

Radiologic Findings of Microglandular Adenosis of the Breast mimicking Breast Carcinoma: Report of a Case

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Microglandular adenosis (MA) of the breast is a very rare and benign proliferative lesion, which may be confused with breast carcinoma clinically and pathologically. Several studies have reported a strong relationship between MA and carcinoma arising in MA, so the mass should be excised completely rather than observation. A 49-year-old woman incidentally found suspicious malignant lesions in both breasts on screening mammography. Breast ultrasonography revealed bilateral irregular shaped hypoechoic masses with spiculated margins. The results of core needle biopsy were MA in left breast and DCIS in right breast. Due to radiologic-pathologic discordance for the lesion in left breast, we performed additional breast MRI and second look-ultrasound with repeated biopsy. The result of a core needle biopsy was again MA, and eventually confirmed by excision. We report this case of MA, which mimics breast carcinoma radiologically.

Index words: Breast, Microglandular adenosis, Mammography, MR imaging, Ultrasound

Introduction

Microglandular adenosis (MA) of the breast is an extremely rare, benign lesion. Histologically, small round glands lacking a myoepithelial layer infiltrates normal stroma which makes it difficult to distinguish from well-differentiated breast cancer. Breast carcinoma arising in MA has been reported up to 27%, so although it is known as a benign lesion without local spread or metastasis, complete excision is recommended based on a core needle biopsy (1-4). Herein, we report a case of MA which mimics invasive carcinoma on radiologic imaging. To our knowledge, this is the first case of MA confused with carcinoma reported in the radiologic lit-

erature.

Case Report

A 49-year-old female incidentally found abnormal bilateral breast masses on screening mammography. The masses were non-palpable, and no nipple discharge, dimpling or skin changes were noted. A 3.2 × 3.5 cm spiculated irregular hyperdense mass with architectural distortion in the upper central portion of right breast was seen on mammography. A 1.3 × 1.5 cm spiculated irregular hyperdense mass was seen in left breast on mammography. On breast ultrasound, a spiculated irregular hypoechoic lesion was seen at 12 o'clock in right breast and another spiculated irregular lesion was seen at 12 o'clock in left breast (Fig. 1A and 1B). We performed core needle biopsies to rule out breast cancer. The result was ductal carcinoma in situ (DCIS) in right breast and microglandular adenosis (MA) in left breast.

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However, we considered the mass in left breast as highly suggestive of malignancy, therefore, we performed breast magnetic resonance imaging (MRI) and second-look ultrasound. MRI showed a spiculated irregular mass with homogeneous enhancement and using computer-aided detection (CAD), color mapping of red within the mass suggested a delayed washout pattern at right breast which correlated with DCIS on core needle biopsy (Fig. 2A). Another spiculated irregular shaped mass at 12 o'clock in left breast showed homogeneous enhancement with a delayed washout pattern using CAD (Fig. 2B). Core needle biopsy under sonographic guidance was repeated in the left breast to establish a definitive histological diagnosis because of radiologic-pathologic discordance. Pathological examination was again consistent with MA. Breast conserving surgery

was performed in right breast and surgical excision was performed in left breast. Invasive ductal carcinoma in the background of adenosis was diagnosed in right breast. The excised mass of left breast was done. Microscopic findings revealed many small glands infiltrating the fibrous stroma and the glands were regular, small, and lined by a single epithelial cell layer, and negative for estrogen receptor (Fig. 3). Final pathologic diagnosis was only microglandular adenosis.

Discussion

Microglandular adenosis is a very rare benign proliferative glandular lesion that may be confused with carcinoma clinically and pathologically. On macroscopic examination, it is mostly ill-defined infiltrative mass mea-

