# Bone scan revelation: rib lesion diagnosed as diffuse large B cell lymphoma

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## Abstract

Diffuse Large B-Cell Lymphoma (DLBCL), a highly aggressive tumour, is the most prevalent form of non-Hodgkin lymphoma (NHL), staged with 18F-flourodeoxyglucose positron emission tomography/computed tomography (18F FDG PET/CT) although conventional radiological imaging may be employed occasionally. DLBCL may present in an atypical manner, resulting in detection by alternate imaging modalities such a bone scan, which is usually not the first choice in the workup. We present an interesting case where a solitary osseous lesion was initially detected by bone scan with single photon emission computed tomography (SPECT-CT) leading to timely diagnosis and management of the patient.

**Keywords:** Diffuse Large B-Cell Lymphoma; Bone Scan; SPECT-CT; 18F FDG PET-CT
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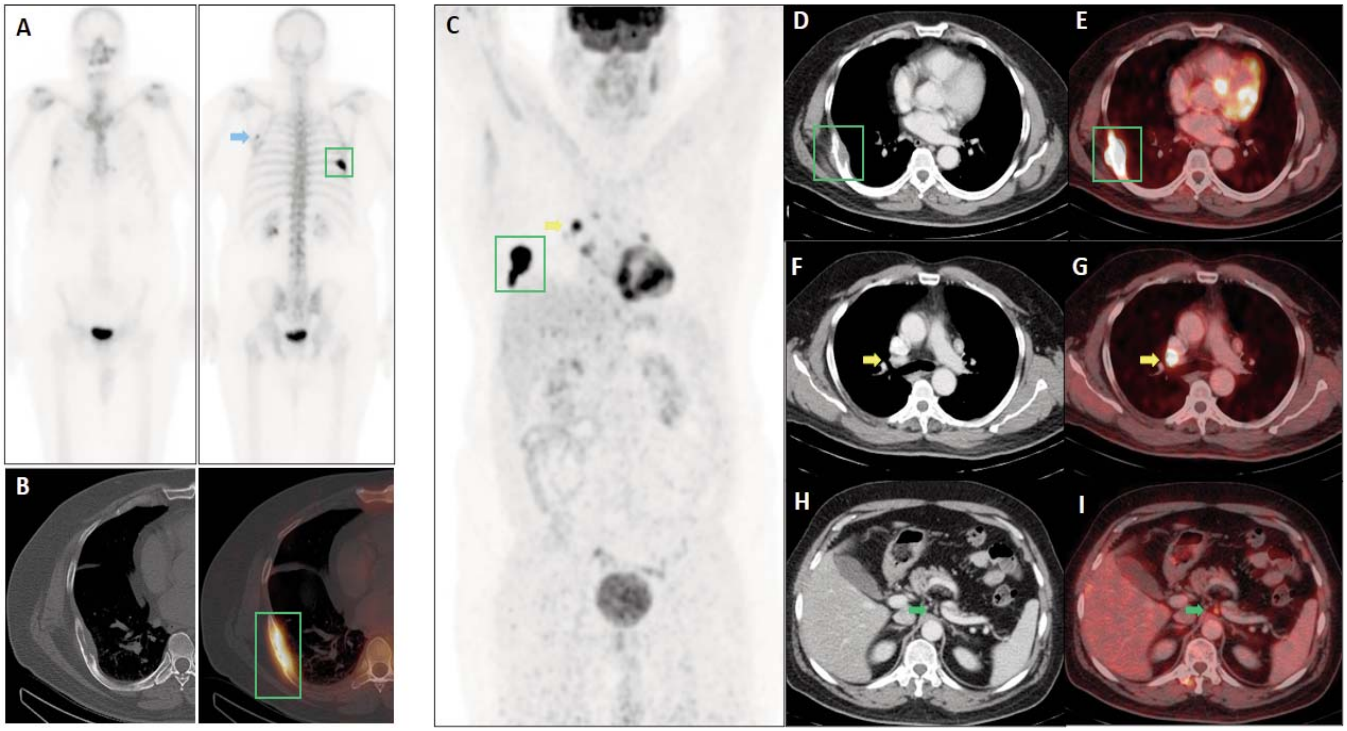


**Figure:** Planar 99mTc MDP bone scan anterior [A] and posterior [B] images show avid expansile right 7th rib lesion (green box) and faint uptake in left 4th rib (blue arrow). Maximum intensity projection (MIP) image of 18F FDG PET-CT shows hypermetabolic right 7th rib lesion [C, green box] and mediastinal nodes [C, yellow arrow]. No uptake in the left 4th rib was noted. Right 7th rib uptake correlated to a lytic lesion with soft tissue on SPECT/CT [Axial CT only D and fused SPECT/CT E, green box]. In addition, avid dense appearing nodes on SPECT/CT were seen; likely reactive [F, G yellow arrows]. FDG avid tiny para-aortic node was noted [H,I green arrows].

## Discussion

A 59-year-old male was referred for bone scan for assessment of right sided chest pain and shortness of breath. Bone scan with SPECT-CT showed an avid expansile lesion in right 7th rib with underlying lytic lesion associated with soft tissue [A, B]. Also, subtle uptake was also noted in the left 4th rib. Due to suspicion of a sinister pathology, histopathological correlation was suggested. Biopsy of right 7th rib lesion showed DLBCL with germinal center type. He was referred for

assessment with 18F FDG PET/CT to evaluate the extent of the disease. Solitary right 7th rib lesion was seen [C-E] along with avid dense appearing mediastinal nodes [C, F, G], likely reactive. A tiny avid paraaortic node was also seen for which follow-up was suggested [H, I].

DLBCL as solitary rib lesion is an extremely rare presentation of non-Hodgkin Lymphoma with only a limited number of documented cases and when present, it creates a diagnostic challenge due to its atypical presentation.[2] Although, use of bone scans for staging lymphomas has significantly declined due to higher sensitivity of 18F FDG PET-CT in these cases, this case underscores the utility of bone scans as an initial detection tool for primary bone DLBCL. DLBCL is an aggressive lymphoma and is notorious for treatment resistance and relapse.[3] Use of bone scans in this patient lead to its early detection and timely treatment, which is important for improved patient survival.

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