Solitary splenic lymphoma detected with ^{18}F-FDG-PET/CT

To the Editor: Solitary splenic non-Hodgkin's lymphoma (SSNHL**)** is a rare primary neoplasm; with an incidence less than 1% [1-3]. Authors have stated that solitary splenic lymphoma shows diffuse red pulp infiltration and enlargement without mass formation [1]. It cannot be pointed out by plain computed tomography (CT) or magnetic resonance imaging (MRI), ultrasounography (US) or Gallium-67 citrate alone [1, 4-6]. There are few data available in the literature on fluorine-18-fluoro-2-deoxyglucose positron emission tomography/computed tomography (^{18}F-FDG-PET/CT) showing SSNHL [1, 6, 7]. It has been shown that ^{18}F-FDG PET/CT is superior to CT in the evaluation of SSNHL [1, 7]. Splenectomy is useful as a diagnostic or a therapeutic method but it is associated with high morbidity and mortality in patients with massive splenomegaly [3]. We present a case of SSNHL with no cytopenia and no adenopathy that was detected by ^{18}F-FDG-PET/CT.

A 64 years old male was admitted to Okmeydani Training and Research Hospital with left upper quadrant abdominal pain, fatigue and weight loss. The physical examination revealed a significant splenomegaly. He had hemoglobin 7.7g/dL, platelet count of 128x10^3/μL, white blood cell count normal, normal lactate dehydrogenase and absence iron stores. The cultures of feces, urine and blood were negative. The parasitologic tests were negative. Abdominal ultrasound showed massive splenomegaly (24x13cm). Computed tomography confirmed splenomegaly, without evidence of other lesions such as abdominal adenopathy. Bone marrow films showed hypercellularity with erythroid and megacaryocitic hyperplasia. The patient was administered 370MBq of ^{18}F-FDG via antecubital vein. Whole-body imaging was performed at approximately 60min after ^{18}F-FDG injection. Transaxial and coronal ^{18}F-FDG-PET/CT (Siemens Biograph 6, Chicago, USA) images revealed hyperplasia and an increased diffuse heterogeneous ^{18}F-FDG uptake in the spleen 2.5 times higher then in the liver (Fig. 1). There was no evidence of involvement of lymph nodes, bone marrow or any other organ. A diagnosis was primary SSNHL and the patient underwent splenectomy. Histopathologic verification showed diffuse large B cell lymphoma confined in the spleen (Fig. 2).

Others described the diagnosis of primary SSNHL in patients with splenomegaly, cytopenia of at least two hematologic cell lines, and the absence of peripheral adenopathy [8]. In our case there was sole splenomegaly with no cytopenia and no adenopathy. Some solitary lymphomas cannot be pointed out by plain CT scanning alone or US alone. Splenectomy combined with chemotherapy is considered the optimum treatment option for patients with primary SSNHL [9, 10].

Sarcoidosis, malaria, inflammatory or hematopoietic diseases, and Gaucher nodules show false positive scans on ^{18}F-FDG PET [11, 12].

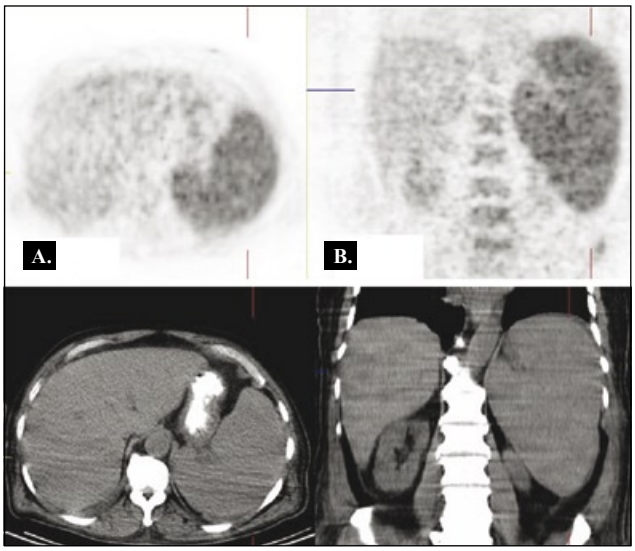

Figure 1. Transaxial (**A**) and coronal (**B**) FDG-PET/CT images revealed hyperplasia and an increased diffuse heterogeneous ^{18}F-FDG uptake in the spleen 2.5 times intense then the liver. There was no evidence of involvement of lymph nodes, bone marrow or any other organ.

In normal individuals, ^{18}F-FDG uptake in the spleen is less than that in the liver and does not change significantly with age. The splenic uptake greater than hepatic uptake is considered abnormal [13]. Others reported that ^{18}F-FDG-PET/CT had a very high sensitivity (92%-100%) for detecting splenic disease in lymphoma [12]. Recent cytokine administration also increases splenic uptake. Others suggested that ^{18}F-FDG PET should be immediately performed when splenic tumor is first detected, especially when malignant lymphoma is suspected. [14] Our case supports this suggestion .

