Case Report

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Surgery Section

Myofibroblastoma of Female Breast Masquerading as Schirrous Malignancy–A Rare Case Report with Review of Literature

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ABSTRACT

Myofibroblastoma is a rare benign mesenchymal tumour of the breast commonly reported in males. It is a spindle cell neoplasm exhibiting myofibroblastic differentiation with characteristic immunohistochemical staining. Herein, we present a case of myofibroblastoma in a premenopausal female which was mimicking like malignancy clinically. Lump was growing rapidly in size measuring 8 cm x 6 cm and stony hard in consistency. Mammogram showed a large homogeneous hyperdense lump suggestive of fibroadenoma, Hamartoma and fibromatosis. FNAC and trucut biopsy of mass could not be done due to stony hard consistency. Hence excision biopsy was done. Histopathological examination revealed the tumour as myofibroblastoma. Immunohistochemical staining for markers of myofibroblasts like CD-34 and Vimentin showed strong positivity. A negative expression for cytokeratin was noted. This case is presented for its rarity, unusual clinical presentation and stony hard consistency.

Keywords: Myofibroblastoma Mesenchymal tumours CD 34 Vimentin

CASE REPORT

A 45-year-old premenopausal women came to our surgical Out Patient Department(OPD) with left breast lump of 6-months duration. Lump was non tender, stony hard and freely mobile occupying the lower outer quadrant of left breast. No family history of breast cancer. Differential diagnosis of fibromatosis, myofibroblastoma and scirrhous carcinoma were given due to its stony hard consistency. Swelling was growing rapidly measuring 8 x 6 cm in size without any nipple discharge or retraction. Axillary lymphnodes were not palpable. Mammogram showed a large homogeneous hyperdense lump measuring 8 x 6 cm suggestive of fibroadenoma, Hamartoma and fibromatosis. FNAC and biopsy could not be done as the hardness of the breast mass did not allow the needle penetration. Hence we proceeded with excision biopsy under general anaesthesia.

Grossly lump was well circumscribed, unencapsulated lobular hard mass with pushing borders. Cut-surface showed homogeneous lobulated whitish lump [Table/Fig-1]. Microscopic examination showed fascicles of uniform spindle cells forming whorls occasionally [Table/Fig-2]. Cells were separated by bands of hyalinised collagen, infrequent mitotic figures and entrapped adipocytes [Table/Fig-3]. No epithelial elements were seen. A diagnosis of myofibroblastoma was given considering clinical, microscopic and radiological features. Immunohistochemical staining showed diffuse strong positivity for CD34, Vimentin [Table/Fig-4,5]. Cytokeratin immunostaining showed a negative expression. Immunohistochemistry helped us to confirm our diagnosis and in ruling out spindle cell carcinoma (metaplastic carcinoma) of breast.

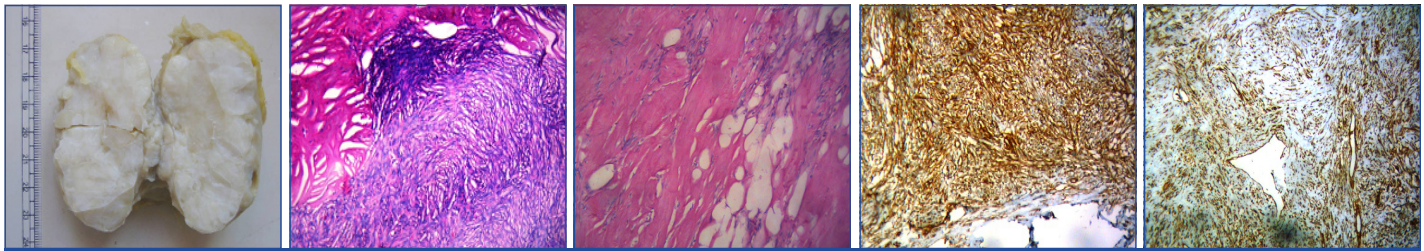
Patient had an uneventful postoperative period and was discharged on the second postoperative day. She was advised for regular follow up. Two years of follow-up till now showed no recurrence or metastasis.

DISCUSSION

Myofibroblastoma is a rare benign spindle cell neoplasm of breast. About 80 cases have been reported in literature [1]. Though commonly reported in males, incidence is now found to be equal in both the sexes. It is essential to diagnose and distinguish myofibroblastoma from other spindle cell tumours for deciding the exact line of management.

