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Case Report

Fibromatosis of the breast in a male patient ☆

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ABSTRACT

Fibromatosis of the breast is a rare soft tissue lesion that arises from the mammary tissue or the pectoral fascia. We present a case of fibromatosis in a 39-year-old male patient who developed a right lateral breast mass in several weeks without prior trauma or surgery. Ultrasound-guided core needle biopsy findings included differential diagnoses of nodular fasciitis and fibromatosis. The patient was referred to a breast surgeon and underwent excisional biopsy. Final pathology report confirmed fibromatosis. The patient tolerated the surgery well and will continue to follow up post-operatively for recurrence.

Introduction

Fibromatosis, or desmoid tumor of the breast, represents proliferation of myofibroblasts and fibroblasts that can be either a local indolent disease or a local infiltrative lesion. The exact cause of this benign breast lesion is unknown, although it is associated with Gardner's syndrome, familial adenomatous polyposis (FAP), previous trauma, surgery, or silicone implant [1].

Fibromatosis of the breast is exceedingly rare, with a reported manifestation of only 0.2% of all breast tumors [2]. Amongst the reported cases, women are diagnosed twice as often compared to men, which raises the question of hormonal influence [2]. Immunohistochemically, β-Catenin has been found to be a specific marker associated with breast desmoid type fibromatosis, that shows nuclear expression in sporadic and familial cases in up to 80% of patients [3]. The combination of positive β-Catenin and negative CD34 markers are supportive of a fibromatosis diagnosis [2,4].

On physical examination and imaging, fibromatosis can mimic malignancy. The traditional treatment is surgical resection, although the rate of recurrence has been reported to be as high as 29% [5]. We report a rare case of an adult male patient with fibromatosis of the breast that was treated with surgical excision.

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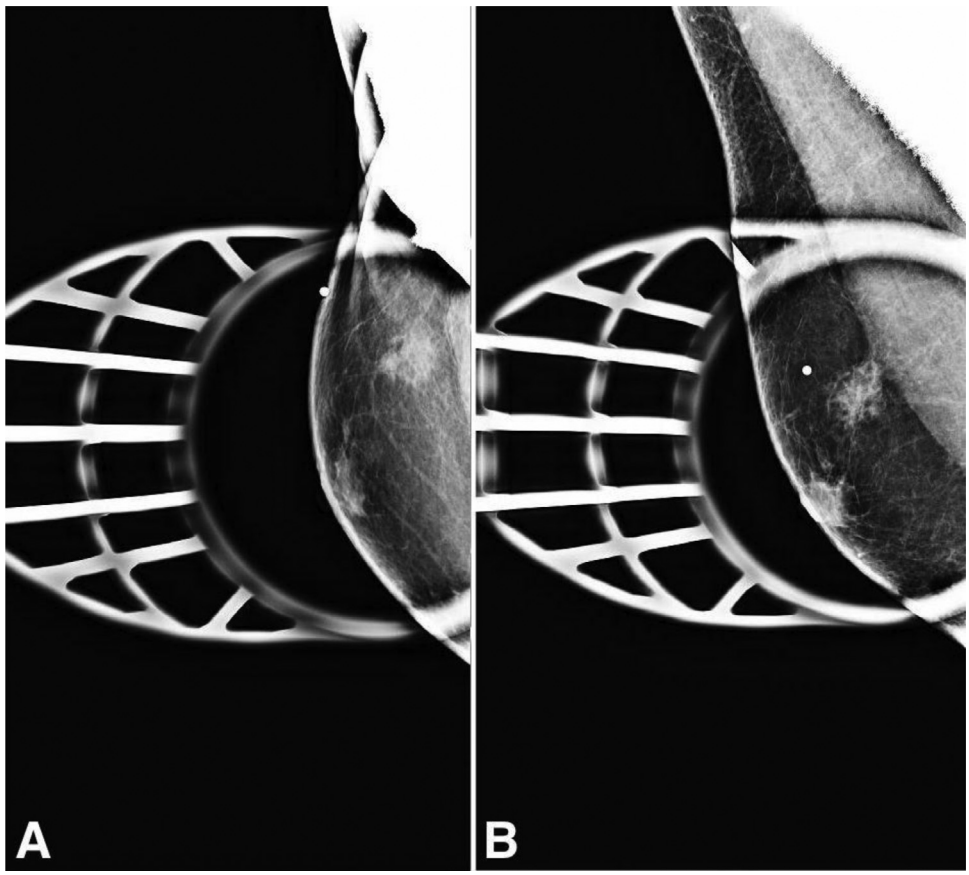

Fig. 1 – Craniocaudal (A) and mediolateral oblique (B) spot compression views demonstrated a 1.7 cm mass in the posterior depth lateral superior right breast. Gynecomastia is also noted.

