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Radiology

Non-Hodgkin Lymphoma of the Breast: Localization Exceptional to Know, Case Study and Literature Review

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Abstract **Case Report**

The mammary gland may be the site of a primary lymphoma or be invaded Secondary lymphoma of another organ. Involvement is usually unilatéral, more rarely bilatéral; primary or secondary, virtually the same varieties of lymphoma are observed. Most are B type lymphomas. Imaging is based on mammography and ultrasound, and more recently on MRI. Surgical removal is not indicated in the treatment of these lymphomas, which is essentially based on chemotherapy and immunotherapy.

Keywords: lymphoma, mammary gland, mammography, ultrasound.

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INTRODUCTION

Breast lymphoma, whether primary or secondary, is very rare, accounting for less than 0.5% of all malignant tumours of the mammary gland [5]. Secondary breast lymphomas occur more frequently in association with extra mammary non-Hodgkin's lymphomas. Primary breast lymphomas are less frequent, accounting for only 0.05 to 0.53% of all malignant tumours of the breast [7].

Imaging is based on mammography coupled with ultrasound, and more recently on magnetic resonance imaging, which is becoming increasingly important in the exploration of tumour pathology of the mammary gland.

CAS REPORT

A 77-year-old female patient was admitted to the dermatology department to assess the etiology of a mass on the right leg associated with multiple diffuse nodular skin lesions on the breast, which were rapidly growing in size. An ultrasound scan coupled with mammography was requested, revealing many masses and nodular formations of variable size and shape, with clean, sparsely-dense contours and areas of fatty density. On ultrasound, they had a heterogeneous hyperechoic echostructure, with hypoechoic areas of posterior enhancement, and were non-vascularized on color Doppler. A CAT scan was ordered, which revealed bilateral breast masses and nodules associated with a left lung mass, peritoneal nodules and tumour-like soft tissue. A breast biopsy was performed, along with a biopsy of the leg mass and skin nodules, and the result was in favour of a large-cell lymphoma of B phenotype.

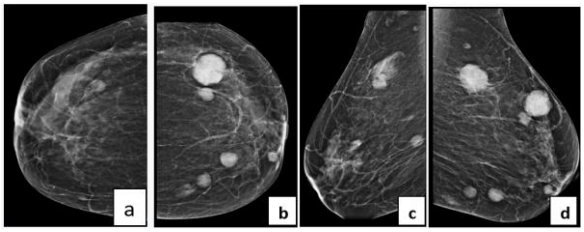

Fig. 1: ***Craniocaudal (a, b) and mediolateral oblique mammograms (c, d) of right (a, c) and left (b, d) Breast:*** **multiple masses and nodular formations of variable size and shape, with clean, sparsely-dense contours and areas of fatty density**

