

**Short Report***Open Access, Volume 2****Intravascular Dissemination of Large B Cell Lymphoma in the Lung Detected by 18F-FDG-PET/CT Scan: A Case Report*****Atena Aghaee\*<sup>1</sup>; Hadis Mohammadzadeh Kosari***Nuclear Medicine Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.***Abstract**

Here we describe a 33-year-old man diagnosed with non-Hodgkin lymphoma following resection of a mass in his left iliac bone. He was referred for FDG PET/CT scan in order to assess response to recent chemotherapy and had no symptoms. The scan showed diffusely increased FDG uptake throughout both lungs which was not compatible with any pathologic findings in dedicated CT slices. Bilateral diffuse lung uptake in FDG PET with no abnormality in CT slices, may be due to chemotherapy-induced pneumonitis, ARDS, or IVLBCL; and among these reasons the unique etiology in which the CT scan remains normal after several days is IVLBCL.

**Keywords:** Large B cell lymphoma; Intravascular; Lung; FDG.**Case report**

Here we describe a 33-year-old man diagnosed with non-Hodgkin lymphoma following resection of a mass in his left iliac bone in the absence of superficial lymphadenopathy and skin lesions and also no history of respiratory symptoms and/or fever. He underwent eight courses of chemotherapy thereafter and in order to assess response to treatment, he was referred to our Nuclear Medicine Center. Although the patient had no subjective symptoms such as dyspnea or cough, he was in a wheelchair due to suffering from a degree of early fatigue and weakness of lower extremity muscles.

6.38 mCi F-18 fluorodeoxyglucose (FDG) was administered intravenously and after 66 minutes, PET imaging was done following low-dose CT scanning.

The scan showed evidence of previous surgical manipulation and resection in the left iliac bone and sacroiliac region without hypermetabolism, suggesting a favorable response to treatment in these regions (Figure 1). Interestingly, diffuse increased FDG uptake in both lung fields (SUV max=2.37) was noticed, which was evident in both PET only and PET/CT images (Figure 2). Eventually, considering that the patient had no respiratory symptoms and/or parenchymal abnormality in the dedicated CT slices and in the lung HRCT performed during the treatment course, intravascular large B-cell lymphoma (IVLBCL) of the lung was suspected which was also compatible with the known aggressive behavior of his lymphoma.

<sup>18</sup>F-Fluorodeoxyglucose positron emission tomography/computed tomography (FDG PET/CT) is the current imaging modality of choice to assess treatment responses in lymphoma patients.

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Intravascular large B-cell lymphoma (IVLBCL or angiotrophic large cell lymphoma) of the lung is an extremely rare disease that is listed as a subtype of diffuse large B-cell lymphoma with an aggressive natural course [1-3].

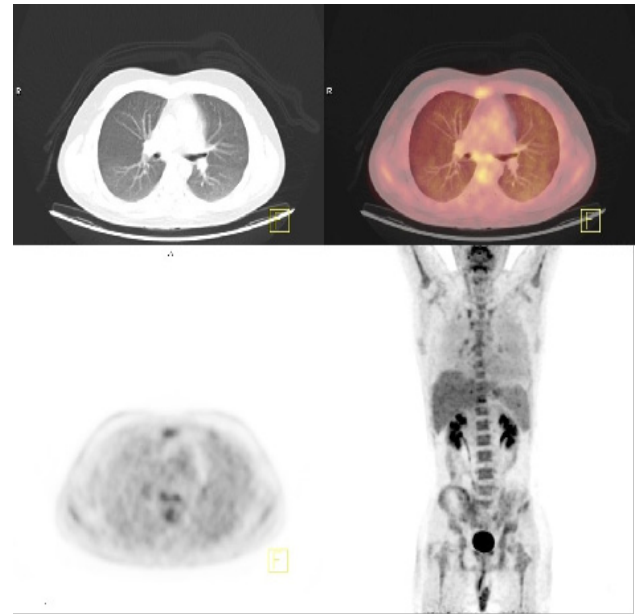
This uncommon form of B-cell lymphoma is characterized by the proliferation of malignant lymphoid cells in the lumens of small capillaries of various organs [1-3]. Peculiar characteristics of IVLBCL, including the absence of marked lymphadenopathy and the usually aggressive behavior, lead to delayed accurate diagnosis and serious complications. Hence, the IVLBCL prognosis is mainly poor [3].

