



## MYOID HAMARTOMA OF THE BREAST: A CASE REPORT

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### Summary

Breast hamartoma is an uncommon mass lesion made up of varying proportions of normal breast tissues. It involves between 0.7% to 5.0% of all benign breast tumors. A very uncommon variation of mammary hamartoma called myoid hamartoma is distinguished by the presence of smooth muscle cells in the stroma. We present a case of a myoid hamartoma of the breast with literature review.

KEYWORDS: *breast; histopathology; myoid hamartoma*

### INTRODUCTION

Breast hamartoma is a rare breast mass lesion occasionally associated with hereditary syndromes which exhibits aberrant proliferation of normal breast tissue components including ducts, lobules, stroma, and adipose tissue(1,2). Hamartomas predominantly occur in premenopausal women, although they can be found at any age(1). The exceedingly unusual variety known as myoid hamartoma, which was first identified by Davies and Riddell in 1973, is characterized by the presence of abundant smooth muscle cells that are histopathologically normal but irregularly and randomly dispersed within the stroma(3). There have only been around 50 occurrences of myoid hamartoma reported in the literature, mostly in case reports(3-13). The true incidence of this tumor is unknown. In general, it is believed that the myoepithelium, stromal myofibroblasts, blood vessel walls or stromal stem cells are the sources of the smooth muscle component in myoid hamartomas(4-6,10). The prevalence of myoid hamartomas has been predicted to rise with the implemen-

tation of routine breast cancer screening programs, so greater knowledge of this uncommon condition is necessary to reduce the risk of pathological misdiagnosis. To minimize confusion when diagnosing benign spindle cell tumors and tumor-like lesions, including myoid hamartoma, excisional biopsies and immunohistochemical analysis are sometimes needed(14). In this article, we describe a case of myoid hamartoma in a young patient.

### CASE REPORT

A 22-year-old woman sought medical help due to a mass in the left breast present for two years, which had recently grown a bit in size.

A 1.5 cm regular, indistinct hypoechoic mass was seen by ultrasound in the left breast (Figure 1A). Due to the lesion's tendency to grow, excision was performed.

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Figure 1. Breast ultrasonography revealed a 1.7-cm regular hypoechoic mass.

Grossly, the tumor was yellow-white, non-encapsulated and firm. Microscopically, the mass consisted of epithelial and stromal component. The epithelial component was made of ducts lined with epithelial and myoepithelial layer, focally showing usual ductal hyperplasia and apocrine metaplasia. The stroma was built of intersecting, normal-appearing fascicles of smooth muscle cells and interspersed adipocytes (Figure 2A and 2B). There were no atypia or necrosis. Immunohistochemically, smooth muscle cells were diffusely positive for SMA (Figure 2C) and there was focal expression of CD34, mainly in periductal stroma, while the foci of usual ductal hyperplasia showed heterogeneous CK5/6 staining (Figure 2D).

Histological and immunohistochemical findings supported the diagnosis of breast myoid hamartoma. Five months after the surgery, the patient was entirely healed with no tumor recurrence.

## DISCUSSION

Despite the development of diagnostic techniques including mammography, breast ultrasonography and core needle biopsy, breast hamartoma frequently goes undiagnosed(10).

Both clinicians and pathologists should be aware of this type of lesion and its characteristics since there has only been a small number of cases documented in the literature and more cases are anticipated in the future. This will help avoid making an incorrect diagnosis.

The pathogenesis of the myoid component in myoid hamartoma is still not entirely clear. The origin of smooth muscle stroma has been the subject of numerous theories, and it is believed that

myoepithelial cells, stromal myofibroblasts, vascular smooth muscle cells or stromal stem cells may all play a role(4-6,8,10,13). Myoid hamartomas may arise as leiomyomatous metaplasia of the myoepithelial cells, according to Rosen et al. (1). Clinically, the majority of myoid hamartomas are asymptomatic and are found via breast ultrasound or mammography(4,9). Myoid hamartoma manifests as a well-circumscribed, hard and movable nodular mass if it is clinically visible, and it is difficult to differentiate it from other benign breast tumors. Mammography and ultrasonography are not diagnostic, however, they can confirm the existence of a discrete solid mass, occasionally with intralesional heterogeneous density. Although they are rarely found, microcalcifications can be seen in older lesions(11).

