Case Report

Eur J Breast Health
DOI: 10.4274/ejbh.galenos.2025.2025-4-3

Breast Lymphedema Secondary to Lymph Node Tuberculosis: Case Report

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ABSTRACT

Breast lymphedema is a common but underdiagnosed condition that affects the quality of life of patients. It may be caused by any pathology that disrupts lymphatic drainage in the breast. We present the case of a woman with axillary lymph node tuberculous infection with breast edema, clinically and radiographically indistinguishable from tuberculous mastitis. After six months of comprehensive antituberculosis pharmacological treatment, the persistence of breast edema required repeating diagnostic tests searching for malignancy, all of which were negative. Rehabilitation treatment with complex physical therapy improved the patient's clinical and symptomatic condition. Clinical suspicion of secondary lymphedema is crucial to avoid unnecessary diagnostic procedures and ensure adequate and timely treatment.

Keywords: Lymphedema; breast disease; tuberculosis; mastitis; extrapulmonary tuberculosis

Cite this article as: Vaquero-Ramiro E, Puentes-Gutiérrez AB, Millán-Casas L, García-Bascones M. Breast lymphedema secondary to lymph node tuberculosis: case report. Eur J Breast Health. [Epub Ahead of Print]

Key Points

- Breast lymphedema may occur due to any cause that affects the lymphatic drainage of the breast.
- The differential diagnosis should include disseminated breast tuberculosis.
- Breast lymphedema rehabilitation treatment improves patients' symptoms and quality of life.

Introduction

Breast lymphedema is a common but underdiagnosed condition. It may occur due to any cause affecting the drainage of the breast's lymphatic system and it is more common after breast cancer surgery and radiotherapy. There is no clear definition for this condition, and its diagnosis is not well established. The main symptoms are breast enlargement, orange-peel skin, and heaviness or pain, and they can be confused with other conditions affecting the breast, such as mastitis or inflammatory carcinoma (1).

We present a clinical case of tuberculous lymph node infection presenting with breast edema, clinically and radiographically indistinguishable from tuberculous mastitis.

Case Presentation

A 69-year-old woman, with no significant medical history, attended the Emergency Department with a painful mass in her right axilla for one week, evening fever, weight loss of approximately six kilograms, fatigue, and night sweats. Examination revealed a 12 cm mass in the right axilla with blurred borders and tenderness. The breast was also significantly edematous without erythema.

Blood tests showed mild microcytosis, elevated acute-phase reactants, a positive quantiFERON-TB, and negative serologies for hepatitis B virus, hepatitis C virus and human immunodeficiency virus.

A body computed tomography scan revealed bilateral clavicular and axillary lymphadenopathy, predominantly on the right side, with a pathological appearance, along with skin thickening of the right breast and no lung lesions.

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Received: 16.04.2025
Accepted: 18.05.2025
Epub: 27.05.2025

Ultrasonography and mammography (Figure 1) showed a slightly heterogeneous breast pattern, with diffuse increased breast and right axillary density, skin thickening, and multiple bilateral pathological axillary lymphadenopathy, measuring 4–5 cm. No signs suggesting malignancy were observed.

Axillary lymph node biopsy was reported as non-suppurative granulomatous lymphadenitis of infectious origin. Zhiel-Nelsen test for mycobacteria was negative, but the DNA of *Mycobacterium tuberculosis* was detected.

With the initial diagnosis of lymph node tuberculosis and tuberculous mastitis, specific treatment with four medicines was prescribed, according to guidelines. Six months later, the ultrasound revealed a size decrease and cortical thickening of the axillary lymph nodes. However, a severe increase in volume persisted in the right breast on the magnetic resonance imaging (Figure 2). A skin punch and breast biopsy ruled out histological findings of tuberculous involvement or malignancy.

