ORIGINAL ARTICLE

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Breast MRI and ^{18}F FDG PET/CT in the management of breast cancer

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Goals: ^{18}F FDG PET/CT is used for diagnosis, staging and establishing the response to therapy in various malignancies, including breast cancer (BC). Dedicated breast MRI (BMRI) is gaining a role in the management of BC patients (pts), demonstrating high sensitivity and specificity for detection of small lesions. We were therefore prompted to review our experience with PET and BMRI in BC. ***Methods:*** This is a retrospective study of 21 women with BC, 30–76 years old, who had BMRI and whole-body FDG PET/CT at our institution from Jun 2002 to May 2005. A total of 6 patients (group A) had BMRI and PET/CT in the preoperative period and 15 patients (group B) had BMRI and PET/CT after surgery. Reinterpretation of the imaging studies for accuracy and data analysis from medical records were performed. ***Results:*** For group A, BMRI identified breast lesions in 4 patients, while PET/CT was able to identify breast lesions in 5 patients. All these were proven to be malignancy on pathology examination. In group B, BMRI detected recurrent breast lesions in 8 patients, with 88.9% sensitivity and 83.3% specificity. In the same patient population, PET/CT was 33.3% sensitive and 91.7% specific. As a whole body examination, PET/CT revealed metastatic disease in 6 patients (100% sensitive and 90% specific). Overall, sensitivities and specificities for breast disease detection were 85.7% and 85.7% for BMRI, and 75% and 92.3% for ^{18}F FDG PET/CT. ***Conclusions:*** As expected, BMRI is more sensitive than PET/CT in the detection of breast lesions. However, PET/CT as a whole-body examination changed the management of disease by detection of distant lesions in 6 of the 21 patients. Our study suggests that ^{18}F FDG PET/CT and BMRI should be considered as complimentary imaging tools in the pre- and postoperative work-up of patients diagnosed with breast cancer.

Key words: breast cancer, ^{18}F FDG, PET/CT, MRI