Breast hamartomas are rare benign breast neoplasms containing various tissues [1–4]. A myoid (muscular) hamartoma is a very rare subtype of hamartomas occurring in the presence of smooth muscle cells [1, 2]. Although a few reports described myoid hamartoma, they rarely introduced detailed sonographic findings of that lesion. We encountered a young patient with myoid hamartoma and presented the mammographic, sonographic, and histopathologic findings.

Case Report

A 28-year-old woman presented with a non-tender, movable mass in her left breast over the last several months. Her medical and family history was unremarkable. Upon physical examination, the mass was found to measure about 3 cm and located in the left upper outer quadrant. No abnormality was found in the overlying skin and no axillary lymphadenopathy. Her general condition was good.

A mammography was performed for the evaluation of the mass, and showed no definition due to the patient’s dense breast, but was suspected to show some bulging on the contour of the upper left portion of the breast (Fig. 1). On ultrasonography, this mass showed about a 4.2 × 2.5 cm sized isoechoic solid mass with a focal inhomogeneously low echoic portion. The mass revealed a parallel orientation and posterior acoustic enhancement, lobulated shape, focal angular and microlobulated margin, and increased vascularity in the peripheral region (Fig. 2). No abnormal lymphadenopathy was found on ultrasonography. We suspected this mass to be a fibroadenoma or phylloides tumor, and categorized it as 4a according to BIRADS (Breast Imaging Reporting and Data System) lexicon.

Fine needle aspiration biopsy and microscopic results suggested a ductal hyperplasia. The patient underwent a local excision under general anesthesia. The macroscopic appearance showed a partially encapsulated, rubbery pale yellow, solid mass without necrosis or hemorrhage. The histological findings indicated the presence of smooth muscle cells intermingled with lobular tissue, and a scanty amount of fibrous tissue; however, no remarkable adipose tissue was found. The immunochemistry results were positive for actin and SMMHC.
Fig. 1. Mammography Findings.
Craniocaudal (A), and mediolateral oblique (B) mammogram showed no remarkable mass shadow, except for a slightly bulging contour of the upper portion of the left breast on mediolateral oblique mammogram (white arrow).

Fig. 2. Ultrasonographic Findings.
Longitudinal (A), transverse (B), and color Doppler (C) ultrasonogram revealed an isoechogenic solid mass with focal inhomogeneously low echogenicity (white arrow). The mass had a lobulated shape, focal angular and microlobulated margin (black arrows), as well as increased vascularity at the peripheral portion.
These findings were consistent with myoid hamartoma (Fig. 3). The patient was discharged without any complication or recurrence.

Discussion

Breast hamartomas make up about 0.7% of all benign breast lesions. The main clinical symptom includes a movable, non-tender palpable mass with gradual enlargement. Hamartomas contain adipose tissue, mammary glands, myoid element, ducts, and fibrous tissue [1–4]. According to the ratio of fat to parenchymal tissue, hamartomas show various imaging features and have been described to resemble a ‘slice of sausage’ or a ‘cauliflower’ [3]. Some hamartomas were not visualized on mammography due to mass size or patients’ breast condition as in our case [1, 4].

Myoid hamartoma is a rare subtype of hamartoma [1, 2]. It was first described by Davies and Riddel in 1973 [5], and was characterized by the presence of smooth muscle cells. Several theories have been suggested regarding the origin of the myoid components, such as metaplastic proliferation of myoepithelium, muscle cells from stromal myofibroblasts, or local vessel walls. Another theory proposed the possibility of differentiation of a common stromal cell into the smooth muscle [1, 2, 4, 5].

On mammography, myoid hamartomas generally show a well-defined, hyperdense, or isodense mass, consistent with a benign tumor. Although USG revealed a well-defined, hypoechoic, solid mass, sometimes it showed a microlobulated margin and was categorized as a malignant lesion as in our case [1]. Moreover, our case indicated that the myoid hamartoma showed relatively homogeneous echogenicity, which was probably due to a high content ratio of muscle component without the adipose component. Previous reports indicated that my-
oid hamartomas showed similar USG finding with a fibroadenoma or a phylloides tumor [1, 3]. To the best of our knowledge, there is only one previous case report of MR findings of myoid hamartoma [5]. In that report, a muscular hamartoma showed intermediate signal intensity on T1 and T2 weighted images, as well as an early and significant rise of signal intensity on dynamic contrast enhancement [5].

Microscopically, the myoid hamartoma contained disorderly arranged smooth muscle cell and various amounts of adipose tissue, fibrous stroma, and distorted mammary lobules. The immunohistochemistry results were positive for smooth muscle actin, desmin, and vimentin, but negative for cytokeratin and S-100 protein [2, 6].

Local excision is the treatment of choice and the recurrence potential of the myoid hamartomas was not cleared [2]. To remove possibility of local recurrence, a clear cut margin was required. The prognosis of myoid hamartoma is suspected as accurate [1].

References
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