

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.e-asianjournalsurgery.com](http://www.e-asianjournalsurgery.com)

## ORIGINAL ARTICLE

# Role of breast magnetic resonance imaging in predicting residual lobular carcinoma *in situ* after initial excision

Ryu Kyung Lee <sup>a</sup>, Hye Jung Kim <sup>b</sup>, Jeeyeon Lee <sup>a,\*</sup>

<sup>a</sup> Department of Surgery, Kyungpook National University, School of Medicine, Daegu, Republic of Korea

<sup>b</sup> Department of Radiology, Kyungpook National University, School of Medicine, Daegu, Republic of Korea

Received 7 December 2016; received in revised form 23 January 2017; accepted 6 February 2017

## KEYWORDS

breast;  
carcinoma;  
lobular;  
MR

**Summary** *Background:* Breast magnetic resonance (MR) imaging is a useful screening modality in detecting suspicious lesions in patients with a history of lobular carcinoma *in situ* (LCIS). This study aimed to evaluate the effectiveness of breast MR imaging in detecting remnant LCIS lesions after initial excision.

*Methods:* Between 2011 and 2015, 29 patients with LCIS who underwent initial excision were enrolled. Breast ultrasonography and breast MR imaging was conducted after initial excision. Imaging findings were compared with pathologic results.

*Results:* There were nine (31.0%) cases with positive margins after initial excision; they were LCIS ( $n = 8$ ) and atypical lobular hyperplasia ( $n = 1$ ). Residual lesions were identified in 12 cases; they were invasive lobular carcinoma ( $n = 1$ ; 3.4%), LCIS ( $n = 9$ ; 31.0%), atypical lobular hyperplasia ( $n = 1$ ; 3.4%), and papillary carcinoma *in situ* ( $n = 1$ ; 3.4%). Prior to the second operation, these lesions could be detected in seven cases using ultrasonography (sensitivity, 53.3%; specificity, 100%) and in 10 cases using breast MR imaging (sensitivity, 83.3%; specificity, 100%).

*Conclusions:* Breast MR imaging showed higher sensitivity than breast ultrasonography in detecting remnant LCIS lesions. If a suspicious lesion was found using breast MR imaging, a second operation should be considered because of the possibility of multifocality, even if LCIS was confirmed at the initial operation.

© 2017 Asian Surgical Association and Taiwan Robotic Surgical Association. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

\* Corresponding author. Kyungpook National University, School of Medicine, Hoguk-ro 807, Buk-gu, Daegu 41404, Republic of Korea.  
E-mail address: [drjeeyeon@naver.com](mailto:drjeeyeon@naver.com) (J. Lee).

<http://dx.doi.org/10.1016/j.asjsur.2017.02.002>

1015-9584/© 2017 Asian Surgical Association and Taiwan Robotic Surgical Association. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article in press as: Lee RK, et al., Role of breast magnetic resonance imaging in predicting residual lobular carcinoma *in situ* after initial excision, Asian Journal of Surgery (2017), <http://dx.doi.org/10.1016/j.asjsur.2017.02.002>

## 1. Introduction

Lobular carcinoma is the second most common histologic type of breast cancer and generally has a better prognosis than ductal carcinoma.<sup>1,2</sup> Several studies have reported that because the presence of lobular carcinoma *in situ* (LCIS) in the surgical margin does not increase the local recurrence rate, additional excision is not necessary.<sup>3,4</sup> However, Ciocca et al.<sup>5</sup> reported that infiltrating lobular carcinoma coexists at a significantly higher rate in patients with LCIS than in patients with no LCIS. The luminal type of infiltrating lobular carcinoma shows significantly worse oncologic outcome than invasive ductal carcinoma.<sup>6</sup> Therefore, the invasive focus of breast cancer should be appropriately managed, even if the tumor type is lobular.

Breast magnetic resonance (MR) imaging is useful for the detection of occult breast lesions or the screening of women at high risk of developing breast cancer.<sup>7-9</sup> In addition, breast MR imaging can be used for screening women with a history of LCIS.<sup>10,11</sup>

In this study, the effectiveness of breast ultrasonography and breast MR imaging was evaluated; the sensitivity and specificity were compared in the detection of residual lesions in cases that were diagnosed as LCIS at initial resection, where it could not be determined whether a clear resection margin was obtained.

