

Expanding Role for Breast MR!

Breast MR has an expanding use in women who have breast cancer or are at high risk of it, according to two 2007 publications.

The American Cancer Society has a **new set of guidelines for use of MR in women at high risk for breast cancer**. A report in The New England Journal of Medicine shows that when cancer is detected in one breast MR can improve detection of tumours in the other breast that are missed by mammography, ultrasound and clinical evaluation.

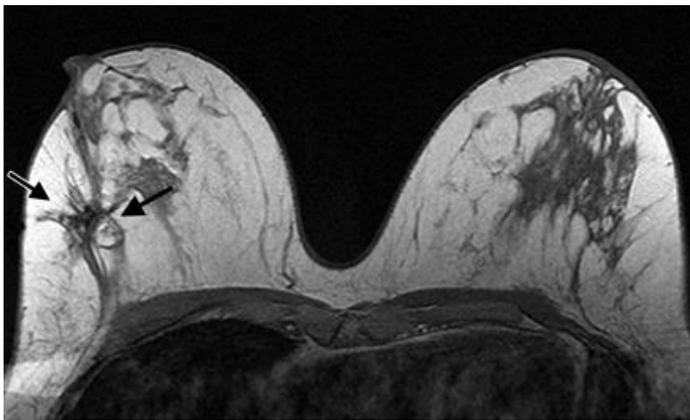


Fig 1. - Recurrent tumour in surgical scar.

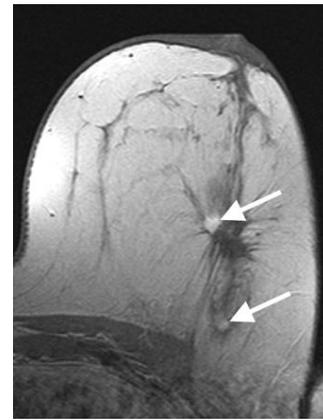


Fig 2. - Tumour recurrence in surgical scar, with unsuspected second focus anterior to pectoral fascia.

The established combination of mammography, high resolution ultrasound and clinical examination, detects 85-90% of breast cancers. Radiologists and clinicians are familiar with the following scenarios in which this approach falls short:

- Palpable lesion with no imaging correlate
- So called interval cancers, missed or not visible on initial images
- Understaging extent of disease, multifocality in the same or other breast
- Distant or axillary breast cancer metastases with negative mammogram and ultrasound
- Undetected chest wall disease
- Inaccurate assessment of large tumours treated with chemotherapy

MR mammography is changing screening strategies and management of breast cancer.

Screening MRI is recommended for women with a 20-25% or greater lifetime risk of breast cancer (the average lifetime risk is 12-13%), including women with a strong **family history of breast or ovarian cancer** (including BRCA and rarer mutations), and **women treated with radiation** to the chest for disorders like Hodgkin disease. Other categories that can be considered, but for which data is currently less robust, include personal history of breast cancer, carcinoma in situ, lobular carcinoma, atypical ductal hyperplasia and dense breasts on mammogram.

Studies have demonstrated that **MR screening detects cancer with early stage tumours**, associated with better outcomes.

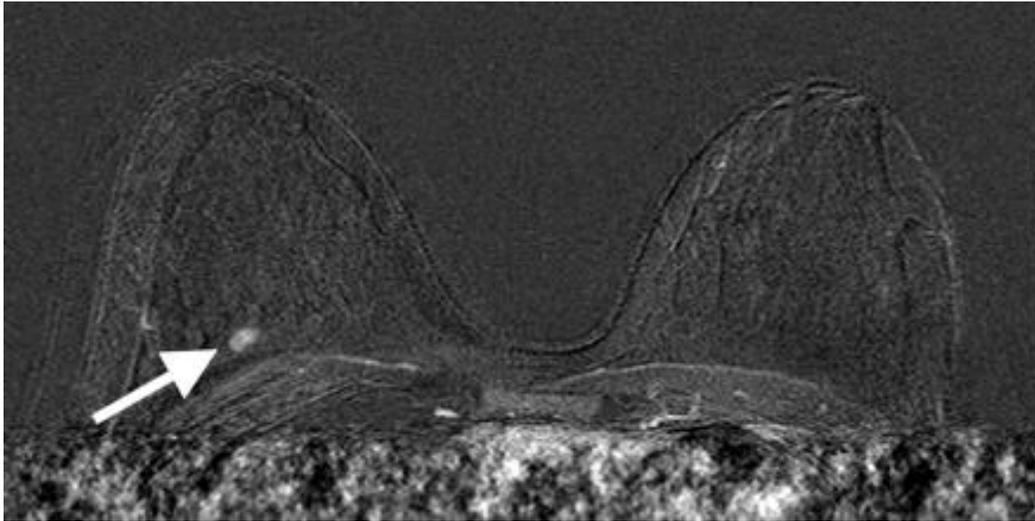


Fig 3. – Mammographically occult tumour detected with MR in young woman with family history of breast cancer.

MR has drawbacks: its greater sensitivity compared with mammography can result in **false positive findings**, resulting in MR guided biopsy and additional scans. This is why it is **not recommended for women at average risk**.

Authors of the study recommending the role of **breast MR in women with newly diagnosed cancers** think it is most important to understand the full extent of a woman's breast cancer before her therapy is initiated. In this setting MR is most likely to be useful in younger women and those with dense tissue that hides tumours on mammograms.

References:

N Engl J Med 2007; 356: 1295-303

CA Cancer J Clin 2007; 57: 75-89

Radiology 2007 ; 244: 672-691

Lancet 2007; 370: 485-492

Auckland Radiology has advanced breast imaging capability with the new 3T MR, with an interventional breast coil with biopsy and needle localisation capability.

Robert Sim

The partners, associates and staff of Auckland Radiology Group extend season's greetings to our referrers and wish everyone a happy and successful New Year.

