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Disseminated Diffuse Large B cell lymphoma (DLBCL) presenting as bilateral breast lump in a young female

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Abstract

Lymphomas rarely affect the breast and have been seen in0.04-0.5%, They may be primary or secondary. Here we are presenting a rare case of secondary breast Non-Hodgkin Lymphoma with disseminated disease in adrenals, vertebrae, lung and hilar lymph nodes. The mean age of presentation of secondary/ disseminated breast lymphoma is around 56.7 years. This case merits interest because of presentation in a young patient.

Keywords: Disseminated, Secondary, Diffuse Large B cell lymphoma

Case: A 25-year-old female presented to the surgical oncology OPD with complains of weight loss(10kg), bilateral breast nodularity and weakness since 2 months. She had backache since15 days. A CECT thoax & abdomen was done which showed multiple lytic lesions in D2-D6 vertebrae, bulky adrenals, collapse of left lower lobe lung with left hilarmass. Bilateral breast showed opacities. A clinical differential of miliary Tuberculosis vs metastasis was kept and right breast biopsy was sent. Biopsy was reported as malignant round cell tumor and was confirmed to be Non-Hodgkin Lymphoma-DLBCL on Immunohistochemistry (CD 20+, CD 3-, PAX-5 +, ALK 1 -, Bcl2 -, ki67 80%). Her bone marrow was uninvolved. Patient was started on cytoreductive chemotherapy and is presently on follow up.

To conclude metastatic involvement of breast is a rare entity and secondary breast lymphomas account for almost 17% of metastatic tumors to breast. Suspicion of secondary breast involvement by disseminated lymphoma should be kept in mind and all such cases should be analysed by obtaining proper clinical history, adequate biopsy tissue and searching for distant metastasis, bilaterality and multicentricity.

Introduction

Among patients with malignant breast neoplasms, patients with lymphoma represents between 0.04% and 0.5%. of all breast malignancies. [1] This small incidence of mammary lymphoma is attributed to the lack of lymphoid tissue in breast. Primary breast lymphoma (PBL) is a rare clinical entity that accounts for less than 1% of all patients with non-Hodgkin lymphoma (NHL) and approximately 1.7% of all patients with extranodal NHL (1). Lymphomatous involvement of the breast may occur as primary extralymph node involvement of the breast or as secondary infiltration by systemic disease at the time of either initial diagnosis or disease recurrence (2). Unlike ductal or lobular carcinoma, mammary lymphoma do not usually show the typical clinical features like peud'orange, nipple retraction or lymphedema. Even mammography findings are non specific and may mimic a benign process (3). An adequately obtained surgical pathology specimen sent for histological diagnosis coupled with Immunohistochemistry remains an essential step for planning treatment and assessing prognosis.

Here we report a rare case of clinically occult, disseminated lymphoma in a young patient who presented with unexplained weight loss and vague lumpiness in bilateral breasts. This case merits interest because of rarity of diagnosis and young age at presentation.

Case

A 25-year-old female presented to the surgical oncology OPD with chief complains of weakness, dyspnea on exertion and weight loss since 2 months. Her weight loss was almost 10 kg in the last 2 months. She also complained of backache and inability to raise her arm to comb her hair since 15 days. Patient was not pregnant and had stopped lactation 2 years ago. Her hemogram showed moderate to severe anemia (Hb 8.8 g/dl). TLC was 6600 cells/cumm and DLC was P62l33E01M05. Peripheral blood smear showed normocytic normochromic picture with no immature cells. LDH levels were high (750 IU/L). A CECT thoax & abdomen was done which showed multiple lytic lesions in D2-D6 vertebrae, bulky adrenals, collapse of left lower lobe lung with left hilar mass. Bilateral breast showed opacities on mammography however there was no calcification. A clinical differential of miliary Tuberculosis versus metastasis was kept and ultrasound guided biopsy from right breast was sent for histopathology. Grossly multiple linear cores of breast tissue were received. The tissue pieces were grey white in color, measuring 4x3x2mm. Tissue was fixed in 10% neutral buffered formalin for 18 hours and processed and stained with Hematoxylin& Eosin as per standardized operating procedure followed in the laboratory. On microscopic examination the entire tissue showed infiltration by sheets of mostly monomorphic appearing round cells having round to convoluted nuclei with few prominent nucleoli and scanty cytoplasm. (Photomicrograph 1). Mitotic figures were numerous. Necrosis, rosette formation or neoplastic osteoid was not seen. Biopsy was reported as malignant round cell tumor favoring lymphoma and Immunohistochemistry (IHC) was advised for confirmation. On IHC the tumor cells were positive for CD 20 & PAX-5 and negative for CD 3, ALK 1 , Bcl2 ,Tdt .(Photomicrograph 2,3) Ki67 was 80-90% (Photomicrograph 4). Hence a diagnosis of Non-Hodgkin Lymphoma-Diffuse Large B Cell Lymphoma (DLBCL) was given. There was no hepatosplenomegaly. Her bone marrow aspiration and biopsy showed no involvement by lymphoma cells. Patient was started on cytoreductive chemotherapy.

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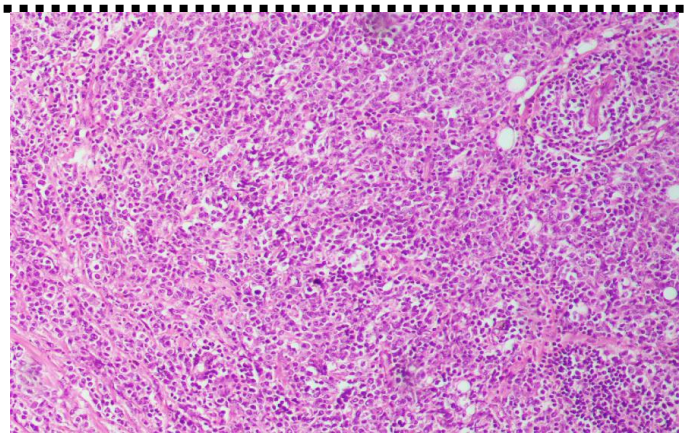

Figure 1: (H&E: 10x4X) Monomorphic malignant cells arranged in diffuse sheets.

