The role of breast MRI in the surgical planning and management of invasive lobular carcinoma: A four-year retrospective study

T Arunan, R Bonomi, O Strukowska and **D Betal**
Brighton and Sussex Medical School, United Kingdom

Background: Invasive lobular carcinomas (ILCs) are the second most common subtype and account for 5-15% of all breast cancers. Although conventional imaging such as mammography and ultrasound have been regularly used to screen and detect breast cancer, they have presented clinical challenges in the surgical planning of patients with ILC due to their lower sensitivity in detecting and measuring the size of the tumour. Breast magnetic resonance imaging (MRI) has a high sensitivity of approximately 93% in detecting ILC. From 2009, the National Institute of Clinical Excellence (NICE) guidelines recommended the use of MRI as an adjunct to conventional imaging for the pre-operative surgical planning of patients with biopsy-proven ILC. The aim of this study was to investigate the value of MRI in the detection and measurement of ILC tumours and its influence in the surgical planning of these patients compared to conventional imaging.

Methods: A retrospective study was undertaken looking at 661 patients' records that had bilateral breast MRIs between January 2012 and January 2016, 110 patients met the inclusion criteria with biopsy-proven ILC and as suitable for surgery. Data including demographics, mode of presentation, clinical examination/ mammogram/ ultrasound/ MRI findings (site, number and size of lesions), histological diagnosis, type of surgery performed and final histological results were retrieved and evaluated for all 110 patients.

Results: Comparing MRI and final pathology results showed that MRI correctly identified 89% of multifocal lesions. MRI measurements of 86 tumour lesions (66%) were correctly matched to within 0.5cm of the pathology size, correlating better with pathology size than mammograms and ultrasounds. The surgical management of 25% of the 110 patients changed due to MRI results. 70.6% of the changed surgeries due to MRI findings were deemed appropriate.

Conclusion: MRI proved to be a valuable diagnostic tool and that they should be of increased utility when detecting and measuring lesions as well as the surgical planning of patients with ILC, compared to conventional imaging.

e: t.arunan1@uni.bsms.ac.uk

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