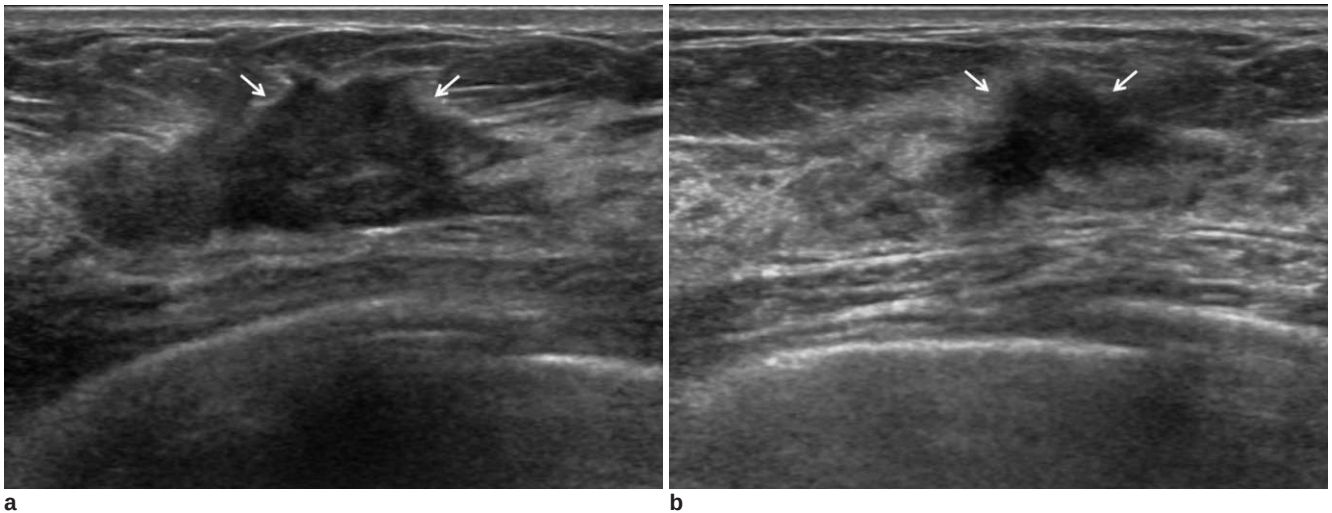


Fig. 1. (a) Breast sonography shows a spiculated irregular hypoechoic mass at 12 o'clock in right breast. (b) In left breast, there is a hypoechoic mass with well irregular shape and spiculated margin.

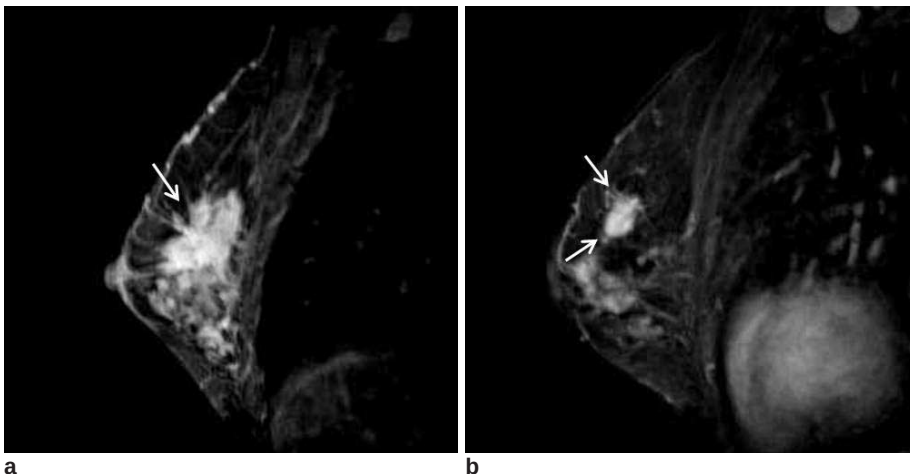


Fig. 2. (a) Dynamic, sagittal, T1-weighted image with contrast enhancement shows a 4.4 cm irregular shaped spiculated mass at 12 o'clock in right breast. (b) In left breast, there is 1.5 cm irregular spiculated mass at 12 o'clock in left breast.

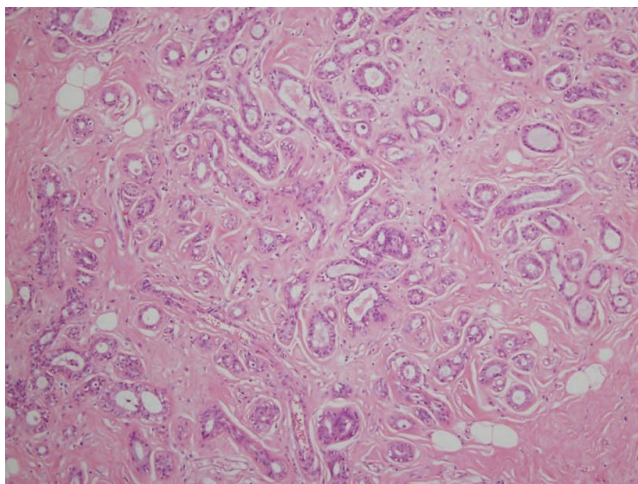


Fig. 3. Microscopic findings of microglandular adenosis. Infiltrating round glands lacking a myoepithelial layer are seen with luminal eosinophilic secretions. The glands are regular and small, and are lined by single epithelial layer (Hematoxylin and eosin, original magnification $\times 40$).

suring 3 or 4 cm, and occasionally multifocality and largest lesion measured as 20 cm has been reported. The age of patients range from 28 to 82 years, with majority being 45-55 years and clinically it may present as a palpable mass or may be an incidental finding (5).