In conclusion, our case, consistent with the literature, has shown that ^{18}F-FDG PET/CT scan is useful in diagnosing malignant splenic lesions.

All authors declare that they have no conflicts of interest

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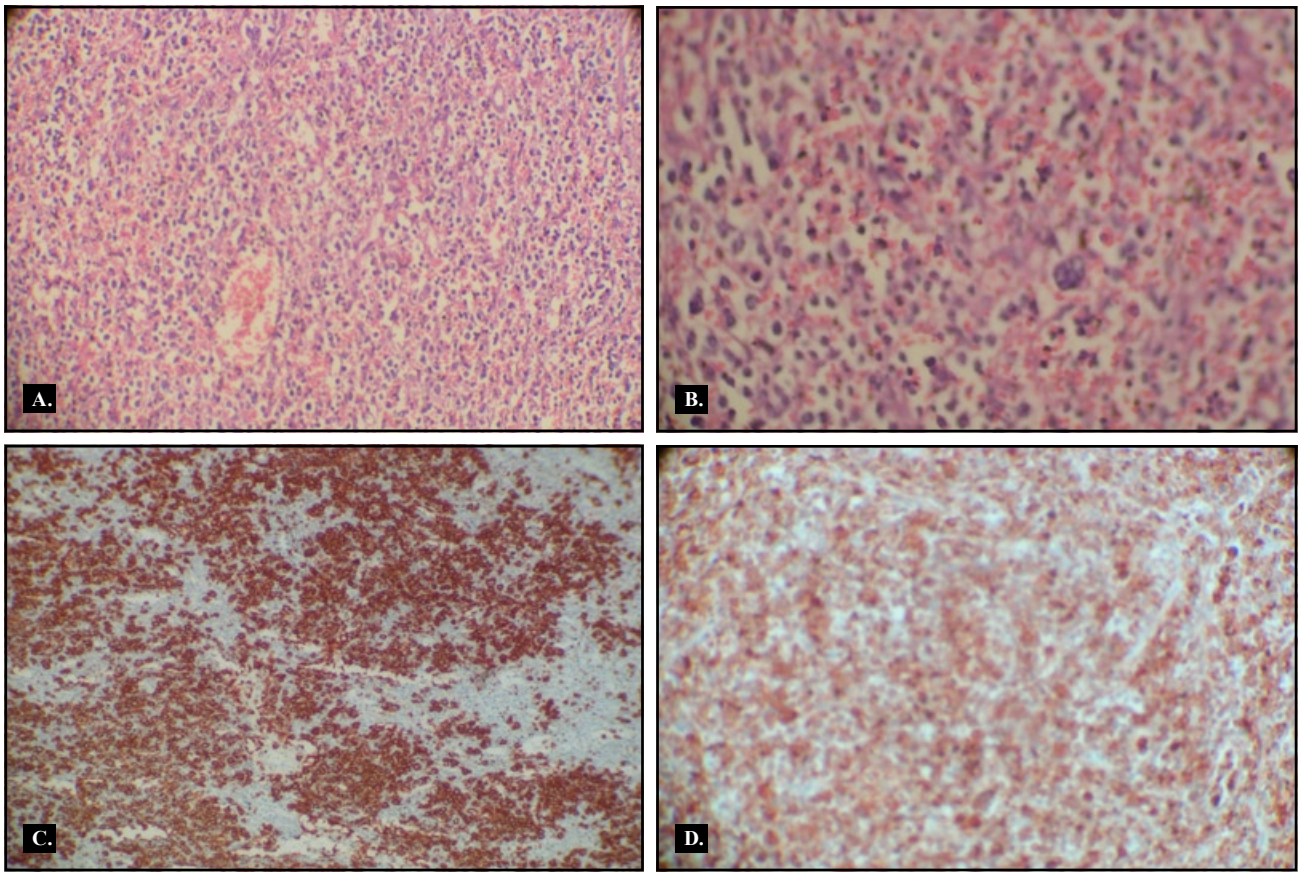

Figure 2. The microscopic findings of both hematoxylin and eosin staining (x100) (**A**) and immunohistochemical staining (x200) (**B**) show that large atypical lymphocytes, including irregular nuclei and several endoblasts, have proliferated diffusely with positive immunostaining for CD 20 (x200) (**C**). CD 3 staining revealed areas of Tcell histiocytes (x200) (**D**). Immunostaining suggested non-Hodgkin lymphoma, diffuse large B-cell origin.

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Hell J Nucl Med 2011:14(2): *Published on line: 16 June 2011*