Secondary involvement of breast with non-Hodgkin's lymphoma in a patient with HIV infection - case report

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Summary

Secondary lymphoma of the breast is a rare entity in patients with non-Hodgkin's lymphoma (NHL). HIV infection is associated with an increased risk for developing NHL, however lymphomatous involvement of the breast in AIDS patients has rarely been reported. We present the case of a 33-year-old HIV-infected female patient with diffuse NHL who presented with a unilateral breast mass. Histologic examination of the biopsy specimen revealed a highly-malignant diffuse large B-cell lymphoma.

Key words: Breast lymphoma; HIV; non-Hodgkin's lymphoma.

Introduction

Breast lymphoma is a rare entity seen in < 5% of patients with non-Hodgkin's lymphoma (NHL) [1]. Although HIV infection is known to predispose to NHL, lymphomatous involvement of the breast in AIDS has rarely been reported. We report a case of an HIV patient with diffuse NHL and secondary lymphoma of the breast.

Case Report

A 33-year-old African female presented to our Radiology Department and reported a left-sided palpable breast mass which had exhibited slow enlargement over the previous two months. The patient had been HIV-positive for the past five years and suffered from diffuse NHL which had been diagnosed in another hospital eight months earlier. The diagnosis was established via inguinal lymph node biopsy. The patient had undergone chemotherapy and remained in good condition thenceforward.

Physical examination revealed slight enlargement of the left breast. A palpable, well-circumscribed, painless mass was located in the subareolar region. There were no palpable axillary lymph nodes or signs of skin or nipple involvement. Mammography demonstrated a well-defined 7.0 x 8.0 cm mass of uniform high density and smooth contours which was located centrally in the left breast (Figure 1). Examination of the right breast revealed no abnormal findings. The solid nature of the lesion was established by ultrasonography which depicted a heterogeneous, hypoechoic mass with irregular internal vascularity. The above clinical and imaging characteristics were highly suspicious for malignancy and, based on the medical history of the patient, they suggested the diagnosis of lymphomatous involvement of the breast.

Surgical biopsy of the lesion was performed. Histologic examination of the biopsy specimen revealed highly-malignant diffuse large B-cell lymphoma, according to the WHO classification (Figure 2). Immunohistochemical assays showed the

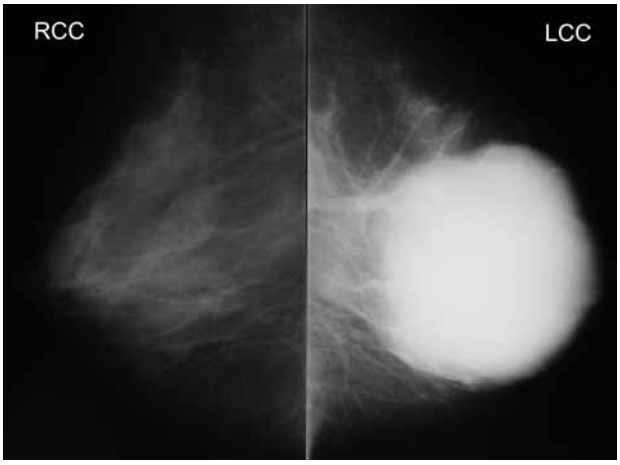

Figure 1. — Craniocaudal mammograms demonstrate a 7.0 x 8.0 cm well-circumscribed mass located centrally in the left breast.

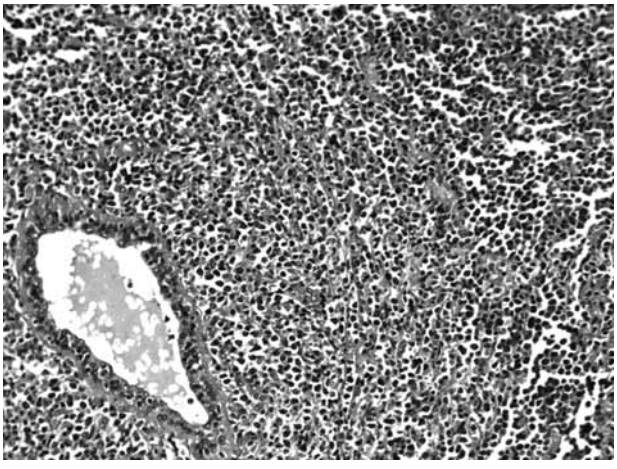

Figure 2. — Histology of diffuse large B-cell lymphoma infiltrating the breast parenchyma (HAE, 10x).

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Figure 3. — A higher magnification shows extensive immunoreactivity for CD20 in lymphoma cells (ABC technique, 20x).

tumor cells to be positive for CD20 and negative for UCHL-1. The Ki-67 (clone MIB-1) proliferation index was high (95%). The tumor was histologically identical to the initial inguinal localization of the disease.

Discussion

Lymphoma of the breast is an uncommon disease which represents 2.2% of all extranodal lymphomas [2]. It is seen predominantly in females and nearly all cases are of non-Hodgkin's type [1,3]. Breast lymphomas are classified as primary and secondary, with the latter being more common [4]. In the primary type, the disease is confined to the breast and the ipsilateral axillary nodes [1]. The secondary type refers to cases in which a prior diagnosis of lymphoma has been established as well as those in which presentation involves the breast but additional staging has demonstrated concurrent disease in sites other than the breast [5]. HIV infection can affect the glandular, mesenchymal and intramammary lymphoid tissue and predispose these patients to various malignancies by means of a decreased immunologic response to tumor cells and an increased susceptibility to oncogenic viral infection [1,6]. Although patients with HIV infection have an increased incidence of NHL, lymphomatous involvement of the breast in AIDS has rarely been reported. Chanan-Khan *et al*. [1] recently reviewed a tumor registry database of 177 patients with AIDS-associated NHL and observed only three cases of breast involvement.

Breast lymphoma usually presents as a painless breast mass most frequently located in the outer quadrants. Skin retraction, erythema, peau d'orange appearance and nipple discharge are uncommon [3]. The imaging findings of breast lymphoma are nonspecific [3]. Mammography usually demonstrates a circumscribed, sharply marginated uncalcified mass, however a variety of rarer appearances such as irregular or spiculated contour, multiple densities, diffuse increased parenchymal density with skin thickening as well as miliary pattern have also been reported [4]. Ultrasonography exhibits a well-defined to poorly-defined hyper- or hypoechoic mass with variable attenuation [7]. Magnetic resonance imaging findings are not pathognomonic either [8].

This case not only highlights the multifocal nature of NHL but additionally indicates that lymphoma of the breast should be considered in every HIV patient with NHL who presents with breast symptoms. Since imaging features are nonspecific, the diagnosis is based solely on histologic criteria.

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