Histopathologically, it is characterized by a poorly circumscribed proliferation of small glandular structures with non-lobulocentric infiltration in fibrous or fatty mammary stroma and lined by a simple type of epithelial cells. It is unique that it lacks myoepithelial cells, a hallmark of benignity in proliferative lesions, and may be confused with carcinoma on the basis of its aggressive histological feature (6-9). However, the absence of stromal desmoplasia and the presence of thickened basement membrane help distinguish MA from carcinoma (7). Moreover, its characteristic infiltrative growth pattern, aggressive local spread or metastasis has not been observed, so is classified as a benign proliferative lesion (10). Although in its uncomplicated form MA has been considered benign, several reports have described as a spectrum of glandular proliferations ranging from uncomplicated MA to atypical MA and carcinoma arising in MA (4, 5, 8, 11, 12). A recent study reported a high percentage (64%) of carcinoma arising in MA (12).

In this study, the radiology of MA correlated well with pathological feature. The irregular morphology with spiculated margin at breast mammography, ultrasound and MRI paralleled well with infiltrative appearance at

pathological examination. It is well-known that breast carcinomas usually show contrast enhancement on breast MRI; however, enhancement has also been reported in approximately 30% of proliferative dysplasia or adenosis. In contrast to carcinomas, proliferative dysplasia exhibit intermediate diffuse or focal enhancement with delayed signal increase. This pattern of enhancement, however, does not always allow exclusion of malignancy because 10% of invasive neoplasm may exhibit this pattern. Moreover, rarely washout or rim enhancement is noticed in proliferative dysplasia (13). In this study, MA revealed homogeneous enhancement with a delayed washout pattern using CAD mimicking a breast malignant lesion. For these reasons, definitive histological diagnosis is always required.

Previous study reported mammographic findings of MA with increased density or calcifications, ill-defined hypoechoic on breast ultrasound stimulating breast cancer leading to a core needle biopsy (4). Another study reported radiological features of MA of the breast in a BRCA1 mutation carrier which mimic breast carcinoma, and suggested detection of certain rare benign proliferative breast disease such as MA should be considered in mutation carriers (15).

Although MA is a benign lesion, if it is not excised completely, it may recur and so the current management for MA is complete excision, and excised specimen should be sampled thoroughly to rule out the possibility of an associated carcinoma (14). Moreover, misdiagnosis of MA for other benign lesions may result in under-treatment, whereas misdiagnosing MA as invasive carcinoma results in over-treatment. Therefore, distinguishing MA from other benign or malignant lesions for appropriate management, radiological characterization and correct diagnosis with repeated core biopsy is very important in clinical practice.

In conclusion, MA of the breast is a very rare benign disease that mimics breast cancer clinically, radiologically and pathologically. A MA should be correctly diagnosed with radiological characterization and completely excised based on a core needle biopsy result because of its strong relationship with breast cancer.

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한글제목

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한글 제목, 이름, 소속 기입해 주세요

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유방의 미세관 선증은 임상적으로나 병리학적으로 유방암과 유사한 소견을 보일 수 있는 매우 드문 양성 증식성 병변이다. 이전의 몇몇 연구에서 미세관 선증과 미세관 선증에서 발생한 유방암으로 이어지는 연관성에 대해서 발표하였으며 따라서 미세관 선증을 포함하는 병리소견을 보이는 종괴는 완전 절제를 하여야 한다고 보고하였다. 49세 여자 환자가 선별 유방촬영술상 양측 유방에 경계가 불분명한 종괴를 주소로 내원하였다. 유방 초음파상 양측 유방에 경계가 불규칙한 모양의 침상형 경계를 보이는 종괴가 있었으며 조직검사 상 오른 쪽은 미세관 선증에서 발생한 유방의 관상피내암종으로 보고되었으며 왼쪽은 미세관 선증으로 보고되었다. 환자는 유방 자기공명영상을 시행하였으며 양측 유방에 있는 종괴 모두 전형적인 유방암의 소견을 보이고 있었다. 환자는 수술을 시행했으며 최종적으로 왼쪽 유방은 미세관 선증으로만 확진되었다. 저자들은 본 증례에서 유방암과 유사한 소견을 보일 수 있는 미세관 선증에 대하여 보고하고자 한다.

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