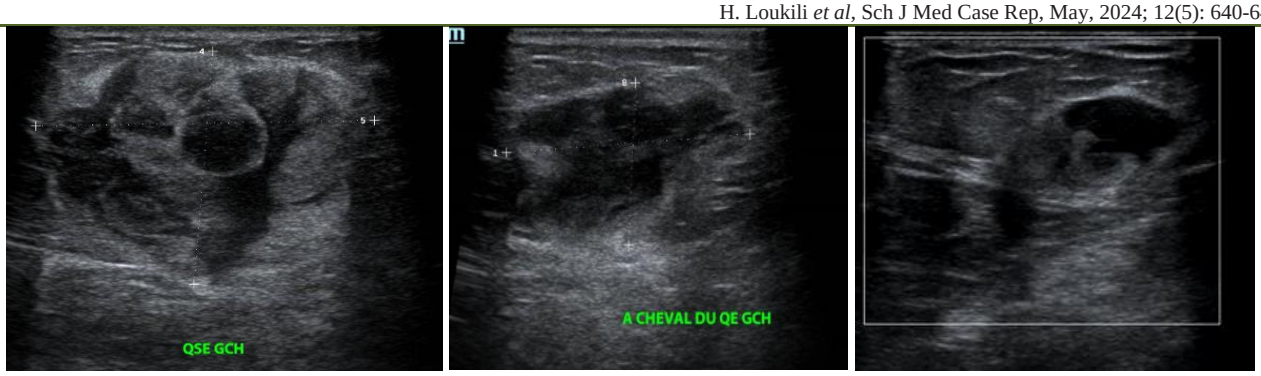

Fig. 2: *US images of breast*: Showing masses heterogeneous hyperechoic echostructure, with irregular and circumscribed margins and non-vascularized on color Doppler

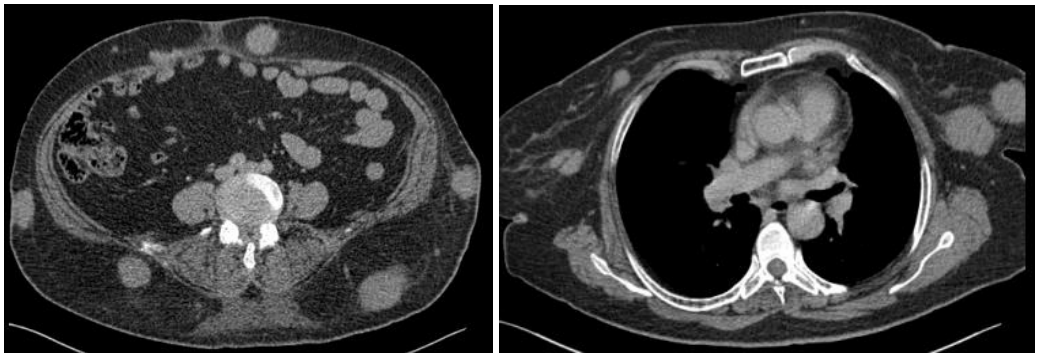

Fig. 3: *Chest and abdominal CT* documenting bilateral breast masses and peritoneal nodules and tumour-like soft tissue

DISCUSSION

Breast is an uncommon extra-nodal site of involvement by lymphoma, apparently due to the small amount of lymphoid tissue in this organ. Lymphomatous involvement of the breast can be distinguished in primary and secondary, [1]. Secondary breast lymphomas more commonly occur in association with extra mammary non-Hodgkin lymphomas.

Primary Breast lymphomas are less common, accounting for only 0.05%–0.53% of all breast malignancies [7]. Breast NHL usually occurs as secondary disease (in association with extramammary NHL). Primary NHL of the breast is defined pathologically as close apposition of lymphomatous infiltrate and normal breast tissue in a patient with neither previous nor concurrent NHL at another site, except for concurrent involvement of ipsilateral axillary lymph nodes, which may be present [6]. This condition accounts for 2% of extra-nodal LMNH and less than 0.5% of all breast malignancies [5].

The average age of onset of primary lymphoma is identical to that of adenocarcinoma, at around the age of 50 [1]. Men are is exceptionally affected [5].

Primary breast lymphoma almost always corresponds to LMNH. It meets the classic described by Wiseman and Liao, which include histological include histological evidence in the form of a lymphomatous lymphomatous infiltrate in normal breast tissue, the absence of lymphomatous dissemination at the time of diagnosis and the presence of axillary ipsilateral axillary adenopathy concomitant with the primary lesion [5].

Secondary lymphoma is part of extra-breast lymphomatous disease already labelled. It is slightly more frequent than primary lymphoma and is probably easier to diagnose, since it occurs that it occurs in a suggestive clinical context, as was the case in our three observations [5].

The symptomatology of mammary lymphomas can mimic that of a carcinoma, raising problems of problems of differential diagnosis. A painless is the most frequent clinical manifestation, with pain present in 25% of cases [8]. Cutaneous involvement is often associated with diffuse parenchymal involvement, and a high grade of malignancy [8]. Nipple reattachment or discharge and skin reattachment are exceptional [8].

