

# The Coexistence Of Carcinoma Of The Breast With Tuberculous Axillary Lymph Nodes: A Rare Clinicopathological Dilemma

Dr. Sahil Jaglan, Dr. Shashank Rai, Dr. Jagdish Mutreja, Dr. Kuldeep Raj

Department Of General Surgery, School Of Medical Sciences And Research, Sharda University, Greater Noida

---

## Abstract

The simultaneous occurrence of breast carcinoma and tuberculous lymphadenitis in axillary lymph nodes is a rare clinical entity that poses diagnostic and therapeutic challenges. Here, we report a case of a 71-year-old woman diagnosed with invasive ductal carcinoma of the right breast. Axillary lymph node dissection performed during surgery revealed histological evidence of tuberculous lymphadenitis. This coexistence is exceptionally uncommon and emphasizes the need to consider tuberculosis as a differential diagnosis in lymph node pathology, especially in endemic regions. Histopathological confirmation is crucial to prevent misdiagnosis, under-staging, or inappropriate treatment.

**Keywords:** Axillary lymph nodes, tuberculosis, breast cancer, tuberculous lymphadenitis.

---

Date of Submission: 12-02-2026

Date of Acceptance: 22-02-2026

---

## I. Introduction

Female breast cancer has been the leading cause of cancer morbidity and mortality among women in the majority of countries for decades. In 2020, there were an estimated 2.3 million new cases and 685,000 deaths from female breast cancer worldwide, which accounted for one in four cancer cases and one in six cancer deaths among women [1]. Invasive ductal carcinoma (IDC) is the most common form of invasive breast cancer. It accounts for 55% of breast cancer incidence upon diagnosis [2]. It typically presents as a painless lump and is known to metastasize to axillary lymph nodes early in the disease course. On the other hand, tuberculosis (TB) is a chronic infectious disease caused by Mycobacterium tuberculosis. It remains a major public health issue, especially in low- and middle-income countries, including India, where the incidence is one of the highest in the world. Extrapulmonary tuberculosis (EPTB) constitutes about 15–20% of all TB cases, with lymph node TB (tuberculous lymphadenitis) being the most common manifestation of EPTB [3]. Axillary lymph node TB is relatively uncommon compared to cervical node involvement, and isolated tuberculous lymphadenitis of axillary nodes is a rare clinical presentation.[4] The coexistence of breast cancer with tuberculous axillary lymphadenitis is exceedingly rare, and only a few cases have been documented in literature [4-7].

## II. Case Presentation

A 71-year-old postmenopausal woman, resident of a semi-urban locality in Uttar Pradesh, India, presented to the outpatient department of General Surgery at our tertiary care hospital with the chief complaint of a painless lump in her right breast, noticed approximately four months prior to presentation. The lump was insidious in onset and progressively increasing in size. She denied any associated pain, nipple discharge, ulceration, or constitutional symptoms such as fever, night sweats, fatigue, or weight loss. The patient had no prior history of tuberculosis, neither pulmonary nor extrapulmonary, and denied any contact with known TB patients. She had no significant comorbidities such as diabetes mellitus, chronic renal failure, or HIV, which could predispose to TB reactivation. She had never undergone any surgical procedures in the past, nor was she on any long-term immunosuppressive therapy. There was no personal or family history of breast carcinoma or other malignancies. She was gravida 4, para 4, with menopause attained at the age of 50 years. She had breastfed all four children for durations ranging from 6 to 12 months. She did not consume tobacco or alcohol. On general examination, the patient was afebrile, well-nourished, and hemodynamically stable. There was no clinical evidence of anemia, jaundice, or lymphadenopathy elsewhere in the body. Systemic examination revealed no abnormalities in the cardiovascular, respiratory, gastrointestinal, or neurological systems. Inspection of the bilateral breast revealed no asymmetry. The skin overlying the right breast appeared normal with no erythema, ulceration, peau d'orange, or nipple retraction. Dilated superficial veins were visible, but no engorgement or distortion was noted. The nipple-areolar complex was intact and not retracted. On palpation, a hard, non-tender mass approximately 4 cm × 5 cm in dimension was felt in the central quadrant of the right breast, located just posterior to the nipple-areolar complex. The lump had irregular margins, was not fixed to the

overlying skin or underlying pectoral muscle, and was freely mobile. There was no clinical evidence of axillary, supraclavicular, or infraclavicular lymphadenopathy. The contralateral (left) breast and axilla were unremarkable on examination. Mammography (Bilateral) (figure1) Revealed a high-density, spiculated mass in the central region of the right breast with architectural distortion. The lesion was classified as BI-RADS 5, indicating a high suspicion for malignancy. No microcalcifications were observed. The left breast appeared normal



