Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Obstetric Gynecology

Primary Non-Hodgkin's Lymphoma of the Breast: A Rare Case of Breast Location

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DOI: 10.36347/sjmcr.2022.v10i12.005 | **Received:** 13.10.2022 | **Accepted:** 18.11.2022 | **Published:** 04.12.2022

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Abstract | **Case Report**

Primary malignant lymphomas of the breast are rare, it represents less than 0.5% of all breast cancers. In this work we report an observation of primary non-Hodgkin malignant lymphoma of the breast with a review of the literature of epidemiological, clinical, histological and therapeutic aspects. Their clinical presentation is diverse. Imaging is non-specific, which can resemble all other types of breast cancer. The diagnosis can be evoked on cytological examination, its confirmation is always histological. The occurrence of non-Hodgkin malignant lymphoma requires a rigorous assessment of extension in the search for other primary localizations. Prognosis and treatment are similar to those of other lymphomatosis localizations.

Keywords: Breast cancer, lymphomas of the breast, breast tumor, cancer treatment

Abreviations: MNHL (malignant non-Hodgkin lymphoma), NHL (non-Hodgkin lymphoma).

INTRODUCTION

Breast localization of malignant non-Hodgkin lymphoma (LMNH) is rare. It represents only 0.4 to 0.52% of malignant mammary tumors [3]. Primary breast involvement is rare, it represents less than 0.5% of all breast cancers [1, 2].

In this work, we report a case of malignant non-Hodgkin lymphoma of the breast of a patient of our formation, recalling the diagnostic and therapeutic modalities.

CASE REPORT

This is a 41-year-old, non-menopausal patient with a history of a lumpectomy of the left breast 03 years ago, concluding that there was a benign lesion without signs of malignancy, who came for a nodule of the left breast gradually evolving for three months.

The clinical examination finds a patient in good condition with a nodule of the left breast of 6×5 cm at the junction of the upper quadrants with infiltration of the skin, mobile to the two planes (Image 1). The right breast is without abnormality and palpation of axillary hollows do not find lymphadenopathy. The somatic examination is without any particularity including no hepatomegaly or splenomegaly.

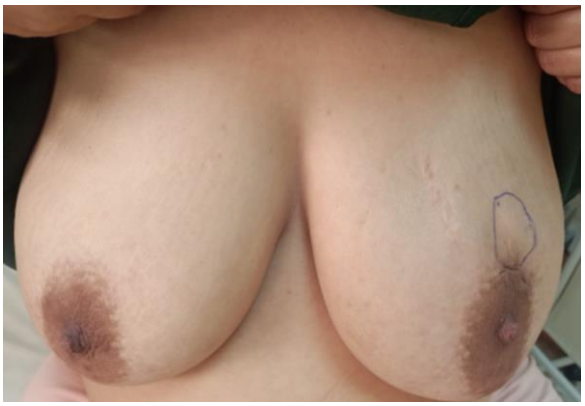

Image 1: Appearance of the breasts before chemotherapy

The mammography showed scattered lesions of the left breast, the largest of which were at the junction of the upper quadrants of 5×4 cm classified ACR 3 (Image 2 and 3).

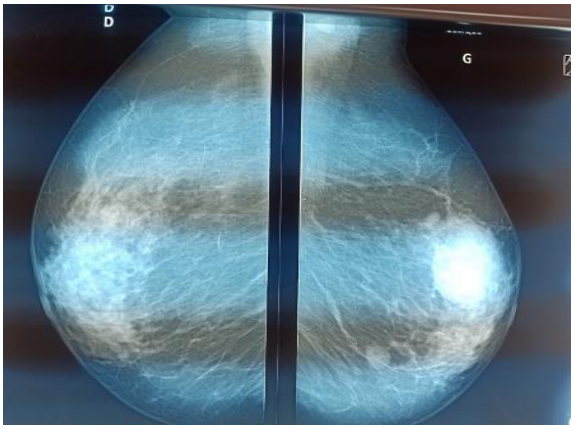

Image 2: Mammography, External oblique incidence: opacity of 4 cm of the left breast

