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Case Report

Myofibroblastoma of the male breast: incidental diagnosis of a rare entity

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ABSTRACT

Myofibroblastoma of the breast is a benign tumor originated from mesenquimal cells with a very low incidence in breast pathology. Only 80 cases were reported until 2018. Eight histological patterns were described and may mimic a number of other breast diseases. A 55-years old male was diagnosed with an incidental left breast nodule. An ultrasonography with biopsy showed a 27 mm nodule compatible with myofibroblastoma. We performed a lumpectomy via modified Benelli technique. Surgery was curative and the only necessary treatment. Myofibroblastoma could be misdiagnosed and clinical differential diagnosis includes other benign and malignant breast lesions. In the setting of a diagnosis, histology may be confusing as myofibroblastoma may exhibit a wide spectrum of histological features that defines 8 variants. These subgroups can mimic malignant lesions in their histological pattern. Definitive diagnosis depends on histopathological and immunochemical results. Physicians must be aware about heterogeneity in morphological and immunochemical aspects of myofibroblastoma and his variants, as they can lead to erroneous management of the lesion. Surgery is important for a definitive and accurate diagnosis, excluding malignancy and relieving the burden of a close image-based surveillance.

Keywords: Myofibroblastoma, Breast, Mesenquimal, Surgery, Lumpectomy, Benign, Tumor

INTRODUCTION

Myofibroblastoma of the breast (MFB) is a benign tumor originated from mesenquimal cells with a very low incidence in breast pathology. Only 80 cases were reported until 2018.[1]

The etiology remains controversial and prevalence seems to be higher in older men and postmenopausal women.[2-5] Furthermore, there is a correlation with ginecomasty.

Eight histological patterns were described: collagenized/fibrous, cellular, lipomatous, infiltrative, myxoid, epitheloid, atypical and deciduoid-like variant.[6,7] These patterns may mimic a number of other breast diseases the clinician must be aware of.

We present a case of incidental diagnosis of myofibroblastoma to highlight this entity as a diagnostic challenge to the physician remembering that different histological patterns can mislead to a different diagnosis, with different approaches in terms of treatment.

CASE REPORT

A 55-years old male was diagnosed with an incidental left breast nodule after a thoracic computerized tomography requested in a pneumology consultation (Figures 1 and 2).

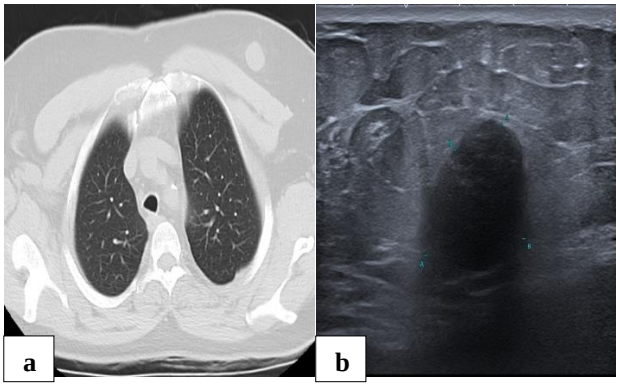

Figure 1: Imagiologic findings (a) CT scan and (b) ultrasonography tumor expression.

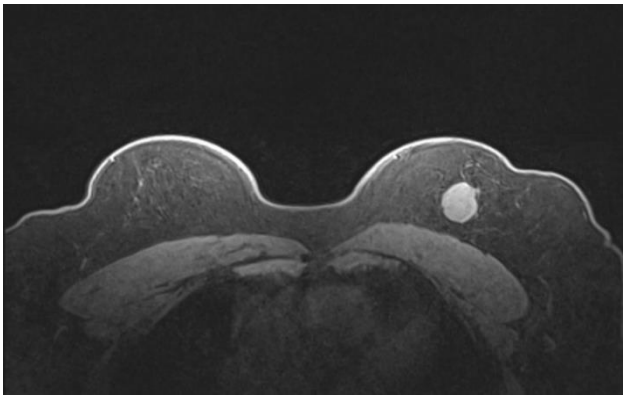

Figure 2: Magnetic resonance imaging of the tumor.

The patient has arterial hypertension, dyslipidemia, diabetes mellitus type 2, asthma, obstructive sleep apnea, history of alcoholism, obesity and first-degree relatives with lung and thyroid cancer. No symptoms were reported by the patient. Physical exam revealed a palpable lesion in left breast upper-inner-quadrant, bilateral gynecomastia and no palpable axillary nodes. An ultrasonography with biopsy and magnetic resonance were performed and showed a 27 mm nodule, well-limited, no suspicious signs. Histopathology with immunochemistry testing diagnosed a myofibroblastoma. Blood analysis showed no alterations.

