Incidental Detection of Temporary Focal FDG Retention in the Spleen

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F-18 fluorodeoxyglucose (FDG) positron emission tomography (PET)/computed tomography (CT) is a valuable tool in discriminating malignancy from benign lesion. But because various false-positive results reduce the diagnostic specificity, nuclear medicine physicians should be familiar with possible false-positive cases. Although many cases of high FDG uptake mimicking malignancy have been reported, temporary FDG uptake of normal spleen has not been reported previously. We report herein a phenomenon of temporary intense focal FDG uptake of normal spleen without evidence of metastasis in a 46-year-old woman with a history of anal cancer. (Figs. 1 and 2)
A 66-year-old woman underwent a whole-body F-18 fluorodeoxyglucose (FDG) positron emission tomography (PET)/computed tomography (CT) study for restaging. She had undergone concurrent chemoradiation therapy for anal cancer 2 months previously. Initial FDG PET showed only intense FDG uptake of anal cancer. Sequential whole-body FDG-PET and PET/CT images revealed decreased FDG uptake of known anal cancer and a club-shaped FDG uptake in the splenic hilum (arrows), which was interpreted to be strongly suggestive of metastasis or splenic malignancy, such as primary splenic lymphoma. The maximum standardized uptake value of the splenic hypermetabolic lesion was 8.8. There were no abnormal findings in the left lower lung, diaphragm and upper stomach. Because contrast-enhanced CT was normal, surgical exploration was deferred and we performed follow-up FDG PET/CT and MRI after 3 weeks. No treatment had been performed on her between the two tests. Whole-body FDG-PET and PET/CT images revealed no abnormal finding in the spleen. Axial respiratory triggering fast spin-echo T2-weighted with fat suppression MRI image and gadolinium-enhanced three-dimensional (3D) LAVA (fat saturation gradient echo T1 weighted) axial image showed no abnormality in the spleen. Clinical course was uneventful and FDG PET/CT performed 5 months later showed no abnormal finding in the spleen. Although pathologic confirmation was not done, normal contrast-enhanced CT, normal follow-up PET/CT, normal magnetic resonance imaging (MRI), and an uneventful course provided enough evidence to support the view that there was no pathology in the spleen. To our knowledge, increased temporary focal FDG uptake in the spleen, mimicking metastasis or splenic malignancy in a patient treated for cancer, has never been reported before. The hypervascularity of the spleen may contribute to the occurrence of such a phenomenon. For about two decades, FDG-PET has been in the limelight as regard to discriminating malignancy from benign lesion [1, 2]. But because diverse false-positive and false-negative results sometimes reduce its accuracy [3–7], it is worthy to include it to the gamut that high temporary focal FDG uptake in the spleen may occur without any proven pathology.
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References