Figure 1 – Bilateral Mammogram

Ultrasound (Breast and Axilla): There is a large well-defined lobulated heterogeneous lesion of size - 30 x 35 x 32mm containing irregular shaped hyperechoic areas and internal echoes noted in the retro-areolar region of right breast. Left axilla appears normal. Ultrasound-Guided Core Needle Biopsy was performed from breast lump that was suggestive of invasive carcinoma of no special type – grade 1. Tuberculin Skin Test (Mantoux) or ESR and PCR not performed preoperatively due to absence of TB symptoms and normal chest imaging. Chest X-ray revealed no active or healed pulmonary tuberculosis. No lung nodules, masses, or hilar lymphadenopathy. On Abdominal Ultrasound there was no evidence of liver metastases, ascites, or retroperitoneal lymphadenopathy. Based on the clinical and radiologic assessment, the tumor was staged as T2N0M0 (Stage IIA). A modified radical mastectomy (MRM) with axillary nodal dissection was performed. The histopathological examination of the MRM specimen revealed a tumor size of 3.6 ×2.5 ×1.5 cm showing features of invasive ductal carcinoma Figure 2). Total of 6 lymph node were identified, 3 showed feature of caseating type epithelioid-cell granuloma with Langhans type giant cells (figure 3), all of them free from tumour deposits. Pathological staging reported was p T2N0Mx. Ziehl- Nelson Stain for Acid-Fast Bacilli (AFB) was positive . Tumor was negative for estrogen and progesterone receptors. Given the histological confirmation of tuberculous lymphadenitis, and after consultation with respiratory medicine the patient was started on anti-tubercular therapy (isoniazid, rifampicin, ethambutol, pyrazinamide). Given the final pathological staging of pT2N0M0, and favorable receptor status (ER/PR- negative, HER2-negative), the patient was referred to the oncology department for adjuvant therapy planning. A multidisciplinary tumor board including surgical oncologists, medical oncologists, radiation oncologists, and infectious disease specialists reviewed her case. Despite node-negative status, adjuvant chemotherapy was recommended due to tumor size (>2 cm) and patient age. A standard regimen of four cycles of Adriamycin (doxorubicin) and cyclophosphamide (AC) followed by four cycles of paclitaxel was planned.

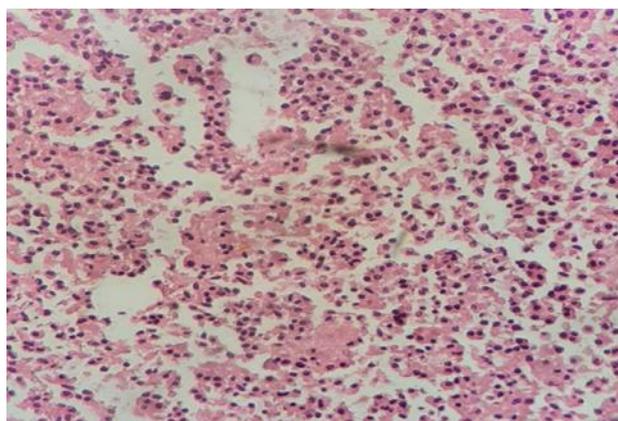


Figure 2- Photomicrograph of breast lump showing invasive papillary carcinoma, H&E stain