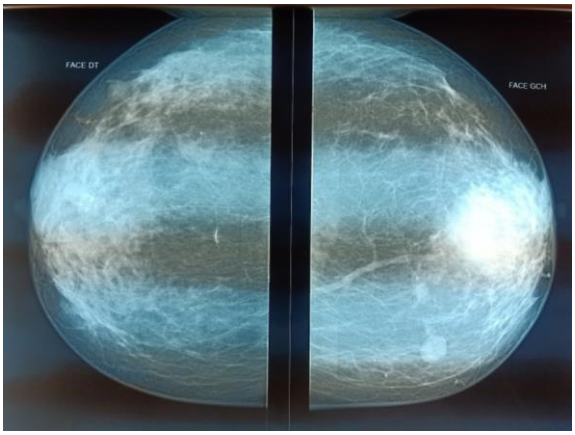

Image 3: Mammography, face incidence: opacity of 4cm diameter of the left breast poorly limited

The excision biopsy of the nodule was performed. The histological examination found an undifferentiated malignant tumor proliferation with round cells evoking firstly a lymphomatous origin (Image 4). At the immunohistochemical complement, tumor cells have a diffusé positivity to anti-CD20, anti-Bc16, anti-MUM1p (Image 5) and do not express anti-AE1/AE3, anti-C10, anti-CD5 marking, anti-BcL2, with a proliferation index of 50% (Image 6).

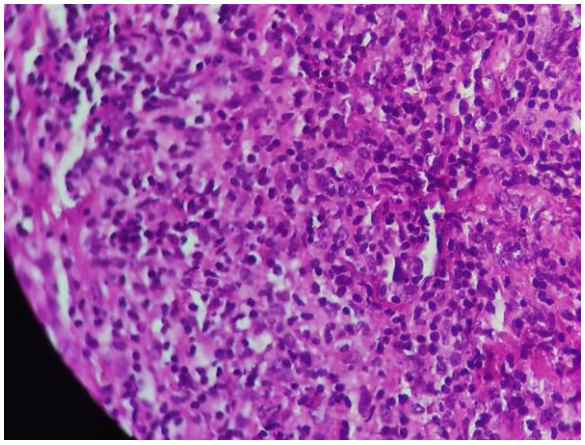

Image 4: Electronic microscopy HE×40

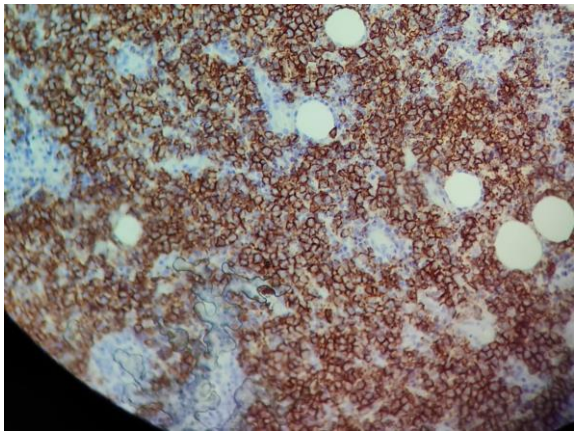

Image 5: Strong expressiveness of anti-CD20

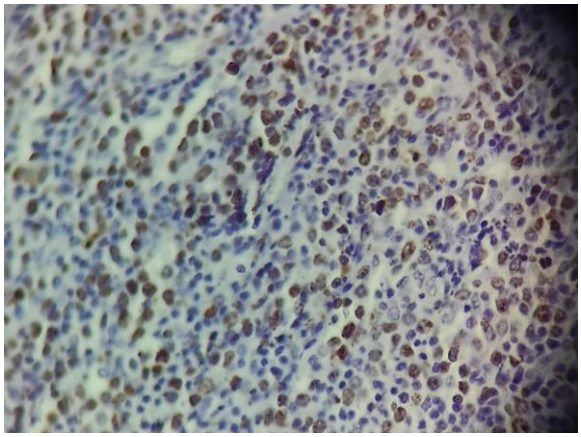

Image 6: 50% Ki67 Proliferation Index

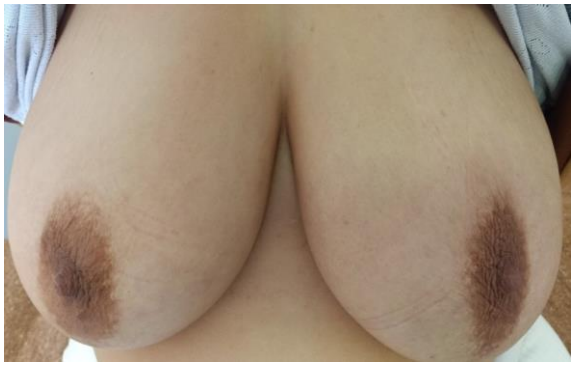

Image 7: Breast photography after treatment

This immunohistochemical profile was in favor of diffuse non-Hodgkin malignant lymphoma B (LMNH B) of high-grade malignancy of non-germinative type.