IVLBCL is a systemic disease and generally presents in the skin and may involve the central nervous system [1]. However, it may rarely involve the lung as the primary source.

A chest x-ray may show diffuse interstitial or bilateral reticulo-nodular pattern or may be completely normal. FDG-PET/CT illustrate increased diffusely lung uptake, commonly without the pulmonary parenchymal abnormality on the CT component of the study. This scan pattern is characteristic and should raise the suspicion of intravascular lymphoma clinically [2].

### Conclusion

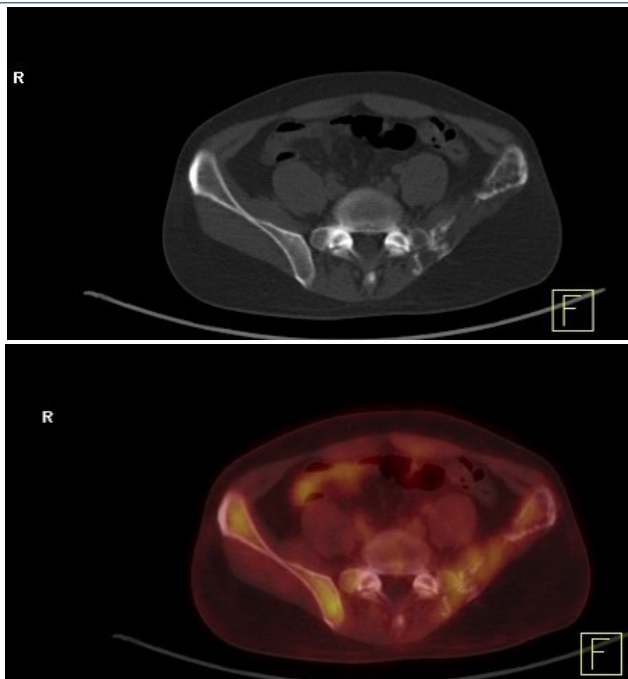
This case report illustrates the usefulness of 18F-FDG-PET scanning in management of patients with DLBCL, leading here to the early diagnosis of IVLCBL. Diffuse bilateral pulmonary FDG uptake with persistent normal lung CT scan is highly suspicious for IVLBCL. From our investigation of the literature, it seems that bilateral diffuse lung uptake in FDG PET with no abnormality in CT slices, may be due to chemotherapy-induced pneumonitis, ARDS, or IVLBCL [1]; and among these reasons the unique etiology in which the CT scan remains normal after several days is IVLBCL.



**Figure 2:** Diffuse and homogeneous lung uptake (SUV max=2.37), without CT structural abnormality on Maximum Intensity Projection (MIP) image and transaxial image of FDG-PET/CT.

### References

1. Wagner T, Brechemierb D, Dugerc E, Le Guellecd S, Juliana A, et al. Diffuse pulmonary uptake on FDG-PET with normal CT diagnosed as intravascular large B-cell lymphoma: A case report and a discussion of the causes of diffuse FDG uptake in the lungs. *Cancer Imaging*. 2012; 12: 7-12.
2. Yamashita H, Suzuki A, Takahashi Y, Kubota K, Kan T, et al. Intravascular large B-cell lymphoma with diffuse FDG uptake in the lung by 18FDG-PET/CT without chest CT findings. *Ann Nucl Med*. 2012; 26: 515–521.
3. Shimada K, Kinoshita T, Naoe T, Nakamura Sh . Presentation and management of intravascular large B-cell lymphoma . *Lancet Oncol*. 2009; 10: 895–902.



**Figure 1:** 18F-Fluorodeoxyglucose positron emission tomography/computed tomography transaxial images showed evidence of previous surgical manipulation and resection in the left iliac bone and left the sacroiliac region, without hypermetabolism.