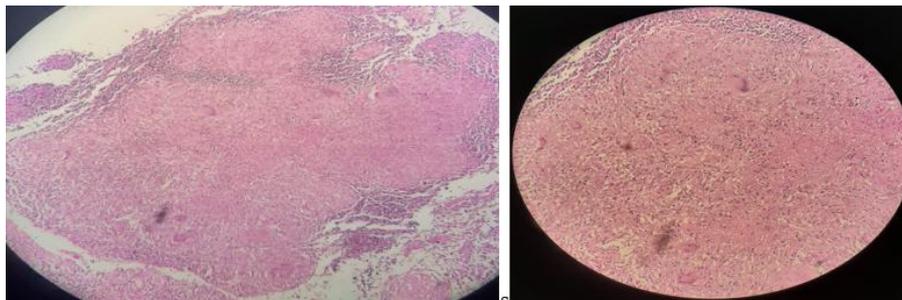


Figure 3 - Photomicrograph of lymph node at a) lower view, b) higher view

### III. Discussion

The simultaneous occurrence of invasive breast carcinoma and tuberculous lymphadenitis in the axillary region represents a rare and diagnostically complex clinical entity was first described in 1899 by Warthin AS[8]. While both diseases are individually prevalent in many parts of the world, their coexistence within the same anatomical region is uncommon. This case stands out due to the absence of clinical or radiologic axillary lymphadenopathy, absence of systemic TB symptoms, and the unexpected histopathological discovery of tuberculous involvement of axillary lymph nodes after breast cancer surgery. It illustrates a diagnostic dilemma that, if not appropriately managed, could lead to misdiagnosis, improper staging, or delayed treatment [8]. Breast carcinoma, on the other hand, is the most commonly diagnosed cancer among women worldwide. In India, breast cancer has overtaken cervical cancer as the most common female malignancy, with a steadily increasing incidence [9]. Despite the high prevalence of both diseases, the concurrent manifestation of breast carcinoma with tuberculous axillary lymphadenitis remains rare. This raises several questions regarding the pathogenesis and possible associations. The exact mechanism underlying this coexistence is unclear. Several hypotheses have been proposed. The simplest explanation is that these two diseases occur independently in the same individual due to high background prevalence. In India, where latent TB infection is widespread and breast cancer incidence is rising, incidental coexistence is statistically more likely. Breast carcinoma can impair the host immune response, especially cell-mediated immunity, which plays a crucial role in containing latent TB infection. This immunosuppression may facilitate the reactivation of dormant *Mycobacterium tuberculosis* bacilli in regional lymph nodes. TB commonly affects lymph nodes due to the abundance of macrophages, a preferred host cell for *M. tuberculosis*. Surgical manipulation, lymphatic obstruction, or tumor-induced inflammation may alter local lymph node immunity, enabling TB colonization. Some have suggested that chronic granulomatous inflammation (e.g., from TB) might predispose tissue to neoplastic changes via persistent immune activation, oxidative stress, and cytokine release. However, this remains speculative and unproven in breast tissue.[10] In our case, the absence of prior TB history, pulmonary symptoms, or active infection elsewhere supports the theory of localized reactivation of latent TB within axillary nodes in an immunologically compromised environment created by cancer. Mammography, ultrasound, or MRI may reveal enlarged or necrotic nodes in both metastatic and tuberculous etiologies. TB nodes may show central necrosis, rim enhancement, or calcification — features that can mimic malignancy. PET-CT scan, although more sensitive, cannot reliably differentiate between inflammation and metastasis due to similar FDG avidity [11]. As seen in this case, histopathology remains the gold standard [12]. The hallmark features of tuberculous lymphadenitis — caseating granulomas, Langhans giant cells, and necrosis — can be definitively identified under microscopy. Special staining techniques (e.g., Ziehl-Neelsen) and molecular tests (e.g., GeneXpert) help confirm TB and rule out drug resistance. Misinterpretation of TB as nodal metastasis may result in over-staging of breast cancer (e.g., N0 vs. N1/N2), thereby influencing: The extent of surgery (e.g., mastectomy over lumpectomy [4], Chemotherapy and radiotherapy planning, Prognostic expectations and follow-up frequency. Conversely, underdiagnosing TB may delay ATT initiation, risking disease spread and immunosuppression-related complications. In our case, accurate histological diagnosis allowed for: Down-staging of cancer (pT2N0), Avoidance of overtreatment, Timely commencement of ATT alongside chemotherapy. Such cases underscore the importance of high suspicion, especially in TB-endemic areas. The coexistence of invasive ductal carcinoma of the breast with tuberculous axillary lymphadenitis is a rare but clinically significant phenomenon.