The extension assessment carried out by an PET-CT (Positron Emission Tomography) found a heterogeneous left mammary hypermetabolism quite diffuse and absence of hypermetabolism to the rest of the body. The treatment was made of chemotherapy based on Cyclophosphamide®, Doxorubicin®, Vincristine®, Prednisone®, Rituximab® and methotrexate®, the total number of treatments received was 08 taken every three weeks.

Complete remission was observed at 06 months of treatment with a control PET-CT finding no abnormality classified as a Deauville 1 score.

The progress four months after treatment is good with no clinical symptoms of recurrence (Image 7).

DISCUSSION

The prevalence of malignant non-Hodgkin's lymphoma of the breast is difficult to determine. It is estimated that primary breast lymphoma accounts for 2.2% of all extra-nodal lymphomas [2, 8]. Primary LMNH of the breast occurs most frequently between the fifth and sixth decade [8, 4]. Men are exceptionally affected [5]. The location of the lesions is more frequently in the upper quadrants of the breast. The right breast is more often affected [1, 6]. Bilateral involvement may be simultaneous (12%) or successive (6%) and is observed in 18% of cases [1, 8, 5]. The mode of revelation is almost always the development of a breast tumor [2, 8, 7]. Axillary adenopathy is found in 20-40% of cases [4, 6].

Several radiographic presentations of breast lymphoma exist. The most frequent mammographic appearance is very often that of a well-limited mass of homogeneous density with a benign appearance, suggestive of a cyst, a fibroadenoma or a phyllodes tumor. Sometimes it is a mastitis-like appearance with diffuse breast density increase, a mass with ill-defined contours or a mass with spiculated contours [2, 9]. Rarely, there is a suspicious appearance of malignancy, but there is never stellate opacity or microcalcifications [9].

On ultrasonography the presentation is not specific, most often as a homogeneous hypoechoic mass with sharp and regular contours as was the case in our patient, an ACR 3 mass. Rarely, a mastitis appearance is observed on ultrasound [10, 11]. The discrepancy between a worrying clinical picture and a reassuring mammographic aspect could lead to the diagnosis [1, 4, 9, 10]. Magnetic resonance imaging of the breast may be useful as a second line of investigation for multiple or bilateral lesions. The appearance on MRI is also aspecific in the literature. It is most often a nodule in discrete T1 hyposignal, which is surrounded in T2 by a hyperintense corona and which takes up gadolinium after injection [10]. The diagnosis is histological after microbiopsy or surgical biopsy [9, 12, 13]. The extemporaneous examination of the surgical specimen carries a high risk of error. In these situations, the use of immunohistochemistry makes it possible to make a decision in view of the absence of expression of epithelial markers (EMA, cytokeratin) and the immuno expression of lymphoid markers [10].

The primary nature of breast MNDL is based on clinical radiographic investigation. Secondary involvement of the breast during the natural course of MNDL is rare [11, 12].

The treatment of primary breast MNDL is similar to that of other lymphomatous localizations. Multiple protocols are proposed in the literature [1, 4, 10, 11, 13]. Currently, most authors recommend chemotherapy with Endoxan, Oncovin and Prednisone or combined with immunotherapy with anti-CD20 antibodies. The reference combination is Adriamycin, Cyclophosphamide, Vincristine and Prednisone [10, 12, 14, 15].

For high-grade or intermediate malignancy NHL, most authors recommend multidrug therapy alone. If the tumor is less than 5 cm in size, surgery is performed first. If the tumor is large, surgery may be preceded by neoadjuvant chemotherapy. When surgery is not possible, chemotherapy will be combined with radiotherapy. The prognosis of breast MNDL is particularly poor. The histological type of NHL and the clinical stage of the disease are the two main prognostic factors [9, 14].

CONCLUSION

Primary LMNH of the breast are rare. Their clinic is polymorphous and the medical imaging is aspecific. The diagnosis is made only after histological confirmation. The prognosis and treatment are similar to those of other lymphomatous localizations and depend mainly on the precocity of its introduction.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

Contributions of the Authors

All authors contributed to the management of the patient and to the drafting of the manuscript. The authors have read and approved the final version of the manuscript.

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