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Mammary Fibromatosis In A Male Breast

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Abstract

Fibromatosis of the breast is a relatively benign, though locally invasive neoplasm. It is rare and difficult to diagnose. Risk of recurrence is there if it was inadequately excised. The best treatment is local wide excision with negative margins. We report a 46-year old gentleman with mammary fibromatosis. To the best of our knowledge, there are only few cases reported on male breast fibromatosis. The optimal management of it is unknown because of the rarity of the disease.

Keywords
Fibromatosis, excision, margins

Introduction

Mammary fibromatosis is a rare disease. It accounts for less than 0.2% of all primary breast lesions(1). Although several series of this condition have been reported in women, mammary fibromatosis in men is extremely rare(2, 3). It is a relatively benign, though locally invasive neoplasm. It is usually misdiagnosed as breast carcinoma preoperatively. A review of the literature indicated that differentiation of fibromatosis from carcinoma is very difficult by radiological examination(4).

We report the case of a 46-year-old gentleman with mammary fibromatosis. To the best of our knowledge, there are only few cases reported on male breast fibromatosis. The optimal management of it is unknown because of the rarity of the disease.

Case Report

We present a 46-year old gentleman who had a history of left chest wall trauma during fishing one week prior to his presentation. He presented with left breast mass. He has no family history of breast cancer. He is otherwise healthy man apart of back problems due to disc prolapse. Clinical examination revealed no evidence of cervical or axillary lymphadenopathy. A palpable 7x7cm firm mass was noted, centrally located. The mass was mobile and not fixed to underlying muscle or overlying skin.

The patient was investigated with bilateral mammography and ultrasound scan of the breast. This showed a central irregular soft tissue density measuring 3.5x1.6cm; the mass was labeled as BIRADS 5. MRI breasts also showed a central irregular enhancing mass measuring 4.8x3.6x3.3cm, the mass is abutting the muscle but a nice line of cleavage is noted posteriorly between them (Figure 1).

Fine needle aspiration cytology (Figure 2) was reviewed at Kuwait Cancer Control Center showing smears of spindle cells singly and loose clusters along with stromal fragments. The cells showed moderate pleomorphism with hyperchromatic nuclei having prominent nucleoli. Mitosis is seen. There appears to be a malignant tumor. In the absence of immunostains it is not possible to categorize it. The cytologist’s impression was atypical spindle cell tumor.
The patient underwent a wide local excision of the mass under general anesthesia. During removal of the mass off the muscle, it was noted that it was infiltrating the pectoral muscle and looked adherent to it in a localized area. A rim of muscle in that area was removed en-bloc. The final histopathological examination revealed a firm grey white lesion measuring 5x3x4.6 cm. The lesion had free gross margins (Figure 3).

Microscopic examination showed a poorly circumscribed lesion composed of spindle shaped cells with bland nuclear chromatin separated by variable amounts of collagen fibers (Figure 4). Mitosis is rare. Mononuclear inflammatory cells were noted throughout the lesion. The cells exhibit positive immunostaining with vimentin. Focally positive immunostaining with SMA, and negative with CD34 and factor 13 alpha. ER and PR staining were negative. Proliferation index assessed by Ki67 immunostaining is <1%. All surgical margins are free. Diagnosis was made as benign spindle cell lesion consistent with fibromatosis.

**Discussion**

Fibromatosis is an infiltrative proliferation of fibroblastic and myofibroblastic cells with significant risk for local recurrence but has no metastatic potential. It originates mainly from the fascia or aponeuroses of the abdominal wall muscles or from the muscles of the shoulders and pelvic girdle. 

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Figure 2: Fine needle aspiration cytology showing smears of spindle cells singly and loose clusters along with stromal fragments. The cells showed moderate pleomorphism with hyperchromatic nuclei.

Figure 3: Histopathological examination revealed a firm grey white lesion measuring 5x3x4.6 cm with grossly free margins, favoring a borderline malignant tumor.

Core biopsy was done confirming a benign looking spindle cell lesion with very low proliferative index. No breast epithelial structure was seen. The tumor cells show no evidence of reaction to CD34, CD56 and S100.

The patient had CT scan of the chest showing a tiny peripheral lung nodule and multiple sclerotic lesions noted in both femoral heads, metastases could not be ruled out. Hence, bone scan was performed and showed no evidence of skeletal metastasis.

18F-FDG PET/CT whole body scan showed a hypermetabolic lesion in the left breast measuring 4.9x2.4x4.2 cm with increased FDG uptake max SUV3.2.
Mammary fibromatosis presents macroscopically as a dense, poorly vascularized, hard, rubbery, and grayish-white mass, and histologically described as a dense collagenous material with intertwining bundles of spindle cells and lacking epithelial components. These tumors do not metastasize, have no capsule, infiltrate into local structures, have normal mitotic characteristics, and frequently recur after attempted surgical excision (6).

The extra-abdominal sites most commonly involved are the chest wall, shoulder girdle, inguinal region and neck. Whether breast involvement is an extension from a primary site within the fibroaponeurotic fascia or the pectoral muscle or whether it results from fibroblasts originating from within the breast parenchyma is undetermined. Both mammary and extramammary fibromatosis display similar morphology but extramammary lesions display a higher propensity for local recurrence compared to mammary fibromatosis (7).

Mammary fibromatosis accounts for 4% of extra-abdominal fibromatosis cases (8). The etiology of mammary fibromatosis is still a subject of debate. Trauma, particularly surgical trauma has been emphasized as an etiological factor. Since fibromatosis is an infiltrative proliferation of fibroblastic and myofibroblastic cells, the positivity for vimentin and smooth muscle was not surprising.

Although 30% of extramammary fibromatosis are positive for estrogen receptors, the consistent absence of immunoreactivity for estrogen and progesterone receptors in mammary fibromatosis was noted. A positive reaction for these receptors in spindle cell neoplasms of the breast might be helpful in excluding fibromatosis from its differential diagnoses (9).

Wide local excision with clear margins has been the primary surgical modality for fibromatosis and the initial treatment of choice despite high local recurrence. However, due to the rarity of fibromatosis, there are no randomized controlled trials, and surgical treatment is most often dependent upon the tumor location and size, which influences the potential for a complete surgical resection (8). Other modalities of treatment, such as radiotherapy, hormonal agents, anti-inflammatory agents and cytotoxic agents may be used in patients with unresectable tumors or tumors that would require extensive resection, including chest wall resection (10).

Conclusions

We reported a case demonstrating that fibromatosis in the male breast may have features and presentation which can be confused with breast cancer. The presence of an unusual breast mass with a history that does not correlate with routine diagnostic measures, fibromatosis should be considered as part of the differential diagnosis. Review of literature indicated that differentiation of fibromatosis from carcinoma is very difficult radiologically. Although wide local excision appears to be adequate in the majority of patients reported in the literature, the infiltrative nature of fibromatosis necessitates documentation of tissue margins in order to avoid the possibility of recurrence.
References