The term 'myofibroblastoma' was first described by Wargotz in 1987 [2]. It is an uncommon tumour composed of bland looking spindle cells showing myofibroblastic differentiation. It presents often as a solitary mobile painless mass with a well circumscribed margins. Average size of the tumour is 1 to 4 cm but can reach larger dimensions [3,4].Incidence of mammary myofibroblastoma is found to be more in elderly age group of both the sexes. Other common sites of occurence are skin, soft tissue and lymphnode.

Myofibroblastoma appears as a solid homogeneous well circumscribed hypoechoic mass devoid of calcification in mammogram [5]. Grossly lump is homogeneous solid well



[Table/Fig-1]: Gross photograph shows lobulated homogeneous neoplasm with pushing borders **[Table/Fig-2]:** Photomicrograph shows benign spindle cells arranged in whorls and fascicles. (H & E, 100x) **[Table/Fig-3]:** Shows dense collagen and entrapped adipocytes (H & E, 100x) **[Table/Fig-4]:** Photomicrograph shows diffuse Vimentin positivity of spindle cells. (H & E, 100x) **[Table/Fig-5]:** Photomicrograph shows CD 34 positivity of spindle cells (H & E, 100x)

circumscribed with foci of mucoid and lipomatous changes. Cystic change, hemorrhage and necrosis are rarely seen. Fine needle aspiration cytology is often helpful in giving a preoperative diagnosis [6].

Diagnostic histopathological and cytological features of myofibroblastoma are fascicles and whorls of spindle cells with benign oval nucleus. Hyalinised collagen bundles with interspersed spindle cells, adipocytes and mast cells is seen predominantly. Neoplasm may not show epithelial elements, atypical mitosis or necrosis. Foci of cartilaginous, osseous, myomatous and lipomatous change can also be seen. Mast cells can be seen in the stroma. Histomorphological variants are epitheloid, fibrous, deciduoid, cellular, collagenised, lipomatous, myxoid, infilterative myofibroblastoma [7]. It is necessary to recognize and pinpoint these variants to avoid diagnostic dilemma. An infiltrating myofibroblastoma has a invasive growth pattern with entrapped fat and glands and it mimics a malignancy and fibromatosis [7]. In our case FNAC and trucut biopsy could not be done due to stony hard consistency. Large cellular myofibroblastoma with epitheloid appearance can mimic metaplastic carcinoma and has to be confirmed by immunohisto chemistry [8].

Our closest differential diagnosis is fibromatosis which resembles myofibroblastoma clinically and histologically. Fibromatosis is solid, locally aggressive, locally recurrent mass and is negative for CD34. Other differential diagnosis to be considered are phyllodes tumour, nodular fasciitis, le. omyoma, schwannoma, spindle cell lipoma, sarcoma, pseudo angiomatous stromal hyperplasia, solitary fibrous tumour, Dermato Fibrosarcoma Protruberans [9]. Myofibroblastoma should be distinguished from Spindle cell carcinoma, malignant fibrous histiocytoma and metaplastic carcinoma with the help of ancilliary techniques.

Myofibroblastomas are strongly immunoreactive for Vimentin, CD34, Desmin, Smooth Muscle Actin, fibronectin, type IV collagen. Weakly reactive for S-100, estrogen receptor, progesterone receptor and negative for Cytokeratin, Ki- 67 [10-12].

Cytogenetic studies revealed a specific chromosomal rearrangement 13q14 in myofibroblastoma. Similar genetic change is also reported in solitary fibrous tumour and spindle cell lipoma showing a relationship between these tumours [13,14].

Surgical excision of lump is the treatment of choice. Taccagni et al., reported the recurrence of myofibroblastoma along with pleura pulmonary metastasis after one month and diagnosed it as myofibrosarcoma of breast [15]. Close follow-up is advised in such cases [15]. In our case recurrence or metastasis is not seen after two years of follow up.

CONCLUSION

Myofibroblastoma is a rare benign stromal tumour of breast. It is essential to diagnose myofibroblastoma as it behaves in a benign fashion and excision biopsy is usually adequate. In some cases it may mimic a malignant stromal tumour and has to be confirmed using immunohistochemistry. Myofibroblastoma show strong positivity for Vimentin, CD34 & Desmin whereas spindle cell carcinoma (metaplastic carcinoma) show positivity for cytokeratin and Ki 67. Close follow is advised to look for any recurrence. Breast lumps with spindle cell morphology should be diagnosed with the help of clinical, radiological, cytological findings and should be correlated with immunohistochemical features for confirmation.

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