An unusual manifestation of a breast mass: primary lymphoma

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Abstract

Background: Some of breast masses are uncommon including primary diffuse primary large B-cell lymphoma. It is commonly seen in pregnant and lactating women. It has usually unpleasant symptoms and referred with unspecified diagnosis. The confirmation of diagnosis made by biopsy and patient benefit from radiotherapy and chemotherapy.

Methods and materials: In this literature, we report a 41 years old women with several masses in her lactation duration. She had history of 3 cesarean section and seemingly, normal course of pregnancy. Her major chief compliant was painless masses in her breast that initially diagnosed as mastitis.

Conclusion: We concluded that occasionally some relatively rare disease such as primary breast lymphoma occurs with unrelated features. Likely, exact obtaining history and physical examination or timely using of imaging and pathology modalities can play important role and help us in guiding treatment.

Keywords: Breast cancer, lymphoma, unusual

Introduction

Primary lymphoma in breasts is a rare event. Lymphoepithelial lesions in ducts and lobules and vascular involvement have been seen in primary and secondary cases [1]. The bilateral diffuse type is reported in sporadic cases; it mostly affects pregnant and lactating women with large breasts [2]. The incidence of tumor was 0.04% to 0.5% and it mainly consists of large diffuse cells [3]. Diagnosis is made by biopsy and aspiration. Other beneficial tests are MRI and aspiration with cytology [4]. The patients cannot benefit from mastectomy, but biopsy or lumpectomy are beneficial contrast with biopsy or lumpectomy [5]. Unfortunately, this disease has not have a definite treatment but a combination of chemotherapy, radiotherapy and surgery is performed [6]. These tumors are commonly low grade and similar to nodal follicular masses [7]. Primary breast lymphoma is associated with poor outcome. Controlling the disease by radiotherapy and chemo therapy is beneficial but systemic relapses, as in the central nervous system (CNS), commonly occurs [8].

Case presentation

A 41-years old women referred to our clinic with the chief compliant of a palpable mass in the right breast. She had no previous considerable illness or drug history. She was a housewife and had history of 3 times cesarean section. On the first lactation day, she had found 2×3 cm painless mass in the upper border of the right nipple which did not interfere with lactation. After 20 days, she found another painless mass in the left breast. Simultaneously, the size of breast enlarged. The baby refused breast feeding from the left breast. Both breasts were warm and erythematous. Laboratory findings were as follows: Hemoglobin (Hb)=10.6 g/dL, White blood cell (WBC)=11.3×103/mm3, International normalized ratio (INR)=1.1, Prothrombin time (PT)=12.7 s, Partial thromboplastin time (PTT)=30 s. Ultrasonography imaging reported increased thicknesses of cutaneous and subcutaneous layers of medial lobe of the right breast. Edema was manifested as fluid between tissue planes. Numerous hypo echoic areas with thick and irregular walls were observed throughout the breast which indicated abscesses; the largest one measured 77×52×47 mm3 and its volume was 99 mL. The same findings were observed in the other breast. One of them was aspirated but there was not any collection of fluid in it. When infection was superimposed,
Cefazolin and Gentamicin were administered and then metronidazole and vancomycin were added. Before the initiation of antibiotic consumption, the milk of both breast were sent for culture and antibiogram, which reported staphylococcus. Laboratory findings were changed to Hb=11.9 g/dL, WBC=9.2×10^3/mm^3, INR=1.1, PT=12.7 s, PTT=30 s. Magnetic resonance imaging (MRI) was requested but the patient did not consent to undergo it. Ultimately, she decided to discharge.

About one week later, she was readmitted to neurology ICU due to sudden weakness of lower extremities and urinary retention. The pathologic studies revealed intermediate grade of diffuse large B-cell lymphoma. Brain CT scan and brain and spine CT and MRI were obtained. In thoracic MRI infiltrative bone marrow lesion at T6 level was observed as isosignal to hyper-signal on T2-weighted and hypo-signal on T1-weighted. Paravertebral space was enlarged and aorta was shifted to lateral side. The mass extended longitudinally in this space and invaded T7-T8 vertebra. Cord impingement and myelopathy were noted at T5-T6 level. Plural effusion was noted bilaterally which was remarkable on the right side. The most likely diagnosis was metastasis. The patient underwent T6-T11 laminectomy and mass resection. The obtained samples were send to a pathologist. After a relative remission following two chemotherapy courses, she died due to pulmonary embolism.

Discussion
Lymphocytes exist commonly in breast, but lymphomas are rare and have a localized form. They consists of less than 1% of NHL and 0.5% of breast tumors. They are characterized by a primary lesion in breast, without any extra breast involvement. Also, their presentation are as unilateral or bilateral but bilateral form and it is frequently in pregnant or lactating women. Some authors showed mean age of 28 years old in 15% of pregnant or lactating women. Clinical manifestations are as B symptoms: fever, weight loss and night sweats. Between 1992 and 2012, 76 patients had the disease symptoms. Its most common feature is a diffuse large B-cell lymphoma (DLBCL) but other subtypes can also be seen. There are a few investigations about treating and prognosis this type of disease. Mastectomy is a sole modality that hasn't any significant impact on clinical course, so that patients should be benefit from immunotherapy, chemotherapy or radiotherapy.

This article presents a report on a patient with breast mass that was finally diagnosed as breast lymphoma. A survey of literature revealed that this rare disease occurs as primary...
and secondary forms. But, this patient was first diagnosed with infectious diseases and mistreated with antibiotics. Her poor prognosis can be explained by a delay in true diagnosis and loss of golden time for precise work up as despite their undesirable side effects, chemotherapy, radiotherapy or combined approaches can be helpful in treating patients. However, no primary origin of tumors could be found and based on literature, these masses were supposed to be primary masses.

Conclusion
It can be concluded that, occasionally, some relatively rare diseases such as primary breast lymphoma occur with unrelated features. Likely, obtaining exact history and physical examination or timely using of imaging and pathology modalities can play an important role and be helpful in guiding treatment.

Competing interests
The authors declare that they have no competing interests.

Authors’ contributions

| Authors’ contributions                                      | MM | MH | HF |
|-------------------------------------------------------------|----|----|----|
| Research concept and design                                 | ✓  | -- | -- |
| Collection and/or assembly of data                          | -- | ✓  | -- |
| Data analysis and interpretation                            | -- | -- | ✓  |
| Writing the article                                          | -- | -- | ✓  |
| Critical revision of the article                            | ✓  | -- | -- |
| Final approval of article                                   | ✓  | -- | -- |

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