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The importance of incidental breast uptake on ^{18}F-FDG PET/CT imaging

Aisha Ismaila and **Dhruba Dasgupta**
King's College London, UK

Background: With increasingly use of FDG PET/CT imaging, incidental findings in the breast are also detected in the course of performing a PET-CT scan for other primary malignancies which may be associated with a second primary malignancy or other pathological lesions warranting further clinical evaluation. A second primary cancer is an important prognostic factor following treatment in patients with cancer.

Aim: To determine the clinical importance and malignant potential of incidental abnormal hypermetabolic foci in the breast at 18F-FDG PET/CT performed for evaluation of malignancy other than breast cancer or during a screening examination.

Methods: A total of 10,291 FDG PET/CT scans from January 2012 to July 2014 were performed at our institution. After exclusion of cases with breast cancer, files of 460 female patients were retrospectively reviewed and we identified 34 patients with incidental hypermetabolic breast foci with no previous or known breast disease. 20 of these underwent further evaluation with biopsy or follow-up with ultrasound or mammography. The etiology, age, SUVmax, SUVmax ratio, diameter of breast lesion, findings in the CT portion, ultrasound and mammographic findings were assessed.

Results: Incidence of breast incidentaloma was found in 0.03% of cases. Malignancy was diagnosed in 6 (30%) patients and a benign pathology in 14 (70%) patients. A borderline statistically significant difference in SUVmax was recorded between the malignant and benign lesions (p=0.052). However, the ratio of SUVmax was significantly higher in the malignant lesions (p=0.039).

Conclusion: Incidental hypermetabolic breast foci may represent malignant lesions in the breast in as many as 30%. Findings of this study emphasize the need for further assessment of these including histopathologic confirmation of abnormalities to define the aetiology of these incidental breast lesions.

Biography

Aisha Ismaila is a graduate of MBBS from the University of Maiduguri, Nigeria. She has completed a Masters degree in Public health (MPH) from the University of Sheffield in 2013 and also recently obtained a Master of Science in Nuclear Medicine (MSc) from King's College London in January 2015. She is currently on a clinical placement in the Nuclear Medicine department at the National Hospital Abuja, Nigeria.

ayeesher_aee@yahoo.com

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