Physiological Uptake of F18-FDG in breast parenchyma

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Abstract
Increased F18-FDG uptake is on PET-CT images should always be assessed carefully for physiological and pathological causes. Breast uptake may be focal or diffuse. Although propensity of tumours increase in focal uptake; diffuse involvement may be seen in lymphoma and some types of breast cancer. Frequently, diffuse breast uptake is non-pathologic due to infection, physiological uptake or lactation. We describe the case of a 27-years old female who underwent 18F FDG-PET-CT scan for staging workup of diffuse large B-cell lymphoma (DLBCL). The scan demonstrated bilateral F18-FDG breast uptake, due to ongoing lactation.

Keywords: F18- FDG, DLBCL.

A 27-years old lactating female, diagnosed with DLBCL, underwent staging PET-CT scan. Standard radiation protection advice and lactation instructions were given before radiotracer injection.1 Scan acquired 60 minutes after intravenous injection of 350MBq F18-FDG, showed hypermetabolic right tonsillar and right level-II lymph nodule uptake. Axial CT, PET and PET-CT fused images showed significant bilateral breast radiotracer uptake. Differentials included disease versus lactational uptake. Breast parenchymal uptake is thought to be due to increased plasma glucose uptake for milk production. Hicks et al report no significant FDG uptake in breast milk and suggest that close contact with infant would result in excessive radiation exposure; therefore nursing is limited for 24 hours. In addition, radiotracer uptake was not related to prolactin stimulation and rather due to intracellular FDG trapping within glandular cells.2 Although low grade diffuse breast uptake is normal in proliferative glandular tissue, higher uptake may be seen in adolescent girls with dense parenchyma and in lactating females.3 Proper history is essential before commenting on increased parenchymal uptake to exclude physiological causes.

References