

Incidental detection of pseudodiverticulum of sigmoid colon on ^{18}F -FDG-PET/CT in a patient with lymphoma

To the Editor: Incidental pathologic findings have been reported on myocardial perfusion scintigraphy as well as on fluorine-18 fluorodesoxyglucose-positron emission tomography/ computerized tomography (^{18}F -FDG-PET/CT) by Kotsalou et al and Bertagna et al respectively and published in HJNM [1-2]. The present case illustrates the potential pitfalls in ^{18}F -FDG-PET of the abdomen imaging. A 75 years old woman presenting with pain in the right hip was found to have an expansile bone lesion in the posterior pillar of the acetabulum and their adjoining ischium along with involvement of the adjacent muscles. Computerized tomography (CT) guided biopsy, from soft tissue showed B cell type of non-Hodgkin's lymphoma (NHL). A ^{18}F -FDG-PET/CT scan for the initial evaluation of disease activity showed intense ^{18}F -FDG uptake in a soft tissue mass (7.5x6x3cm) surrounding the right hip joint causing lytic destruction of the posterior part of acetabulum and the ischium and of the right obturator internus in association with the mass. Another focal, circumferentially increased uptake was noted in the distal part of the sigmoid colon. Repeated ^{18}F -FDG-PET/CT scan for response evaluation after 4 courses of rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP) chemotherapy showed no ^{18}F -FDG avidity in the right hip. However, focal uptake in the sigmoid colon persisted. This was unrelated to primary pathology and colonoscopy confirmed a pseudodiverticulum at this site of ^{18}F -FDG uptake.

The routine use of ^{18}F -FDG-PET to evaluate lymphoma, especially its management [3], significantly increases the probability of detecting unexpected diseases in the same scan. Incidental abdominal findings involving the digestive tract have been reported to occur in 1.3% of the scanned patients without significant difference in the intensity of ^{18}F -FDG uptake within malignant, premalignant, and benign lesions. However, focal, fusiform, or lobulated abnormalities are significantly more intense than physiological uptake elsewhere in the bowel, particularly if associated with a structural abnormality and may sometimes warrant endoscopic examination [4-8].



Figure 1. Images with ^{18}F -FDG PET/CT of a 75 years old woman for recently diagnosed with NHL involving the right hip for initial staging. Maximum intensity picture (MIP) (A) shows a large ^{18}F -FDG avid mass in the right hip (arrow) and another lesion in the pelvis (arrow head). Coronal CT image (B) and fused PET/CT image (C) show intensely increased uptake in the right hip (arrow) compatible with NHL. Coronal CT image (D) and fused PET/CT image (E) show intensely increased uptake in the pelvis corresponding to sigmoid colon (arrow head).



Figure 2. Follow up ^{18}F -FDG-PET/CT images, MIP (A) coronal CT (B) and coronal fused PET/CT (C) show focal uptake in sigmoid colon (arrow head) which is unrelated to NHL and which on colonoscopy proved to be a pseudodiverticulum. No uptake is seen in the right hip, consistent with complete response to chemotherapy.

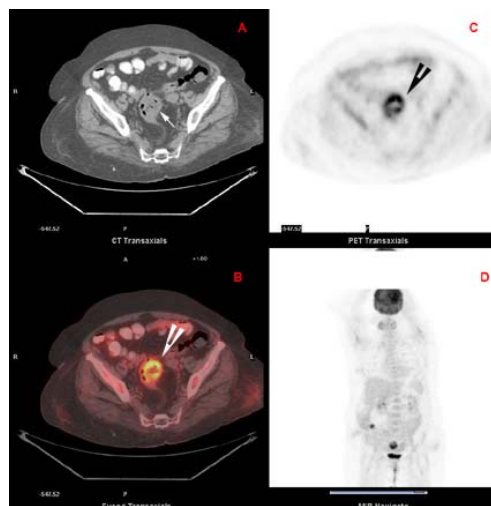


Figure 3. Transaxial images from ^{18}F -FDG-PET/CT study, CT (A), fused PET/CT (B), PET only (C) and MIP (D) showing uptake in the sigmoid colon (arrow head). Computerized tomography image (A) shows focal wall thickening, pericolic fat infiltration and peritoneal thickening in the distal sigmoid colon (arrow). A small air-containing cavity lined by thin epithelium is noted in the serosal surface, which is consistent with the pseudodiverticulum.

In conclusion, as ^{18}F -FDG is not lymphoma-specific, any unusual ^{18}F -FDG avidity should be correlated with further investigations and/or an alternative diagnosis. A follow-up ^{18}F -FDG-PET, performed after 2-3 months, is useful in providing a specific diagnosis which in 88% of the cases is related to malignancies [9-11].

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Koramadai Karuppuswamy Kamaleshwaran MBBS, Dhritiman Chakraborty MBBS, Raghava Kashyap MD, Anish Bhattacharya MBBS, DNB, Baljinder Singh MSc, PhD, Bhagwant Rai Mittal MD, DNB

Department of Nuclear Medicine and PET, Postgraduate Institute of Medical Education and Research, Chandigarh-160 012, India

Dr. B.R.Mittal MD

Professor and Head, Department of Nuclear Medicine and PET, PGIMER, Chandigarh-160 012, India.
Tel: +91 172 2756722, Fax: +91 172 2742858,
E-mail: brmittal@yahoo.com

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