The patient was referred to the Physical Medicine and Rehabilitation Department, where breast edema with orange peel skin, generalized pastiness, mainly in the lower quadrants, and a feeling of heaviness were observed. Clinical and ultrasound-based findings were consistent with breast lymphedema. Fifteen sessions of manual lymphatic drainage, exercises, skin care, and kinesiology tape were prescribed, adding compression with a bra and a partial breast prosthesis. Six weeks after starting treatment, there was a significant clinical improvement, although ultrasound revealed persistent free fluid in the lower outer quadrant (Figure 3). Compression was maintained 23 hours a day, and the treatment described above was followed, with progressive improvement (Figure 4). After six months, the breast volume was normal, the discomfort disappeared, and the patient was very satisfied, so the compression was gradually discontinued without further incidents. Informed consent was obtained from the patient for the publication of this case.

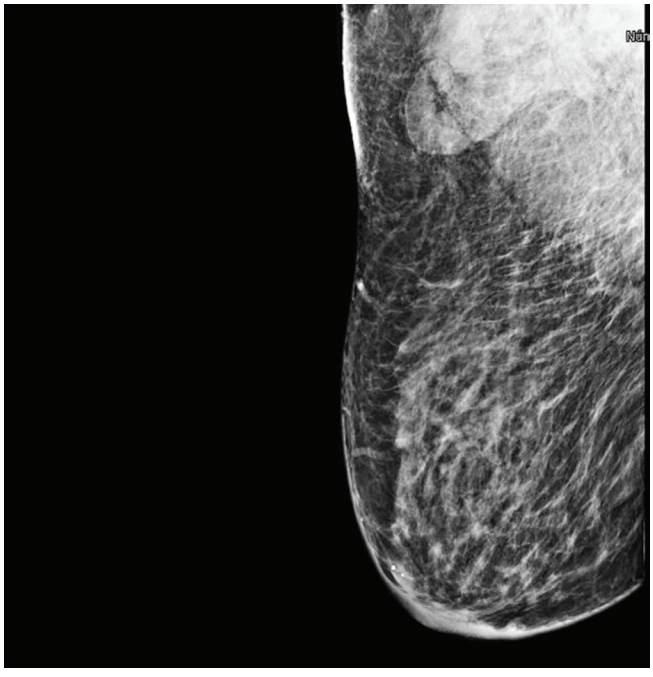

Figure 1. Mammography of the right breast with axillary adenopathy and skin thickening, without suspicious lesions in the breast parenchyma

Discussion and Conclusion

There is no clear definition of breast lymphedema in the literature, and the diagnostic methods commonly used for extremity lymphedema, such as volumetry or lymphoscintigraphy, are not applicable. The use of ultrasound when investigating lymphedema has gained relevance in recent years, although there are no standardized criteria to date. The most common findings include increased dermal thickness, hyperechogenicity of the subcutaneous tissue, and the presence of fluid in the dermis, interlobular space, and superficial fascia (2, 3).

The differential diagnosis of breast lymphedema should include inflammatory breast carcinoma, fibroadenoma, chronic abscess caused by another microorganism, sarcoidosis, granulomatous mastitis, plasma cell mastitis, or fat necrosis.

Tuberculous involvement accounts for 0.1% of all breast lesions in developed countries. Its most common clinical presentation is a painless mass usually located in the upper outer quadrant, and less frequently, edema, localized abscess, or bilateral mastitis (4).

Tewari and Shukla (5) divided breast tuberculosis into three types: nodular caseous tuberculous mastitis, disseminated tuberculous mastitis, and tuberculous breast abscesses. Longman et al. (6) described the radiological findings of each one. The disseminated form presents as an ill-defined textural change within the parenchyma and multiple small collections of anechoic fluid scattered in one or more quadrants, findings very similar to breast lymphedema.

In the clinical case presented herein, due to a positive lymph node biopsy for tuberculosis, the breast was not initially biopsied, mistaking breast lymphedema for disseminated mastitis. This led to repeated exclusion of malignancy and delayed an optimal treatment.