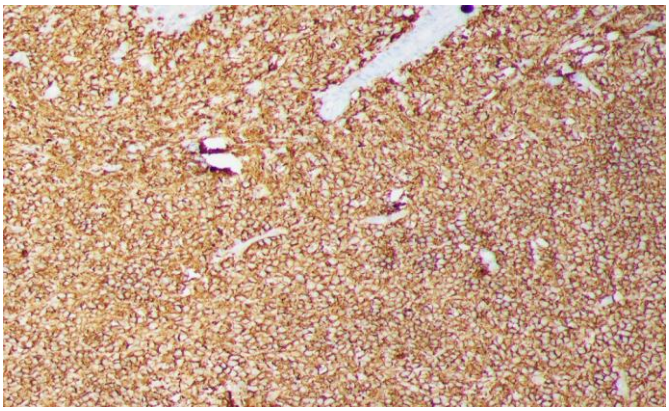

Figure 2: (Immunohistochemistry 20x4X) Strongly positive CD 20

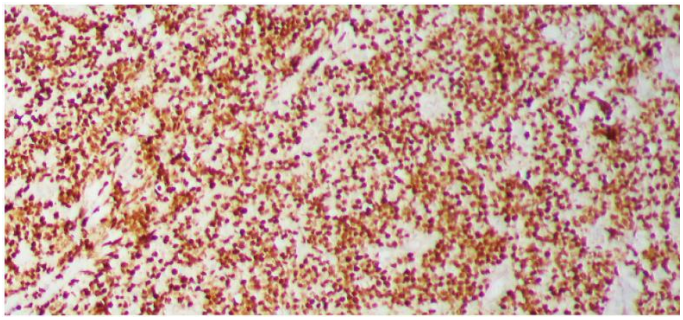

Figure 3: (Immunohistochemistry 20x4X) Strongly positive PAX-5

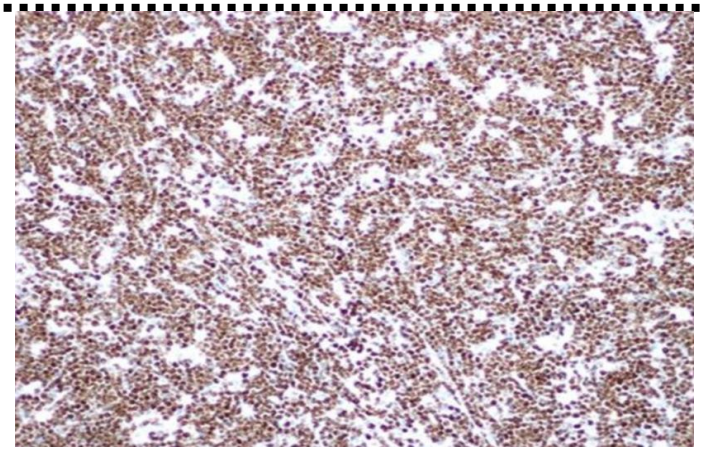

Figure 4: (Immunohistochemistry 20x4X) High mitotic activity in tumor cells Ki 67 :80-90%

Discussion

Non epithelial tumors involving the breast are rare and metastases to breast is rarer. The common sources of metastasis excluding lymphoma & leukemias are melanoma, rhabdomyosarcoma, lung tumours & ovarian tumours (4).

Lymphomas are seen in 2% cases. To diagnose whether the lymphoma is primary or secondary, Wiseman and Liao had laid down certain criteria which included (a) adequate specimen (b)presence of closely related breast parenchyma and lymphoma (c) no preceding extramammary lymphoma (d) there should be no evidence of systemic disease after staging. However if ipsilateral axilla shows nodal involvement by NHL it can still constitute primary breast lymphoma(5). Secondary lymphoma are seen in 17% of all cases metastasizing to the breast. Most of these lymphomas are DLBCL however rarely follicular and Mucosa Associated Lymphoid Tissue (MALT) subtypes have also been documented (6). Hodgkins lymphoma or T-cell NHL are rarely seen (7). Secondary breast lymphomas are considered to have a poorer prognosis (8).

Mammography findings are variable and non-specific but can show single or multicentric mass lesions usually without calcification. Sometimes because of lack of

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parenchymal distortion and absence of spiculation and calcification, a lymphoma can be misdiagnosed as a benign breast lesion on radiology (9).

Some studies have been done previously to study whether these patients will respond to Tamoxifen or not. Ariad et al in a study group of 16 patients of breast lymphomas (both primary and secondary) failed to demonstrate Estrogen receptors in the neoplastic lymphoid cell population suggesting tamoxifen has no role in management of these mamammrytumours(10). Treatment protocol ofthese patients should be to avoid radical surgery rather chemotherapy followed by radiation should be the standard approach.Mastectomy does not seem to offer any advantage rather can delay the start of chemotherapy in such patients(11).

Conclusion

Breast Non Hodgkin lymphoma particularly those seen in younger patients are often bilateral , more aggressive & disseminated at the time of diagnosis . Burkitts lymphoma is associated with the worst prognosis among these secondary NHLs. An accurate diagnosis is essential to avoid unnecessary mastectomies.

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