INTRODUCTION

Vascular tumors of the breast are uncommon and include angiosarcomas, angiolipomas, and hemangiomas. Most are diagnosed as angiosarcomas, and benign hemangiomas of the breast are rare. Breast hemangiomas are found in 1.2% of mastectomy specimens and 11% of postmortem specimens of the female breast (1). And there are only a few reports about image findings of breast hemangioma, especially about morphologic change on follow-up study. Here, we report a case of benign cavernous hemangioma of the breast that increased size on follow-up ultrasonography.

CASE REPORT

A 68-year-old female presented to our hospital for abnormality on outside mammography. She has been treated for hypertension, hyperlipidemia, and hypothyroidism. She denied palpable breast mass and any other symptoms. She was in menopause, but did not take any oral contraceptives or exogenous hormones, except levothyroxine. She had no family history of breast cancer. On physical examination, there was no palpable mass on both breasts.

Sonography revealed a 0.9 cm size, oval shape, circumscribed margin, equal density nodule in left breast 6 o'clock direction (Fig. 1A).

Digital mammography revealed a 0.8 cm size, oval shape, circumscribed margin, equal density nodule in left breast 6 o'clock direction (Fig. 1A).

Here, we report a case of benign cavernous hemangioma of the breast that increased size on follow-up ultrasonography.

Index terms
Breast
Hemangioma
Ultrasonography
Breast Cavernous Hemangioma with Increased Size

8 months, she revisited to our hospital for palpable mass on left breast. And physical examination revealed a 1.3 × 0.8 cm sized, irregular shape, hard, and palpable mass without tenderness in the left breast 6 o’clock direction. Follow-up sonography was done and revealed that the mass on left breast 6 o’clock direction increased in size, from 0.9 cm to 1.4 cm with similar morphology (Fig. 1D). Because the mass was a palpable lesion and increased size on follow-up sonography, we categorized this lesion as ACR-BI-RADS category 4a. We performed surgical excision. The mass composed of large vessels with cystically dilated lumen and thin walls on hematoxylin-eosin stain (Fig. 1E, F). And final histological diagnosis was cavernous hemangioma.

DISCUSSION

Hemangioma is a rare benign vascular tumor of the breast. Hemangioma can be found at any age and is mainly diagnosed in women between 19–82 years old. And it has been reported that hemangioma is associated with administration of estrogens, suggesting a possible influence of female hormones on its development (2).

According to Rosen, localized hemangiomas are classified into 4 groups by its origins: perilobular, parenchymal, nonparenchymal or subcutaneous, and venous hemangioma (3). Also, hemangiomas are divided into 2 common types (capillary or cavernous), depending on the size of the vessels involved (4).

Most of the breast cavernous hemangioma appeared as a superficially located oval shape, equal density, circumscribed or microlobulated mass on mammography. And hemangioma may contain calcifications (including phleboliths), but the presence of calcification is uncommon and the amount of calcification is variable. These findings are not sufficiently specific for a
definite diagnosis and consequently a significant number probably are classified as BI-RADS category 3 (4, 5).

And common sonographic finding of a breast hemangioma is superficially located, oval shape mass with circumscribed margin. The internal echogenicity of hemangioma is variable; 1/3 display a hyperechoic echotexture and other 2/3 display an isoechoic to the fat, hypoechoic, or complex cystic and solid echotexture. This variable echogenicity may be related to the presence of multiple small vascular channels seen pathologically in hemangiomas (large blood-filled spaces or sinuses in cavernous hemangiomas). Therefore, echogenicity is not a reliable distinguishing feature, and it may be difficult to differentiate from other benign tumors, such as fibroadenoma or complex cyst (4, 5). Our case locates in superficial fat layer and shows a circumscribed, oval shape, heterogeneous echogenic mass. And it also contains internal coarse calcification on mammography.

The MR imaging features vary depending on the possibility of internal thrombosis. They usually appear as an oval mass with circumscribed margin that is isointense on T1-weighted images and hyperintense on T2-weighted images. On dynamic gadolinium-enhanced MR images, breast hemangioma shows peripheral arterial enhancement with delayed central filling enhancement, indicating slow flow within the capillary hemangioma (4, 6).

It is difficult to distinguish benign vascular tumors from malignancy by imaging modality. Angiosarcomas can be well-defined or ill-defined masses with mixed echotexture (7). Giovannorio et al. (8) were able to distinguish between benign and malignant lesions of the skin and subcutaneous focal lesion on the basis of different patterns of vascularity. They reported a sensitivity of 100% and a specificity of 90% for hypovascularity in benign lesions and a sensitivity and specificity of 90% and 100%, respectively, for hypervascularity in malignant lesions. But our case shows high vascularity on color Doppler exam.

On PET-CT scan, breast hemangiomas usually show either absent or low fludeoxyglucose (FDG) uptake. However, a case of hemangioma with increased 18F-FDG uptake (mimicking malignancy) has also been reported. Blood retention in the hemangioma results in focal ischemia and may accelerate anaerobic glycolysis, leading to high FDG uptake (9, 10).

Diagnosis of hemangioma is based on histopathologic evaluation. Core biopsy may be used to confirm the diagnosis, and excessive bleeding during core biopsy may be a clue. But, complete excision as opposed to imaging follow-up is controversial. Complete excision is recommended because it can exclude the possibility of an underlying angiosarcoma and avoid progression to angiosarcoma. However, Mesurolle et al. (5) proposed the possibility of following superficially located breast lesions with a diagnosis of hemangioma on core biopsy if imaging features were also concordant with a benign etiology. Because the incidence of angiosarcoma is extremely low, progression of hemangiomas to angiosarcoma is extremely rare. Then, excision should be considered when the imaging or pathologic features are not classic, to exclude the possibility of angiosarcoma (4, 5).

Our case was done only follow-up sonography, because the lesion was categorized as BI-RADS category 3 with possibility of hemangioma on initial mammography and sonography. But the mass increased in size on follow-up sonography with clinical symptom. It was very unusual feature, compared with other breast hemangiomas. Because most of breast hemangioma rarely manifests as palpable lesion (7). And also, the lesion increased in size on follow-up study. So, we performed excision to exclude possibility of malignancy.

In summary, we reported a benign cavernous hemangioma of the breast, with clinically palpable mass and increased size on follow-up ultrasonography.

REFERENCES

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초음파에서 크기가 증가한 유방 해면상 혈관종: 증례 보고

김광민 · 김지영* · 김성희 · 정명자 · 김수현 · 김재형 · 배경은 · 이지혜 · 강미진 · 김태규

유방의 해면상 혈관종은 매우 드문 양성 혈관 종양이다. 임상증상은 보통 만져지지 않는 종괴로, 영상검사에서 우연히 발견되는 경우가 많다. 유방 혈관종은 대개 초음파에서 표재성에 위치한 타원형의 경계가 분명한 종괴로 보이나, 그 외의 다양한 형태도 보일 수 있어, 수술 전에 이를 영상 검사만으로 진단하는 것은 쉽지 않다. 이에 저자는 만져지는 유방 종괴를 호소하는 68세 여자에서, 추적 초음파 검사에서 그 크기가 증가한 해면상 혈관종 증례를 보고하고자 한다.

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