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Electronic Letters to:

breast cancer:

U. Veronesi, P. Arnone, P. Veronesi, V. Galimberti, A. Luini, N. Rotmensz, E. Botteri, G. B. Ivaldi, M. C. Leonardi, G. Viale, A. Sagona, G. Paganelli, R. Panzeri, and R. Orecchia

The value of radiotherapy on metastatic internal mammary nodes in breast cancer. Results on a large series

Ann Oncol 2008; 19: 1553-1560 [\[Abstract\]](#) [\[Full text\]](#) [\[PDF\]](#)

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▼ **DWI MR OF THE BREAST AND NODAL STAGING**

Gabriele Levrini, Andrea Botti, Giovanni Borasi and Franco Nicoli (9 March 2009)

DWI MR OF THE BREAST AND NODAL STAGING

9 March
2009



Gabriele Levrini,
Radiologist
*Azienda Ospedaliera
S. Maria Nuova. V.le
Risorgimento 80, 42100
Reggio Emilia. Italy,*
Andrea Botti, Giovanni
Borasi and Franco Nicoli

Dear Sir

We read with interest the paper of Veronesi et al. (1) which reports investigation into the complete mapping of regional node involvement, in particular concerning the internal mammary node chain, to stage breast carcinoma.

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[Re: DWI MR OF THE BREAST AND NODAL STAGING](#)

We congratulate the authors for the great value of this paper; however, as radiologists, we would like to highlight the potential role of non-invasive cross-sectional imaging techniques, in particular Diffusion Weighted Magnetic Resonance Imaging of the breast, as a potential alternative to surgical exploration of the internal mammary chain.

Magnetic Resonance (MR) imaging, in particular with the use of gadolinium enhancement, has been reported as a well established modality in characterizing breast lesions and evaluating local extent of disease (2); however, a wide variety of dynamic MR findings have also been reported (3) and the modality is not sufficiently accurate in differentiating between malignant and benign breast lesions. In addition, even showing

additional role on evaluation of lymph node chains, usual dynamic sequences after gadolinium venous administration do not represent a method sensitive and specific enough to characterize lymph node involvement.

The clinical usefulness of diffusion-weighted MR imaging (DWI) has been reported in evaluating brain or liver lesions (4) and detecting acute cerebral infarction (5). In addition, a correlation between the histological grade of malignant brain tumours and apparent diffusion coefficient (ADC) has been documented (6). Recently, several studies have reported that ADC is useful in differentiating malignant from benign breast lesions (7) and that there is a relationship between ADC and cellularity (8) (9). A study (10) concluded that DWI has a high negative predictive value for excluding mediastinal lymph node metastases from non-small cell lung cancer and has the potential to be a reliable alternative non-invasive imaging method for the preoperative staging of mediastinal lymph node in patients with non-small cell lung cancer. DWI has also been reported (11) as allowing a reliable differentiation between benign and malignant cervical nodes.

We recently performed gadolinium enhanced and DWI MR of the breast in 32 y.o. female with palpable, mammographically occult, multifocal cancer (cytological confirmation by fine-needle ultrasound-guided biopsy) of the left breast with known axillary nodal metastases (cytological confirmation). The gadolinium-enhanced MR examination demonstrated the presence of multiple enhancing nodules in the inner quadrants of the left breast; DWI demonstrated the presence of a restricted diffusion in omolateral axillary and internal mammary stations (2nd and 3rd intercostal spaces). On the basis of this report a F18FDG-PET/CT was performed that confirmed the findings: pathologic F18FDG deposits were present in the medial part of the left breast and in the nodal stations previously described. The patient was referred to neo-adjuvant chemotherapy and then underwent total mastectomy, axillary resection and removal of the internal mammary nodes at the level of the 2nd and 3rd intercostal spaces with histological confirmation of the imaging findings: invasive ductal carcinoma with axillary (20 out of 22) and internal mammary (2 nodes at the 2nd and 3rd space) metastasis.

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Conflict of Interest:

None declared

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