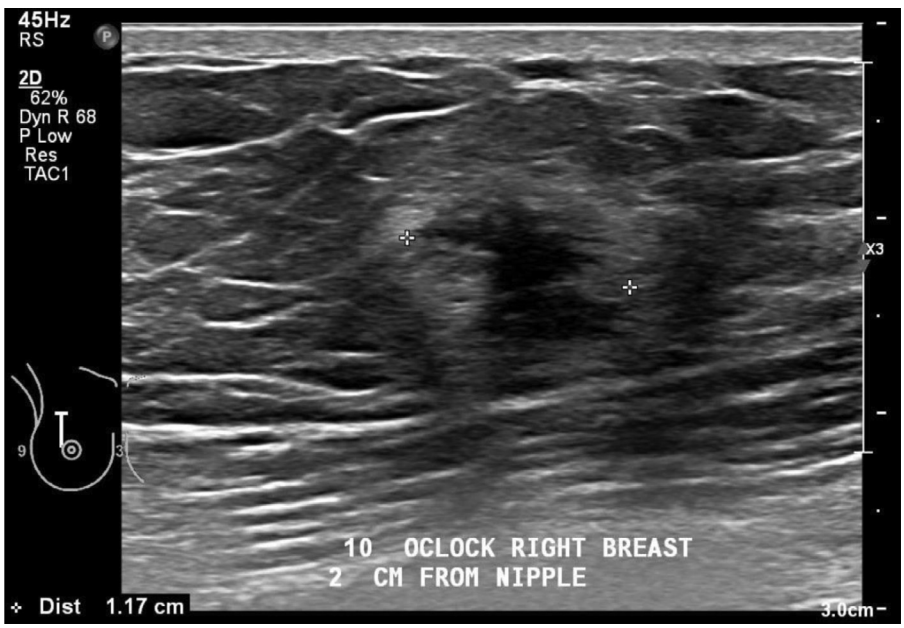

Fig. 2 – Right breast ultrasound showed a 1.2 cm hypoechoic mass with hyperechoic rim, together measuring up to 1.7 cm, at the 10-o'clock position 2 cm from the nipple, which correlates with the diagnostic mammographic finding.

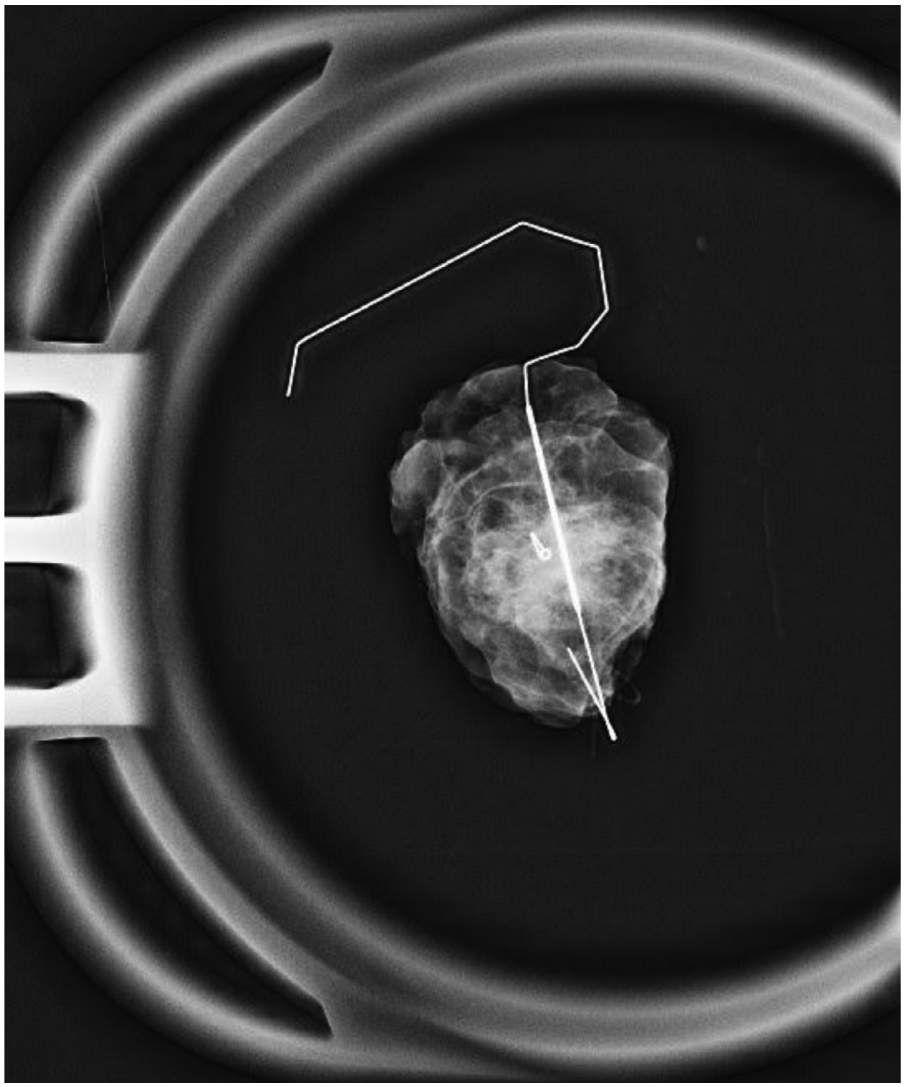

Fig. 3 – Intraoperative specimen radiograph showed complete excision of the right breast mass, embedded biopsy clip and localization wire.

