

¹⁸F-FDG PET/CT imaging in a patient with solitary primary sacral lymphoma

Abstract

Solitary primary bone lymphoma of the sacrum is rare. We report a case of a 77-year-old male patient who presented with unexplained numbness and pain in the right lower extremity for over 2 months. Tumor markers and other laboratory were unremarkable. Fluorine-18-fluorodeoxyglucose positron emission tomography/computed tomography (¹⁸F-FDG PET/CT) revealed a solitary osteolytic bone lesion of the sacrum with intense ¹⁸F-FDG uptake (SUVmax=10.7). The subsequent biopsy confirmed the diagnosis of diffuse large B-cell lymphoma. After one cycle of R-CHOP, the neurological symptoms of the patient improved significantly.

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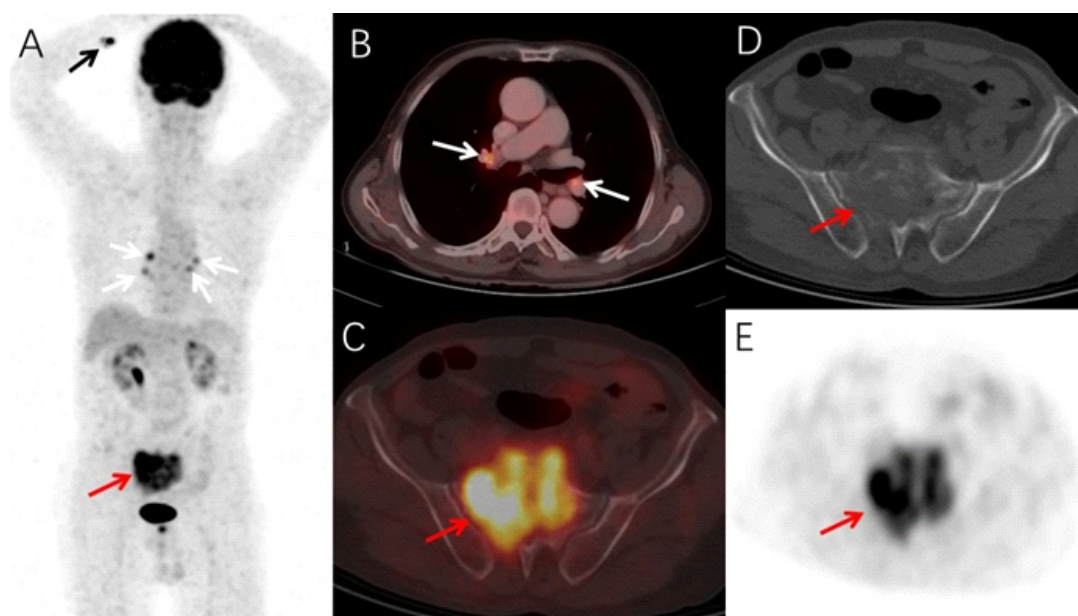


Figure 1. The PET maximum intensity projection (MIP) image showed a focus of increased ¹⁸F-FDG uptake in the pelvis (A: red arrow). There were also a few symmetrical and not-enlarged hilar lymph nodes with increased ¹⁸F-FDG uptake, which were considered reactive in origin (A, B: white arrow). The focal ¹⁸F-FDG uptake at the right elbow was due to radiotracer injection (A, B: black arrow). The location of the pelvic lesion on the axial plane (C, D, E: red arrow) corresponding to the ¹⁸F-FDG-avid MIP image. The mass centered at S-2, invaded the adjacent sacral canal, right S1-2 foramina and pelvic cavity (C and D: arrow). Fluorine-18-FDG PET/CT scan showed no other abnormality elsewhere. Binding with the pathological results and immunohistochemistry (CD19+, CD20+, BCL-6+, BCL-2 >90%, C-MYC 40%, Ki-67 90%), he was diagnosed of sacral solitary primary bone lymphoma [PBL, (diffuse large B-cell)].

In adults, the most common primary sacral tumor is a chordoma, which has inferior ¹⁸F-FDG uptake, and easy to protrude to the sacral epidural space [1]. Primary bone lymphoma (PBL) is commonly prone to longitudinal long bones with SUVmax up to and beyond 10 compared with approximate 5 in the majority benign bone lesions [1-2]. When PBL comes to the sacrum, it is more likely to invade the adjacent vertebrae and foramina, resulting in severe neurological symptoms of buttocks and lower limbs, compared with thoracolumbar lymphomas generally accompanying with mild responses [3]. Even though there are many overlaps among the primary osseous sacral lesions, this case cautions us that the primary bone lymphoma should be taken into consideration. Positron emission tomography/CT highlights the important value in the pre-treatment staging and identification of PBL.

Bibliography

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