Breast lymphedema causes discomfort, pain, alterations in body image, and affects self-esteem, impacting the quality of life of the patients (7). Rehabilitative treatment with decongestive physical therapy, which includes skin care, manual lymphatic drainage, compression,

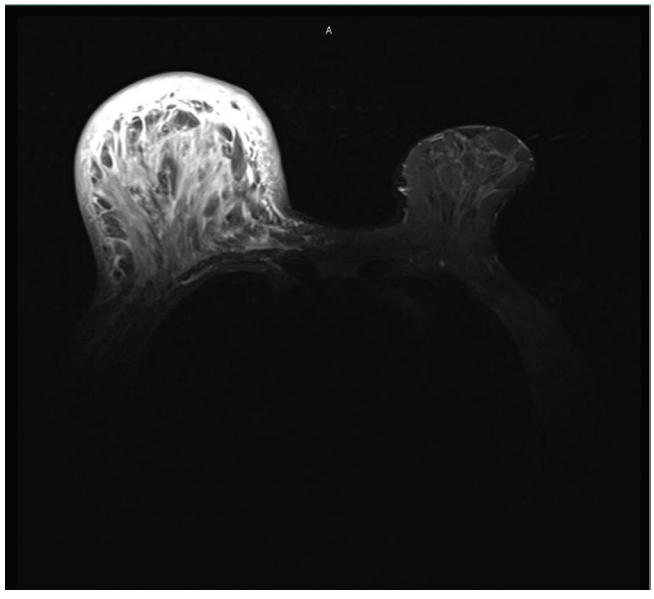

Figure 2. Breast magnetic resonance imaging showed asymmetrical breast size, the right breast was larger than the left one and displayed a diffuse homogeneous parenchymal enhancement with diffuse trabecular and skin edema, no suspicious mass

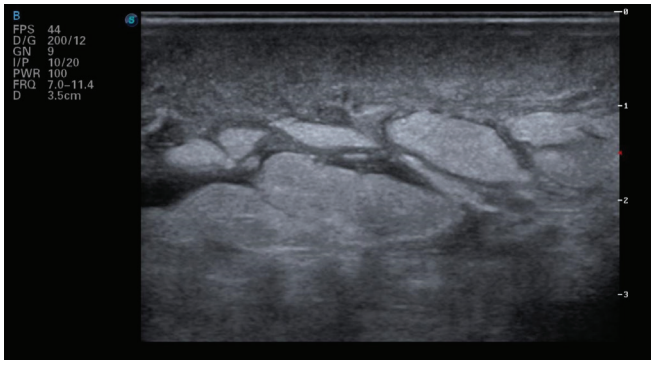

Figure 3. Ultrasound image showing persistence of hypoechoic lines of free fluid in subcutaneous cellular tissue of the lower external quadrant of the right breast

Figure 4. Mild right breast edema three months after rehabilitation treatment. Note the marks on the skin of the ribbed partial prosthesis used for breast compression

and exercises, is effective (8). Breast compression with bandages is difficult and uncomfortable, so some authors recommend the use of kinesiotape (9) and a compression bra with wide straps, few seams, and a cup that contains the entire breast. Additional use of silicone partial prostheses, although not standardized, may contribute to improved compression.

An early and accurate diagnosis of the origin of breast edema is required to determine the most appropriate treatment, especially given the multitude of potential etiologies.

Ethics

Informed Consent: Informed consent was obtained from the patient for the publication of this case.

Footnotes

Authorship Contributions

Surgical and Medical Practices: E.V-R.; Concept: E.V-R., A.B.P-G., L.M-C., M.G-B.; Design: E.V-R., L.M-C., M.G-B.; Data Collection or Processing: E.V-R., L.M-C.; Analysis or Interpretation: E.V-R.; Literature Search: E.V-R., A.B.P-G.; Writing: E.V-R., A.B.P-G., M.G-B.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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