepatic follicular lymphoma.

## DISCUSSION

Primary hepatic lymphoma (PHL) is a rare disease, representing 0.4% of extranodal non-Hodgkin's

lymphoma.<sup>1</sup> The most common histological type is reported to be diffuse large B-cell lymphoma. Primary hepatic follicular lymphoma is extremely rare and accounts for only 1%–4.4% of PHLs.<sup>1</sup> HCV-infected patients are prone to develop bone marrow or various other tissue infiltrates with monoclonal B-cells, monoclonal B lymphocytosis or different types of B-cell non-Hodgkin's lymphoma.<sup>1 2</sup> Also, antiviral therapy reduces the risk of lymphoma in patients with chronic HCV infection.<sup>3</sup> To the best of our knowledge, this is the first reported case of the appearance of primary hepatic follicular lymphoma, with the risk of lymphoma being reduced after the virus has disappeared. Histopathological diagnosis showed small lymphocytes and centroblasts were mixed, demonstrating a tissue image proliferating in a follicular shape (figure 1). Immunohistochemical studies showed a marked predominance of atypical CD20-positive B-cells consistent with B-cell lymphoma. The lesional cells were predominantly distributed within sinusoids with expansion and forming medium-sized atypical aggregates involving portal tracts, evidenced by intact bile ducts centred within the aggregates.<sup>4</sup> Small to medium-sized centrocytes form either distinct follicles or diffuse areas of



**Figure 1** Histopathological examination. (A) Follicles noted by H&E  $\times 40$  magnification (arrowhead). (B) Small lymphocytes and tumour cells such as centroblasts (arrowhead) were mixed (H&E;  $\times 200$ ). The tumour cells were positive for (C) CD20 (+) $\times 40$ ; (D) CD10 (+) $\times 40$ ; (E) CD3 (–) $\times 40$ ; (F) Bcl2 (+) $\times 40$ . (G) The pseudolobular formation surrounded by collagen fibres in the non-neoplastic liver (H&E;  $\times 40$ ).

## Take home messages

- ▶ Several studies have reported an increased prevalence of hepatitis C virus (HCV) among patients with primary hepatic lymphoma (PHL).
- ▶ The involvement of B-cell PHL in HCV-infected patients is currently considered to be independent of the HCV genotype.
- ▶ In a recent report, some patients with B-cell PHL and HCV infection experienced remission after treatment with interferon and direct acting antivirals.
- ▶ Considering this case, PHL should be considered to be important as a differential disease in the diagnosis of liver-occupying lesions complicated with HCV-related chronic liver disease even if prolonged sustained virological response is obtained.
- ▶ Immunostaining of the tumour cells of follicular lymphoma showed reactivity for CD10, CD20, Bcl-2 but not for CD3.



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lymphoma cells (with germinal centre differentiation (ie, CD10 and Bcl-6 but also Bcl-2)), which may efface the hepatic parenchyma. An important feature of follicular lymphoma is the presence of follicular meshworks.<sup>2</sup> Although surgical resection is the treatment of choice for hepatic lymphoma whenever possible, chemotherapy has also proven effective, especially for unresectable or recurrent cases.<sup>5</sup>

### CORRECT ANSWER

E. Primary hepatic follicular lymphoma.

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