### IV. Conclusion

The coexistence of invasive ductal carcinoma of the breast with tuberculous axillary lymphadenitis is a rare but clinically significant phenomenon. In this case, histology not only confirmed the primary diagnosis of breast cancer but also exposed an important concurrent infectious disease, thus preventing misclassification and inappropriate escalation of oncological treatment. This case emphasizes the importance of maintaining a high

index of suspicion for tuberculosis in lymph nodes, especially in elderly patients and those living in high-prevalence areas.

### References

- [1]. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global Cancer Statistics 2020: GLOBOCAN Estimates Of Incidence And Mortality Worldwide For 36 Cancers In 185 Countries. *CA: A Cancer Journal For Clinicians*. 2021 May;71(3):209-49.
- [2]. Ehemann CR, Shaw KM, Ryerson AB, Miller JW, Ajani UA, White MC. The Changing Incidence Of In Situ And Invasive Ductal And Lobular Breast Carcinomas: United States, 1999-2004. *Cancer Epidemiology Biomarkers & Prevention*. 2009 Jun 1;18(6):1763-9.
- [3]. Sharma SK, Mohan A, Kohli M. Extrapulmonary Tuberculosis. *Expert Rev Respir Med*. 2021 Jul;15(7):931-948. Doi: 10.1080/17476348.2021.1927718. Epub 2021 Jul 14. PMID: 33966561.
- [4]. Maharia S, Kapoor A, Narayan S, Nirban RK, Kumar V, Kumar HS. Synchronous Breast Cancer And Ipsilateral Primary Tuberculous Lymphadenitis In Axillary Node. *International Journal*. 2015 May;1(1):86.
- [5]. Raj FA, Ajmal IT, Thiyagarajan A, Ajmal MY, Selvam P, Muralidhar V. Synchronous Breast Carcinoma With Ipsilateral Axillary Tuberculosis, Posing A Diagnostic Dilemma. *Journal Of Surgical Case Reports*. 2025 Mar 28;2025(4).
- [6]. Dluzewski S, Brown A, Musaddaq B, Hogben RK, Malhotra A. Co-Existent Breast Malignancy And Contralateral Primary Axillary Tuberculosis. *BJR| Case Reports*. 2022 May 1;8(3):20210071.
- [7]. Jagtap SV, Naniwadekar RG, Jokhi CD, Jagtap SS. Invasive Breast Carcinoma With Axillary Tuberculous Lymphadenitis. *Journal Of Clinical & Diagnostic Research*. 2018 Jun 1;12(6).
- [8]. Tulasi NR, Raju PC, Damodaran V, Radhika TS. A Spectrum Of Coexistent Tuberculosis And Carcinoma In The Breast And Axillary Lymph Nodes: Report Of Five Cases. *The Breast*. 2006 Jun 1;15(3):436-8.
- [9]. Mehrotra R, Yadav K. Breast Cancer In India: Present Scenario And The Challenges Ahead. *World Journal Of Clinical Oncology*. 2022 Mar 24;13(3):209.
- [10]. Salemme V, Centonze G, Cavallo F, Defilippi P, Conti L. The Crosstalk Between Tumor Cells And The Immune Microenvironment In Breast Cancer: Implications For Immunotherapy. *Frontiers In Oncology*. 2021 Mar 11;11:610303.
- [11]. Motiei M, Dreifuss T, Betzer O, Panet H, Popovtzer A, Santana J, Abourbeh G, Mishani E, Popovtzer R. Differentiating Between Cancer And Inflammation: A Metabolic-Based Method For Functional Computed Tomography Imaging. *ACS Nano*. 2016 Mar 22;10(3):3469-77.
- [12]. Alzarraa A, Dalal N. Coexistence Of Carcinoma And Tuberculosis In One Breast. *World Journal Of Surgical Oncology*. 2008 Mar 4;6(1):29.