Breast cancer cannot sometimes be entirely ruled out clinically in these patients. Mass excision and histological investigation were done in our case to determine the precise diagnosis. The relative proportions of glandular, adipose, fibrous, and myomatous tissue influence the myoid hamartoma's histological appearance. Myoid hamartoma may be diagnosed with a core biopsy, however, excisional biopsy is recommended(4,6,9,11). The diagnosis is supported by immunohistochemical analysis. According to various reports, spindle tumor cells are positive for smooth muscle actin, desmin, and vimentin and negative for cytokeratins and S-100 protein(4-6,8-10,13). Progesterone and estrogen receptors can also be sporadically expressed(5,13). A number of spindle cell tumors and tumor-like lesions can come in differential diagnosis(5,9,10,13). Other than myoid hamartoma, the two most common myoid tumors of the breast are leiomyoma and leiomyosarcoma(14). Leiomyoma is ruled out by the lack of normal mammary lobules caught between smooth muscle bundles(5,10). Unlike leiomyomas, which only contain smooth muscle, myoid hamartomas also contain adipose tissue and disorganized duct and lobular structures. Myoid hamartoma lacks the malignant characteristics of leiomyosarcoma, such as nuclear atypia, mitotic activity, and necrosis(14). Myofibroblastoma and fibroadenoma can both exhibit myoid differentiation(14). Myoid hamartoma is differentiated from fibroadenoma by the lack of peri- or intra-canalicular growth pattern(5,10,13). Whereas adipose and glandular tissues are more noticeable in myoid hamartoma, smooth muscle cells make up the majority of the

