FDG Uptake in Sacroiliac Joint Due to Osteitis Condensans Ilii Shown on PET/CT in a Patient With Breast Cancer

The Value of Coregistered CT in Avoiding Misinterpretation

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Abstract: A 56-year-old woman with breast cancer underwent FDG PET/CT at follow-up. The PET images showed increased FDG uptake along right sacroiliac joint. The coregistered CT images showed diffuse sclerosis around the sacroiliac joints, but no bony destruction, periarticular erosion, or joint space narrowing. She had been complaining of intermittent lower back pain since her last pregnancy. The radiologic pictures and history of postpartum back pain were considered as typical characteristics for osteitis condensans ilii. This case reminds us that careful inspection of the coregistered CT images is important to avoid potential misinterpretation because of osteitis condensans ilii.

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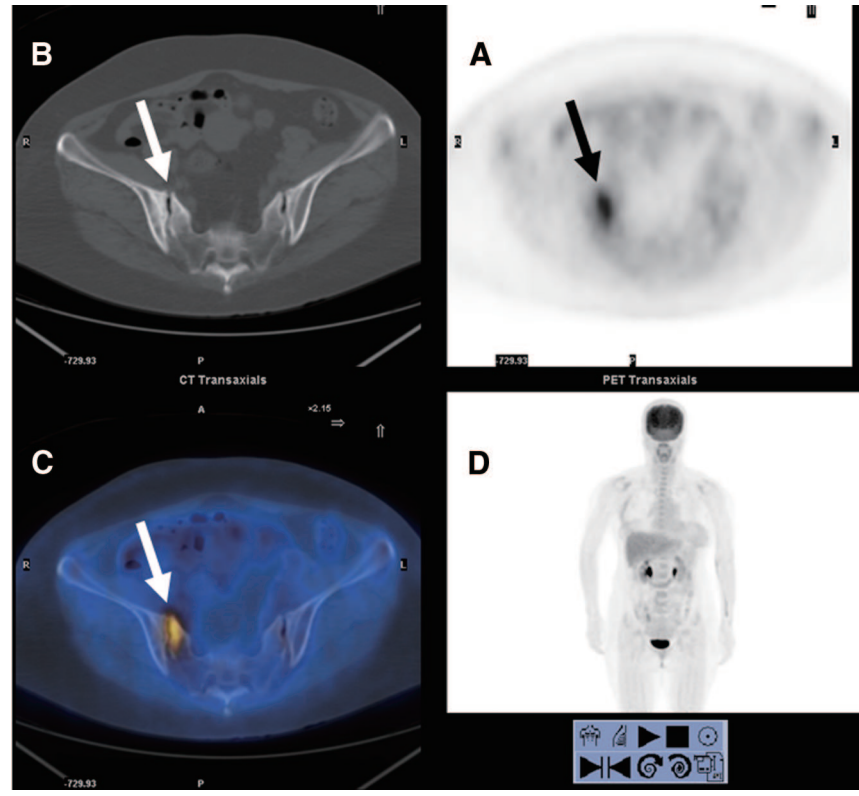

FIGURE 1. The transaxial PET (**A**), CT (**B**), fused PET/CT (**C**), and maximum intensity projection (MIP) (**D**) images revealed focally increased FDG uptake around right sacroiliac joint with a maximum standardized uptake value of 4.41 at 1 hour (arrow), which might be secondary to bony metastasis, primary skeletal malignancy,[1] insufficiency fracture,[2] or sacroiliitis.[3] The coregistered CT images revealed diffuse sclerosis around the iliac sides of bilateral sacroiliac joints, more severe for right side (arrow), but no finding of suggesting metastasis, such as bony destruction or erosion. In addition, there was no joint space narrowing, periarticular erosion, or osteoporosis, which was characteristic of sacroiliitis.

FIGURE 2. The patient was followed up with radiography shortly after FDG PET/CT. The image showed increased densities around the iliac sides of bilateral sacroiliac joints, more remarkable for right side (arrow), which was characteristic of osteitis condensans ilii.

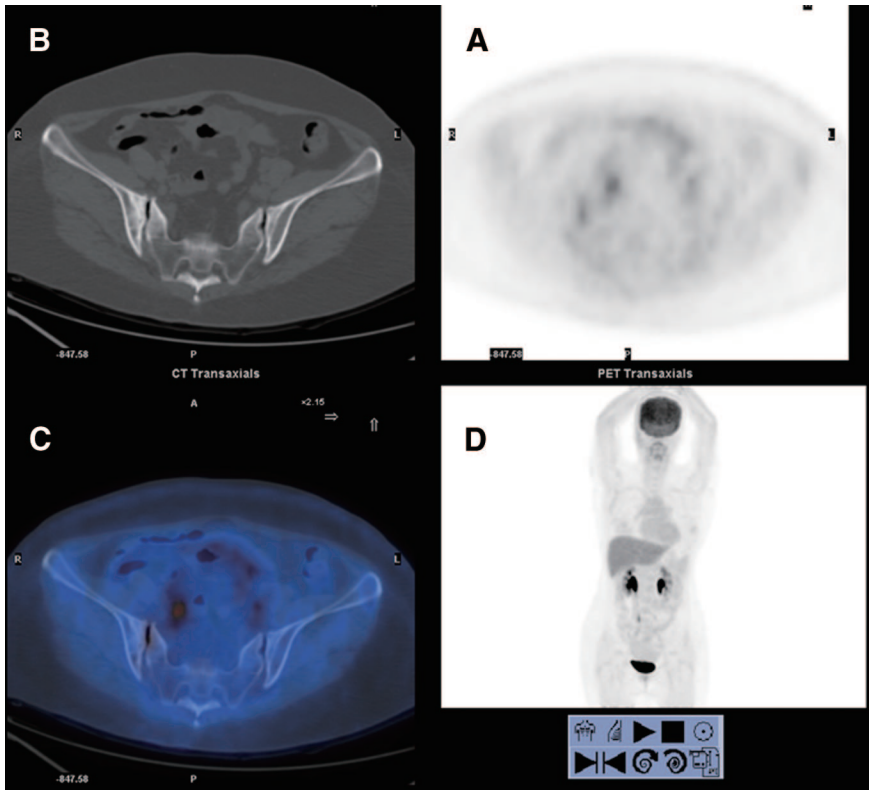

FIGURE 3. The patient underwent FDG PET/CT again at 2-year follow-up. The transaxial PET (**A**), CT (**B**), fused PET/CT (**C**), and MIP (**D**) images revealed only mild FDG uptake in right sacroiliac joint with a maximum standardized uptake value of 2.17, showing significant resolution of FDG activity compared with previous study. No apparent change was noted for the diffuse sclerosis shown on the CT images. Considering both the radiologic findings and patient's history of postpartum back pain, the skeletal abnormalities were characterized as osteitis condensans ilii (OCI).[4–6] It has been reported that OCI might result in an increased uptake in the sacroiliac joints on ^{99m}Tc methyl-diphosphonate (MDP) bone scintigraphy.[7] To the best of our knowledge, this is the first report demonstrating false-positive FDG uptake because of OCI on PET, and the coregistered CT image can help avoid potential misinterpretation.[8]