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Fibromatosis of the breast mimicking an abscess: case report of unusual sonographic features ☆

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ABSTRACT

Fibromatosis of the breast, also known as a desmoid tumor, is extremely rare and most often appears as an aggressive lesion mimicking breast carcinoma. It lacks metastatic potential but can grow aggressively in a localized area. Ultrasonography often shows an irregular spiculated hypoechoic mass with posterior acoustic shadowing. We discuss a case of breast fibromatosis that presented as a painful palpable breast mass in a 32-year-old woman and mimicked an abscess in the sonogram. We found that this lesion displayed atypical sonographic features such as a heterogeneous echoic mass with an internal anechoic area.

1. Introduction

Fibromatosis of the breast, also referred to as a desmoid tumor, is a rare benign entity and is difficult to distinguish from breast carcinoma because it often mimics the clinical and radiological features of breast carcinoma [1,2]. Despite its lack of metastatic potential, fibromatosis can grow aggressively in a locally infiltrating pattern. Therefore, early recognition of this disease and wide local excision is important [3]. We report a case of breast fibromatosis, which had an unusual sonographic appearance, and mimicked an abscess.

2. Case Report

A 32-year-old obese woman complained of a palpable tender mass in the medial portion of her right breast for 2 weeks. On clinical breast examination, the mass was movable and hard without dimpling or retraction of the overlying skin. She had no specific clinical history or family history of breast cancer. She was unmarried and had never been pregnant.

Mammography showed that the breasts were almost entirely composed of fat and would be categorized as Breast Imaging Reporting and Data system (BI-RADS) type A, even though the patient was young. An irregular isodense focal asymmetry with a partially indistinct margin was noted in the lower inner quadrant of the right breast, at the palpable area of concern. There was no associated abnormal calcification or architectural distortion (Fig. 1). Diagnostic mammography such as a spot compression view would have been helpful in further characterizing the finding. Unfortunately, it was not performed because the patient resolutely refused to undergo additional mammography due to severe pain.

Subsequent sonographic evaluation showed a homogeneous background echotexture with a fatty breast as we expected and revealed an irregular shaped mass of size 3.5×1.0×1.5 cm with an indistinct margin in the 3 o'clock direction of the right breast, 15 cm from the nipple. The mass showed a heterogeneous echotexture with hyperechoic, hypoechoic, and central anechoic areas. Involvement of the retromammary fat or pectoralis muscle was not noted. Color Doppler sonography showed increased focal intralesional vascularity (Fig. 2). We presumed that the central irregular anechoic portion was the necrotic cavity and performed ultrasound-guided needle aspiration using an 18-gauge needle and a 10-cc syringe (Fig. 3A). However, nothing was aspirated through the needle. Therefore, malignancy was suspected and the mass was categorized as a BI-RADS type 4, which required a biopsy.

Histological examination following sonography-guided core needle biopsy using a 14-gauge needle (Fig. 3B) indicated the possibility of a stromal tumor. Therefore, the patient underwent wide local excision of the lesion. The final histopathological findings were consistent with fibromatosis, showing proliferation of bland spindle-shaped fibroblastic cells arranged in ill-defined fascicles and positivity for β-catenin immunostaining. The lesion had an infiltrative border and had invaded adjacent fatty tissues with a considerable amount of entrapped adipose tissue and breast parenchyma (Fig. 4). There were no areas of cystic, hyaline, or myxoid degeneration. All surgical margins were negative. No

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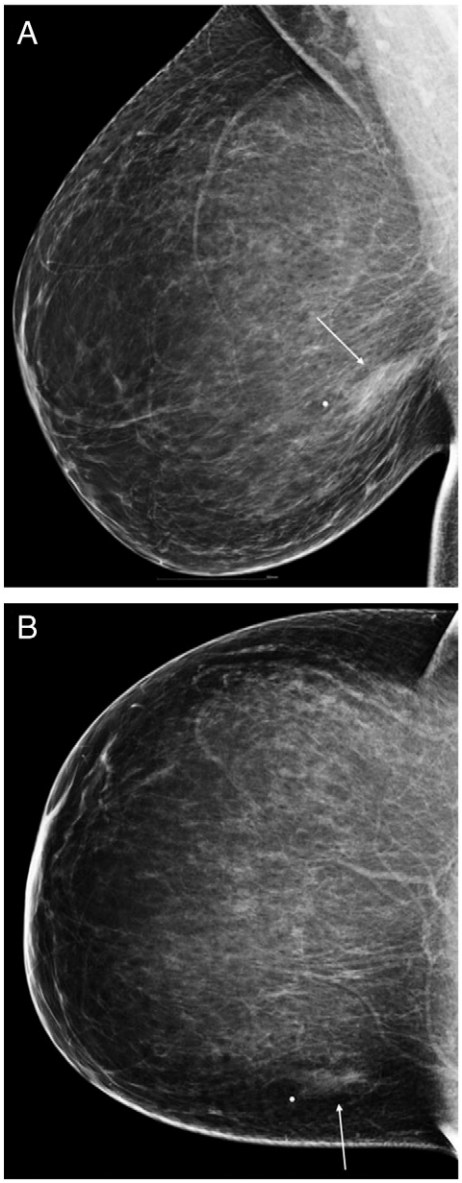

Fig. 1. The mediolateral oblique (A) and craniocaudal (B) mammograms show an entirely fatty breast and an irregular isodense focal asymmetry (arrow in A and B) with a partially indistinct margin in the right lower inner quadrant at the palpable area of concern, as designated by a radiopaque marker.

progression or tumor recurrence was detected during 17 months of sonographic follow-up postsurgery.