## 2. Materials and methods

From 2011 to 2015, 29 patients who were diagnosed as having LCIS at initial excision were enrolled in the present study. The initial excision included conventional excision biopsy and vacuum-assisted breast biopsy (VABB). LCIS was the main malignant finding in initial pathology. The patients who were diagnosed as having LCIS with any invasive focus or combined with other malignancy were excluded from this study. We excluded cases wherein the other type of malignancy is combined. However, if the benign breast lesions were combined, it could be included.

The study protocol used was approved by the Institutional Review Board Committee of the Kyungpook National University Hospital (2016-10-008).

Based on the patients' clinical records, their clinical and pathologic characteristics were investigated. These included age, body mass index, tumor location, type of initial surgery, initial clinical and pathologic tumor size, and margin status of the initial resected specimen. All of the patients underwent mammography, breast ultrasonography, and breast MR imaging prior to the second operation. The imaging findings were categorized as negative findings (only postoperative changes), residual lesion of the breast (enhancing or irregular mass), and separated daughter nodule (Figure 1). An abnormality in the imaging findings was defined as a >category 4 lesion (Breast Imaging Reporting and Data System).

The second operation for breast cancer was performed with a safety margin, and the surgical margins were evaluated by means of intraoperative frozen biopsy. When a clear resection margin was obtained or focal LCIS was found in the surgical margin, the operation was finished. A sentinel lymph node biopsy was also conducted when a

suspicious axillary lymph node was identified from the preoperative imaging findings. After the second operation, the final pathologic report was compared to the preoperative imaging findings. Based on this result, the sensitivity and specificity of the imaging modalities were calculated.

## 3. Results

The mean age of patients was 45.7 years ( $\pm$  standard deviation, 2.83 years) and the mean body mass index was 22.9 kg/m<sup>2</sup> ( $\pm$ 2.59 kg/m<sup>2</sup>). Thirteen (44.8%) cases of LCIS were detected on the right side of the breast, and 16 cases (55.2%) were detected on the left side. The most common initial imaging finding of LCIS was the mass with indistinct margin ( $n = 12$ ), and there was one case of microcalcification only in mammography.

Twenty-one (72.4%) patients underwent conventional excision biopsy, and the other eight (27.6%) underwent VABB. Margin evaluation at initial surgery could be performed using conventional excision biopsy, but not in VABB cases. Among the 21 cases where the margin could be assessed, nine (31.0%) exhibited positive surgical margins as follows: LCIS ( $n = 8$ ; 27.6%) and atypical lobular hyperplasia ( $n = 1$ ; 3.4%). After the second operation, 27 (93.1%) patients received adjuvant radiotherapy and 25 (86.2%) received adjuvant hormone treatment (Table 1).

The mean clinical tumor size at the initial operation was 1.3 cm ( $\pm$ 1.14 cm), and the pathologic tumor size at the initial operation was 1.7 cm ( $\pm$ 1.58 cm). After the initial surgery, the mean residual tumor size based on imaging findings was 1.5 cm ( $\pm$ 3.41 cm), and the mean residual pathologic tumor size in the final report was 1.6 cm ( $\pm$ 0.95 cm). The types of residual tumors were invasive lobular carcinoma ( $n = 1$ ; 3.4%), LCIS ( $n = 9$ ; 31.0%), atypical lobular hyperplasia ( $n = 1$ ; 3.4%), and papillary carcinoma *in situ* ( $n = 1$ ; 3.4%). Twenty-five (86.2%) cases were estrogen receptor positive breast cancer and 24 (82.8%) were progesterone receptor positive (Table 2).

Mammographic findings were negative in all cases. However, a potentially malignant residual mass was detected in seven (24.1%) cases using ultrasonography and in eight (27.6%) using breast MR imaging. Two (6.9%) cases had an additional daughter nodule, which was separated from the initial excision site on breast MR images (Table 3).

The comparison of imaging findings and secondary pathologic reports of cases that involved a true remnant lesion at the second operation is detailed in Table 4. According to the results regarding the detection of a residual mass after the initial excision of LCIS, the sensitivity of breast ultrasonography was 58.3%, and the sensitivity of breast MR imaging was 83.3%. The specificity was 100.0% using both modalities.

## 4. Discussion

Breast cancer is one of the most common cancers in women and the second leading cause of cancer death worldwide.<sup>12,13</sup> Although the disease stage at diagnosis or after surgery is still considered the most important prognostic factor, the long-term oncologic outcome in breast cancer

Download English Version:

<https://daneshyari.com/en/article/8831022>

Download Persian Version:

<https://daneshyari.com/article/8831022>

[Daneshyari.com](https://daneshyari.com)