Case presentation

A 39-year-old male patient was referred to our breast center who developed a palpable right lateral breast mass in several weeks. The patient did not have a history of trauma or surgery in the right breast, or family history of breast or ovarian cancer. He does not have any personal or family history of Gardner's syndrome or FAP. Diagnostic mammogram showed mild bilateral gynecomastia and a 1.7 cm irregular mass in the posterior depth slightly superior lateral right breast (Fig. 1). Subsequent right breast ultrasound demonstrated a 1.2 cm hypoechoic irregular mass with hyperechoic rim, together measuring 1.7 cm, at the 10-o'clock position 2 cm from the nipple (Fig. 2). Additionally, ultrasound of the right axilla showed a lymph node with eccentric cortical thickening. The right breast mass underwent core needle biopsy with post-biopsy placement of a clip. Fine needle aspiration of the right axillary lymph node was also performed. Post-procedural mammogram demonstrated the biopsy clip within the mass seen on mammography.

The core needle biopsy revealed proliferation of myofibroblast within a myxoedematous stroma, and focal fat necrosis and rare foci of hemosiderin are present. The differential diagnoses included fibromatosis, although the histologic features were more consistent with nodular fasciitis. Immunohistochemical markers were positive for SMA and desmin and negative for pankeratin, OSCAR, CD34, and S100. Fine needle aspiration of the right axillary lymph node was negative for malignancy.

The patient was then referred to a breast surgeon. Options were discussed and the patient elected to proceed with surgical excision. On the day of the surgery, ultrasound-guided wire localization of the breast mass and methylene blue dye injection were performed preoperatively, and mammogram confirmed optimal wire placement. Subsequently, the patient was transferred to the operating room for breast mass excision under monitored anesthesia care. An intraoperative specimen

radiograph showed excision of the targeted mass with the embedded biopsy site clip and intact biopsy guidance wire (Fig. 3). The patient tolerated the excision well with no complications.

Surgical pathology of the specimen confirmed fibromatosis. Pathology results and management of the fibromatosis was discussed at multidisciplinary breast tumor board, and observation was recommended. Genetics testing was not recommended. Follow-up breast ultrasound at 6 months and 1 year showed no recurrence of the mass.

Discussion

Mammary fibromatosis affects patients of all ages and is much more commonly seen in female patients [5], with an incidence rate as low as 0.2% of all breast tumors [6]. A literature search showed that there have been only 8 reported cases of male breast fibromatosis [5,7–11,3]. Diagnosis and treatment can therefore be especially challenging in afflicted male patients given the rarity of the condition. Therefore, our case report significantly increases the incidence of this rare condition and reaffirms similar presentations, findings, and management.

As described by available literature, our patient also presented with a palpable right breast mass, which commonly has the differential diagnoses of gynecomastia and breast cancer. Further imaging showed suspicious features such as irregular shape and indistinct margins on both mammogram and ultrasound. However, the core biopsy findings were non-malignant. This posed a diagnostic challenge as this could have been interpreted as either discordant with imaging due to inadequate sampling, or as concordant with imaging as fibromatosis is known to mimic malignancy on imaging. Due to the presence of equivocal findings, we believe that the suspicion of fibromatosis should be raised. Contrast-enhanced diagnostic mammography was not done due to nonavailability/non-capability at our institution. Breast MRI was not done since the ACR indications criteria were not met and there was no suspicious abnormality on the contralateral breast or other areas of the ipsilateral breast. Genetics testing was not done since the patient does not have a personal or family history of Gardner's syndrome or FAP. We should subsequently refer the patient for surgical consultation with the goal of a definitive diagnosis and clear treatment plan regardless of the core biopsy findings.

Treatment for fibromatosis is typically surgical excision with wide margins. It is important to assess whether the lesion extends beyond the surgical margins on histopathology, as fibromatosis is locally aggressive, and recurrences have been associated with positive surgical margins [12]. For our case, 6-month and 1-year follow-up breast ultrasounds show no evidence of recurrence. The patient will be followed for up to 3 years, as existing literature shows that most recurrences happen within this time frame [12].

Patient consent

The authors whose names are listed above certify that formal consent was not required as we used entirely anonymized images from which the individual cannot be identified. Additionally, the patient's names, initials, social security numbers, dates of birth or other personal or identifying information was not used or mentioned anywhere in the manuscript.

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