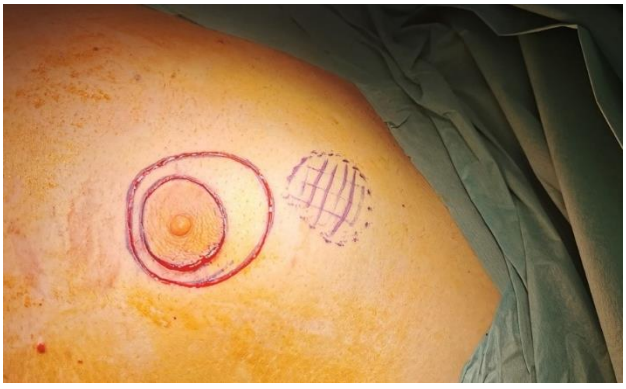

Figure 3: Modified Benelli pattern and tumor site marking.

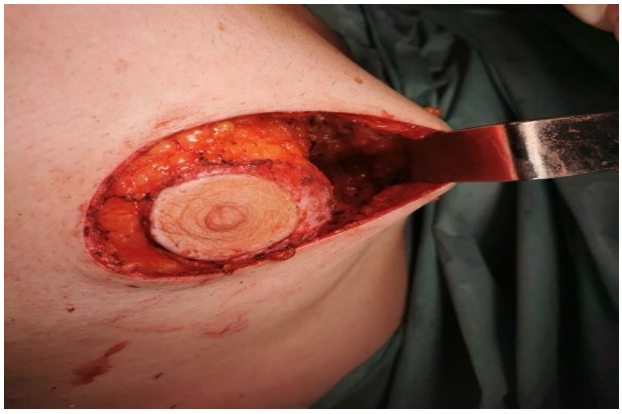

Figure 4: Round-block/Benelli approach.

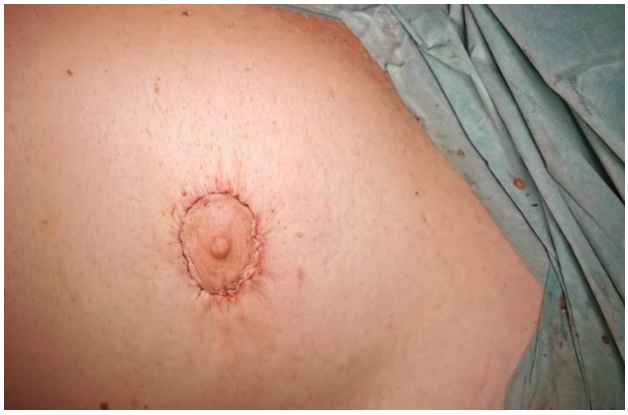

Figure 5: Immediate post-operative result (superior lateral view).

We performed a surgical approach by lumpectomy via modified Benelli technique for better exposure, closure and aesthetic purpose. The procedure was uneventful, closure with a subcuticular-running suture and we choose not to place any drain (Figures 3-5).

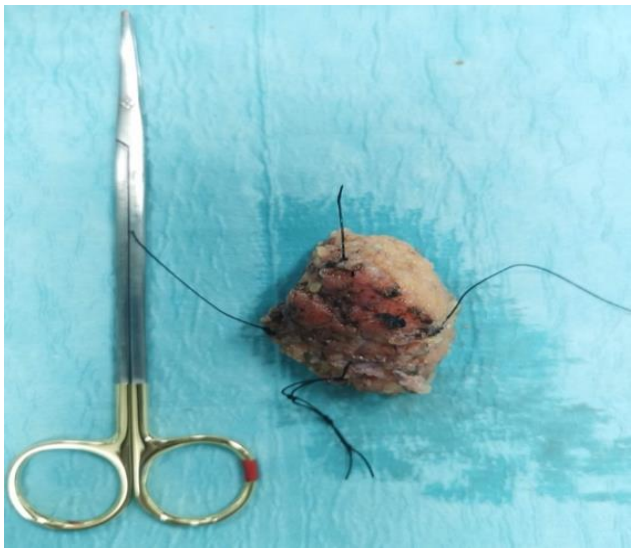

Figure 6: Surgical specimen.

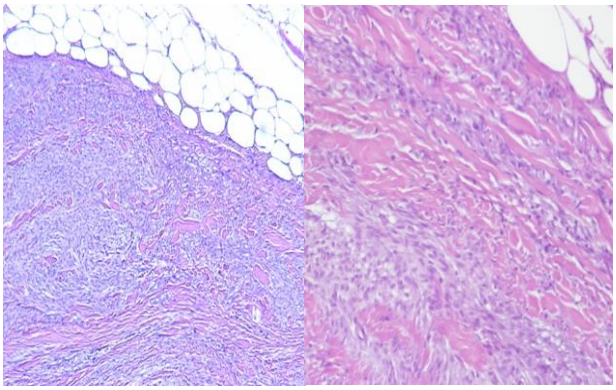

Figure 7: Histological view of a well-defined tumor (left) and spindle-shaped mesenquimal cells with hyalinized collagen bands between bundle organization (right).

