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LETTER TO THE EDITOR

F-18 Fluorodeoxyglucose non-avid hepatosplenic T cell lymphoma: a diagnostic pitfall

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Dear Editor,

A 59-year-old man presented with a 9-month history of transfusion-dependent anaemia, hepatomegaly (2 cm) and splenomegaly (6 cm). F-18 fluorodeoxyglucose (FDG) positron emission tomography computed tomography (PET/CT) showed gross hepatosplenomegaly (Fig. 1a) that was eumetabolic (Fig. 1b), raising the possibility that the cause might be non-neoplastic. However, bone marrow examination showed a small population of suspicious T cells with no clear histopathological patterns. The T cell receptor (TCR) gamma gene was clonally rearranged on polymerase chain reaction, suggesting that the hepatosplenomegaly might be related to a clonal T cell neoplasm.

Splenectomy and liver biopsy were performed. Histologically, there was cord expansion and sinusoidal infiltration in the splenic red pulp by small atypical lymphoid cells (Fig. 1c). These neoplastic lymphoid cells were also found as small aggregates in the hepatic sinusoids (Fig. 1d). On immunophenotyping, the lymphoid cells were CD3+, CD4−, CD8−, TIA-1+, TCRβ− and TCRγ+ (Fig. 1e–h). The overall features were consistent with hepatosplenic T cell lymphoma (HSTCL) of the γδ subtype.

PET/CT is used extensively in the staging and post-treatment follow-up of Hodgkin's lymphoma, where it is considered a standard of care [1]. It is also regarded as highly sensitive in most aggressive and indolent B cell lymphomas [2]. FDG uptake is usually proportional to histopathological grading, being very avid in high-grade lymphomas that are metabolically active. Although this pattern is generally observed in B cell lymphomas, it is undefined if FDG uptake also parallels the clinical behaviour in T cell lymphomas. In fact, PET/CT has been reported to be negative in some T cell malignancies, notably T-large granular lymphocyte leukaemia and T-prolymphocytic leukaemia [3]. HSTCL is an aggressive lymphoma with a poor survival. It accounts for less than 1% of all lymphomas. Because HSTCL is rare, the application of PET/CT in its diagnosis and management has not been evaluated. FDG avidity had only been previously reported in a single case of HSTCL occurring after liver transplantation [4]. Our case apparently had arisen de novo. The lymphoma was entirely FDG non-avid, constituting a diagnostic pitfall. Therefore, the role of PET/CT in the diagnosis and follow-up of T cell lymphomas may have to be carefully defined for each histopathological type [5].

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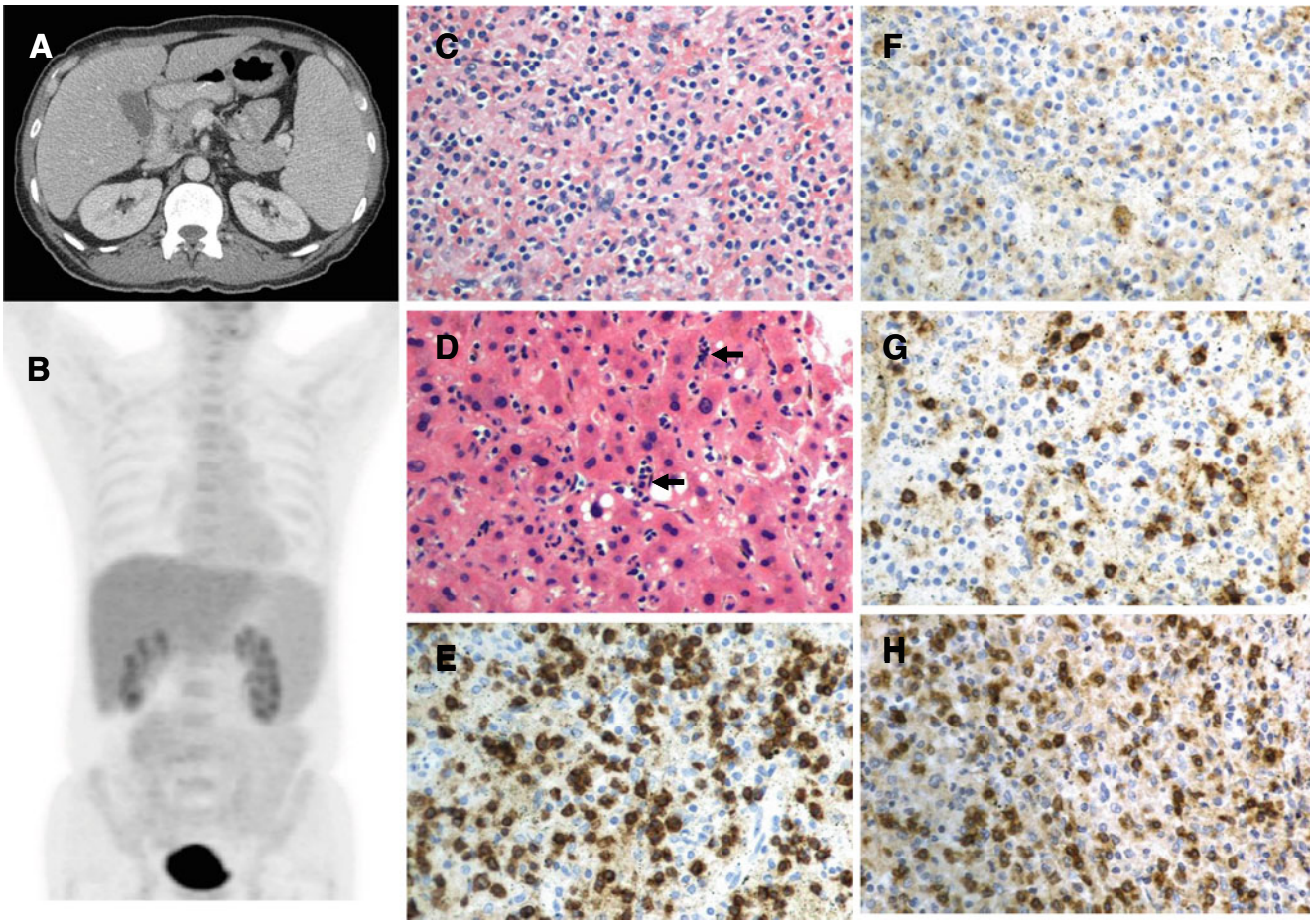

Fig. 1 A case of hepatosplenic T cell lymphoma with negative positron emission tomography. **a** Computed tomography of the abdomen, showing gross hepatosplenomegaly. **b** Positron emission tomography showing that the hepatosplenomegaly was eumetabolic. **c** The spleen showed red pulp infiltration by atypical lymphoid cells. **d** The liver showed infiltration of sinusoids (*arrows*) by atypical lymphoid cells. **e**–**h** Immunoperoxidase staining, showing that the lymphoma cells were positive for CD3 (**e**), negative for CD4 and CD8 (**f**, **g**), and positive for TCRγ (**h**)

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