

# <sup>18</sup>F-FDG PET/CT image of tenosynovial giant cell tumor in the thoracic vertebra

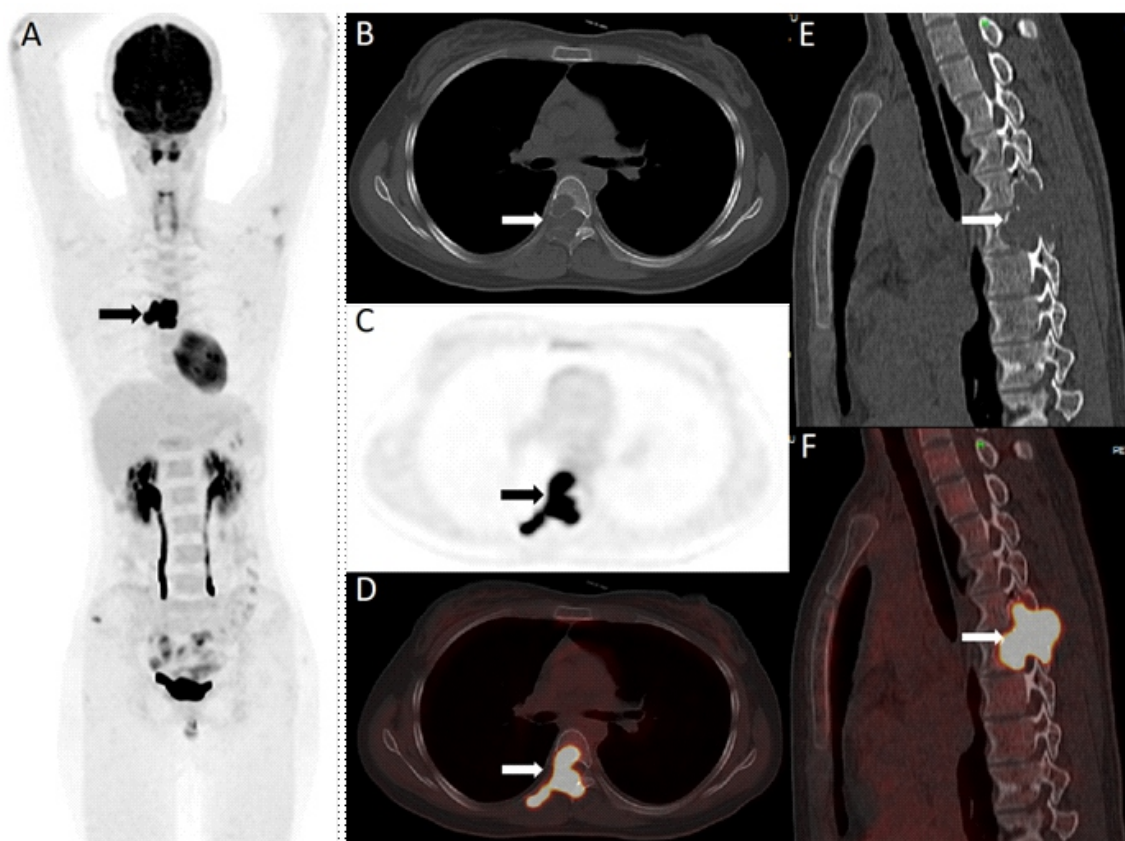
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## Abstract

Diffuse-type tenosynovial giant cell tumor (D-TSGCT) is a destructive benign tumor-like proliferative disease. Diffuse-type tenosynovial giant cell tumor rarely arises from the axial skeleton. We report a case of image findings of D-TSGCT in the thoracic vertebra. On fluorine-18-fluorodeoxyglucose (<sup>18</sup>F-FDG) positron emission tomography/computed tomography (PET/CT) image, it presented a lytic bone destruction of 6<sup>th</sup> thoracic vertebra, vertebral processes as well as adjacent sixth rib with intense <sup>18</sup>F-FDG uptake. Our case hints another unusual D-TSGCT image characteristic, which should be considered as a differential diagnosis when we interpret similar sign on <sup>18</sup>F-FDG PET/CT.



**Figure 1.** A 21-year-old woman came to our hospital complaining of back pain for one month. Chest CT showed bone destruction of the thoracic vertebra. Malignancy was suspected and <sup>18</sup>F-FDG PET/CT was performed for staging. The maximum intensity projection (MIP) image (A), axial CT (B), PET (C), fusion image (D), coronal CT (E) and fusion image (F) indicated lytic bone destruction of 6<sup>th</sup> thoracic vertebra, right transverse processes, as well as adjacent sixth rib, with intense <sup>18</sup>F-FDG uptake of maximum standardized uptake value (SUVmax) 18.73. The patient underwent surgical resection. The final pathology supported a diagnosis of diffuse-type tenosynovial giant cell tumor. Diffuse-type tenosynovial giant cell tumor (D-TSGCT) is a destructive benign tumor-like proliferative disease [1]. It mainly occurs in the synovial membranes of tendon sheaths, bursa, and joints [2] and rarely arises from the axial skeleton [3]. On <sup>18</sup>F-FDG PET/CT, D-TSGCT could have intense <sup>18</sup>F-FDG uptake [4, 5]. Zhang et al. (2022) reported a case of D-TSGCT which presented as osteolytic bone destruction of the facet joint with intense <sup>18</sup>F-FDG uptake [6]. Shen et al. (2019) showed another D-TSGCT case manifesting as a soft tissue mass with heterogeneous <sup>18</sup>F-FDG uptake, with involvement of T9 to T10 vertebra and adjacent ribs [7]. The patient in our case had only lytic bone destruction, without soft tissue mass formation. Similar image appearance should consider the possibility of lymphoma [8], Rosai-Dorfman disease [9], liposarcoma [10]. Our case hints another unusual D-TSGCT image characteristic, which should be considered as a differential diagnosis when we interpret similar sign on <sup>18</sup>F-FDG PET/CT.

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