Bilaterality has been reported as occasional, but is often observed in secondary secondary forms. Bilateral breast lymphoma is considered a specific clinical entity, affecting entity, mainly affecting pregnant or postpartum women, with an increase of the mammary vein, rapid evolution and poor prognosis [8].

Not much has been written about US findings of breast Lymphomas. A hypoechoic, homogeneous, or heterogeneous well-defined mass is the most common US finding among patients with malignant lymphoma of the breast. However, a wide spectrum of appearances, ranging from well defined to poorly defined, focal to

diffuse, and hypoechoic to hyperechoic, has been described in previously reported series [7].

Radiological Apparences

Mammographic Finding:

According to the literature, the radiological features of BL are not pathognomonic. Radiological studies describe a relatively small number of lesions, ranging from 10 to 32. Therefore, our study with 96 findings in 36 patients is the largest to date. Previous reports suggested that on mammography most lesions are oval and high-density solitary or multiple masses with a well-circumscribed margin. Typically, no masses had spiculated margins or calcifications [9]. However, in the study of Sabate *et al.*, most masses presented with irregular or partially defined margins. In addition, well-defined contours mimicking benign lesions were depicted in only 12.5% of the identified cases. Meyer *et al.*, reported that in all cases with PBL, minimal and moderate spiculation was seen. Intramammary masses in BL are commonly solitary. Other features such as diffuse increased opacity with or without skin thickening have also been described as mammographic manifestations of BL. This pattern occurs in 9–33% of the cases. Pameijer *et al.*, reported miliary densities on mammography in a patient with NHL of the breast. 13% of patients with BL, however, showed no abnormalities on mammography [9].

Ultrasound Finding:

The role of ultrasound in the diagnosis of breast is to confirm the presence of a solid mass, which is non-specific. A wide spectrum of ultrasonographic appearances, ranging from well-limited to poorly limited, fecal or diffuse lesions, from hypoechoic to hyperechoic, has been described. It has been suggested that lymphomatous masses are often hypoechoic or even anechoic, more or less well limited. In cases where mammography reveals no abnormalities, even though a clinically palpable nodule clinically palpated nodule, ultrasound can be very useful by highlighting the lymphoma mass and enable post-therapeutic follow-up [5].

MRI Findings

The MRI appearance of breast lymphoma is that of a poorly limited, non-spiculated lesion, hypointense in T1, isointense with glandular parenchyma glandular parenchyma in T2, with the presence of a hyperintense halo. Enhancement is rapid and prominent in dynamic sequences. MRI is superior to mammography and ultrasound in demonstrating mass and skin involvement. MRI features are not pathognomonic and those found can be seen in both primary and secondary lymphoma secondary lymphoma. Rapid enhancement may help to exclude a benign benign tumour and may indicate secondary involvement in cases of known lymphoma. Therapeutic response can be monitored by MRI, which is more effective than other methods [5].

Histological Diagnosis:

Because the clinical signs and radiological features of BL are non-specific, a malignant lymphoma was suspected in 18% of patients only. Other clinical diagnoses in previous reports before histopathological examination included carcinoma, inflammatory carcinoma [10]. Therefore, the diagnosis should be established histopathologically. According to the literature, fine-needle aspiration cytology and/or excisional biopsy can differentiate NHL involvement of the breast from epithelial tumours [10]. Histologically, the majority of cases are B-cell lymphomas. However, other types of BL, such as mucosa-associated lymphoma, Burkitt lymphoma and T-cell lymphoma have been described [10].

CONCLUSION

Primary or secondary Hodgkin's disease of the breast is clinically unusual and non-specific Mammary lymphoma should be discussed when a large, circumscribed mass appears rapidly or an inflammatory breast with non-specific radiological expression. Diagnosis is based on anatomopathological examination, mainly of biopsy drills. Knowledge of such a location is very important in order to improve therapeutic in view of the very poor prognosis.

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