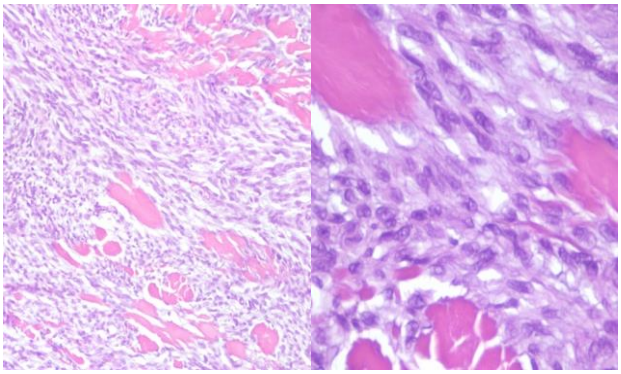

Figure 8: Histological view of spindle-shaped mesenquimal cell short bundles with hyalinized collagen bands (100x and 400x magnification).

Specimen was 40 mm long with a 25 mm nodule and histological pattern revealed a spindle-shaped mesenquimal cell proliferation, well circumscribed, no infiltrative aspects and free margins. Immunochemistry exam showed positivity for vimentin, desmine and CD34 which confirmed myofibroblastoma as the final diagnosis (Figures 6-8).

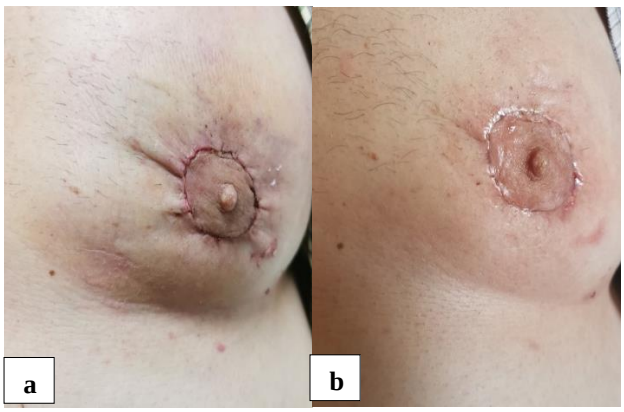

Figure 9: (a) One week and (b) three-week post-surgery.

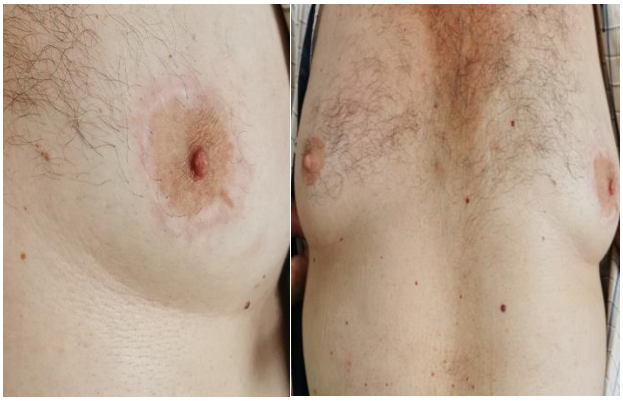

Figure 10: 7 months post-surgery.

Surgery was curative and the only necessary treatment in this context and no adjuvant therapies were indicated. The procedure was performed as outpatient regime and the surgical team also ensured wound treatment after discharge from the center. This led to a close follow-up and photo registry in week 1, week 3 and month 7 (Figures 9 and 10).

Our follow-up consultation regimen includes only physical exam in this case, with no alterations so far in 1 year follow up.

DISCUSSION

In last 4 years more cases of MFB have been reported likely due to image-screening increase (mammary and non-mammary diagnostic purposes).

MFB definitive diagnosis depends on histopathological confirmation after specimen sampling analysis and immunochemistry positive for vimentin, desmin and CD34.

It could be misdiagnosed and clinical differential diagnosis includes other benign breast lesions as leiomyoma, hematoma, abscess, neurofibroma, lymphangioma and fibroadenoma and malignant tumors such as sarcoma, lymphoma, malignant fibrous histiocytoma, and phyllodes tumor.[8]

Recent literature exposed MFB of the breast as part of an heterogeneous group of tumors that may exhibit a wide spectrum of histological features including myxoedematous and lipomatous changes, deciduoid morphology, collagenized areas with pseudoangiomatous stromal hyperplasia, cellular areas with focal cytological atypia, cartilaginous differentiation and an infiltrative growth pattern.[9,10] This point is important as these MFB variants could lead to diagnostic confusion with a wide variety of benign and malignant lesions. As an example, epitheloid variant of MFB could be misdiagnosed as an invasive lobular carcinoma, lipomatous and mixoid variant could mimic a lipo/mixossarcoma, deciduoid-like variant can masquerade an apocrine carcinoma.[11]

CONCLUSION

In conclusion, the key to success in these situations stands not only with a rigorous teamwork but mostly with physician awareness about heterogeneity in morphological and immunochemical aspects of MFB variants, his differential diagnosis and subsequently how to manage each pathology. The surgeon/physician should provide a meticulous anamnesis and physical exam, radiologists should bring detailed imaging interpretations, interventionists sample the lesions by percutaneous biopsies in a way that pathologists can work with histological exam, adding immunochemistry when there is high probability of misdiagnosis.

In our point-of-view, surgery brings advantages in terms of definitive and accurate diagnosis by providing a resected specimen and thus excluding malignancy. Furthermore, it relieves the burden of a close control imaging of these lesions in surveillance-only regimens.

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Ethical approval: Not required

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