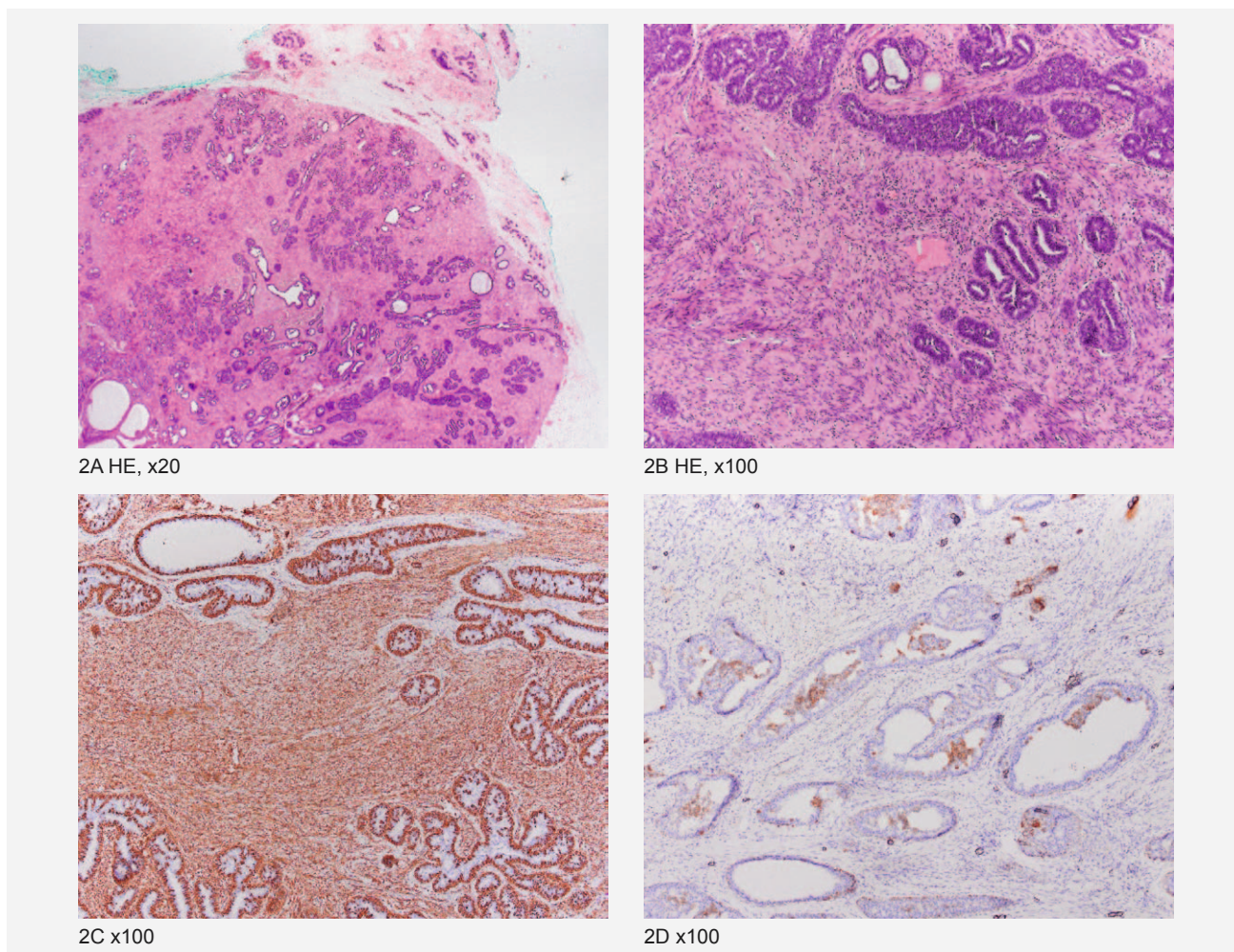


Figure 2. The tumor was microscopically well-circumscribed but unencapsulated, composed of disorganized ductal and lobular structures with foci of usual ductal hyperplasia and apocrine metaplasia (A, HE, x20). On a higher magnification, the stroma contained abundant myoid component; note the palisading of smooth muscle cell nuclei (B, HE, x100). Immunohistochemically, the presence of smooth muscle cells is shown by positive staining for SMA (C, x100). The epithelial component showed occasional usual ductal hyperplasia with heterogeneous staining for CK5/6 (D, x100).

tumor in leiomyomatous myofibroblastoma(14). Myoid hamartomas may resemble other breast tumors containing spindle cells, such as schwannoma and fibromatosis(5,10,13). The S-100 protein, which is absent in myoid hamartoma, is expressed in schwannomas and serves as a marker for their identification. In contrast to myoid hamartoma, fibromatosis has an infiltrative growth pattern and varied cellularity. Myoid hamartoma diagnosis can be challenging, especially on core biopsy, but precise myoid hamartoma identification is necessary to differentiate it from other breast lesions with recurrence potential or more aggressive behaviour(14). Myoid hamartoma is best

treated with local excision. Nonetheless, there are case reports(6,8,11) demonstrating coincidental malignancy or local recurrence following surgery. A local recurrence of the disease may be caused by incomplete excision(8). Myoid hamartoma should therefore be treated with full excision with clear margins. Following proper operation, there is no need for adjuvant therapy.

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#### Sažetak

#### MIOIDNI HAMARTOM DOJKE: PRIKAZ SLUČAJA

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Hamartom dojke je rijetka novotvorina koju čine različite proporcije normalnog tkiva dojke. Ona obuhvaća oko 0.7% do 5% svih benignih tumora dojke. Vrlo rijetka varijacija hamartoma dojke koja se zove mioidni hamartom razlikuje se patohistološki po prisutnosti glatkih mišićnih stanica u stromi tumora. Ovdje prezentiramo slučaj mioidnog hamartoma dojke sa pregledom literature.

**KLJUČNE RIJEČI:** *dojka; histopatologija; mioidni hamartom*