3. Discussion

Fibromatosis can occur at various locations in the body and typically arises from muscle, fascia, and aponeuroses. It occurs commonly in the abdominal wall or in the chest wall and extremities [4]. Fibromatosis of the breast is extremely rare, constituting less than 0.2% of all breast tumors [1]. Although it is a benign entity without metastatic potential, fibromatosis can grow aggressively in a locally infiltrating pattern [3].

Gardner's syndrome, familial multicentric fibromatosis, incidental and surgical trauma, and silicone implants are reportedly associated with fibromatosis of the breast, but the etiology of this lesion is still not understood [5]. In the published literature, patient ages range from 13 to 83 years. Most cases occur in young, premenopausal women and presented clinically as firm, painless, movable masses, occasionally with skin retraction or dimpling [5,6]. The characteristic

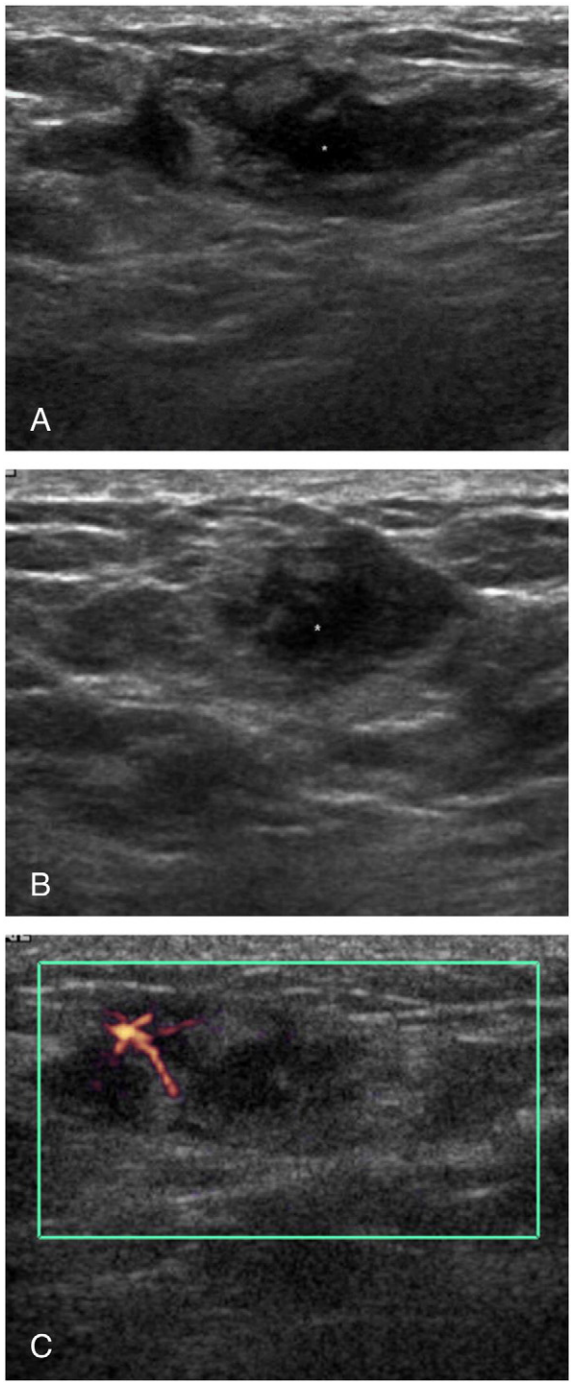

Fig. 2. Transverse (A) and longitudinal (B) ultrasonography images show a 3.5×1.0 cm heterogeneous echoic mass with an internal anechoic portion (asterisk in A and B) predominantly located in the subcutaneous fat layer, abutting the medial end of the breast parenchyma. The color Doppler image (C) demonstrates increased focal intralesional vascularity.

mammography findings are irregular, spiculated, noncalcified, hyperdense masses with suspected malignancy [2]. In sonograms, fibromatosis typically appears as a solid spiculated or irregular microlobulated hypoechoic mass, although unusual benign-like sonographic findings, such as well-defined hypoechoic nodules or heterogeneous hyperechoic nodules with posterior acoustic shadowing, have also been reported [1,6,7].

In our case, fibromatosis presented as an irregular indistinct heterogeneous echoic mass with a central anechoic portion and mimicked a breast abscess in the sonogram. Marked tenderness on examination