Breast cancer and breast tuberculosis: A rare coexistence

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ABSTRACT
The coexistence of breast cancer and tuberculosis is rare. It may pose a challenge in the diagnosis and treatment of patients with breast cancer. We report a case of a 65 year old woman having lump in left breast with axillary lymphadenopathy which was diagnosed as invasive ductal carcinoma on FNAC procedure, histopathology of the resected breast revealed presence of Invasive ductal carcinoma coexisting with breast tuberculosis, a rare coexistence.

Keywords: Invasive ductal carcinoma, Breast tuberculosis

INTRODUCTION
Breast tuberculosis is a rare form of tuberculosis. The first case of mammary tuberculosis was recorded by Sir Astley Cooper in 1829 who called it ‘scrofulous swelling of the bosom’. The coexistence of breast cancer and breast tuberculosis is uncommon; the literature describes approximately 100 cases1-3. When a lump in the breast is investigated by pathologist and FNAC is taken it very often happens that FNAC misses either of the lesion if not taken from multiple quadrants and directions. However Histopathology of resected breast specimen confirms co existence of invasive ductal carcinoma and breast tuberculosis4,6.

CASE REPORT
History: A 65-year-old woman presented with a lump in her left breast. Two months back she had vague symptoms of fatigue, anorexia, tiredness more towards evening. No history of fever. She had lost about 4 kg weight in last 2 months. There was no history of cough, hemoptysis, breathlessness. No family history of cancer or tuberculosis. No history of consumption of steroids or immunosupressants. No history of DM or thyroid related disease.

Examination: On clinical examination, a ulcer around left nipple measuring about 1.9 x 1.0 cm with firm to hard margin on palpation was noted. An irregular hard lump measuring approximately 4x2 cm was palpated in the left upper and outer quadrant with its margin reaching left nipple. Lump was hard in consistency. There were palpable axillary lymph nodes on the left side. Lymph nodes were firm in consistency and not tender on palpation. Supraclavicular or cervical lymph nodes were not palpable. Contralateral breast was normal. Mammography revealed the presence of airregular mass in the left breast. Investigations and Management: Patient’s all hematological parameters were normal except ESR which was 72 mm 1st hour by westergren’s method. Chest x-ray was normal. Thorough investigation revealed no evidence of primary tuberculosis elsewhere. A quanti FERON TB-Gold test was positive, indicating latent tuberculosis. FNAC was performed from the left breast lump which showed malignant aspirate, ductal carcinoma most likely was the diagnosis made on cytopathological examination. Fig.3 The patient subsequently underwent a left modified radical mastectomy. The specimen consisted of 25 x 13 x 3.0 cm sized left breast tissue with axillary tail with an overlying 19 x 10 cm sized elliptical skin flap and nipple-areola complex. There was 1.9 x 1.0 cm sized ulcerated area around left nipple

Thorpe sectioning revealed a 3.0 x 2.5 x 2.5 cm sized homogenous grayish white mass lying 3.0 cm away from superior margin reaching up to the nipple. Mass was 1.0 cm away from the base. Total 12 lymph nodes were identified. Histopathological examination showed a invasive ductal breast carcinoma NOS type-T2N1MX along with multiple tuberculous granuloma which consisted of peripheral collaring of epitheloid cells, lymphocytes, plasma cells, langhan’s type giant cells and central caseation necrosis. Fig.1,4,5 On immunohistochemical analysis, the tumor cells were highly positive for estrogen and progesterone receptors; expression of c-Erb-B2 was not detected. Total 12 lymph nodes were studied of that one lymph node showed metastatic deposits and 3 lymphnodes showed tuberculous granulomas with central caseation necrosis, collaring of epitheloid cells lymphocytes and langhans type of giant cells. Fig.2 Patient was treated with antituberculous drugs for about 9 months along with anticancer chemotherapy in the post operative period. She was given 6 cycles of combination of Doxorubicin and

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Cyclophosphamide along with hormonal treatment with good outcome.

**DISCUSSION**

The coexistence of breast cancer and tuberculosis is uncommon; the literature describes approximately 100 cases\(^1,2,3\). In cases like ours where no other source of infection can be identified during routine investigations, the only possible explanations for tuberculosis limited to the breast are either retrograde spread from the mediastinal nodes or hematogeneous spread from a subclinical focus. The left axillary lymphnodes were enlarged due to metastatic spread of cancer and tuberculosis from the left breast. Granulomatous inflammation of the breast is an inflammatory process with multiple aetiologies. It can be caused by breast cancer, tuberculosis, granulomatous mastitis [GM], sarcoidosis, fungal infections such as actinomycosis, parasites such as filariasis, Wegener’s granulomatosis, duct ectasia, brucellosis and traumatic fat necrosis\(^5,7,8\). Fine needle aspiration cytology [FNAC] from the breast lesion continues to remain an important diagnostic tool of breast tuberculosis. Failure to demonstrate necrosis on FNAC does not exclude tuberculosis in view of small quantity of the sample harvested and examined. The demonstration of acid-fast bacilli [AFB] on FNAC is not mandatory, since for AFB to be seen microscopically, their number must be 10,000-100,000/ml of material\(^4,6\). Histopathological examination from the excised specimen shows characteristic epitheloid cells, macrophages, langhans type of giant cell with central caseation necrosis with associated invasive ductal carcinoma-NOs type. Simultaneously the quantiferon TB-Gold test was found positive suggestive of latent tuberculosis. The simultaneous occurrence of carcinoma and tuberculosis can lead to many problems regarding diagnosis and treatment as there are no pathognomonic symptoms or signs to distinguish breast tuberculosis from breast cancer, especially if the upper outer quadrant is involved\(^2,7\). Most decisions in the management of breast cancer are taken based on TNM staging of the tumours. The key to proper treatment is biopsy of the lesion. If breast cancer is clinically operable, radical mastectomy is indicated, followed by postoperative antituberculous chemotherapy for 9 months, and anti cancerous treatment along with hormone therapy if found appropriate with imunohistochemistry support. If incurable, then palliative measures combined with antituberculous drugs are indicated\(^8,9\).

**CONCLUSION**

In summary, we present a rare case of invasive ductal breast carcinoma in a patient in whom the resected axillary lymph nodes showed both tuberculous lymphadenitis and metastatic breast cancer. The possibility of coexistent tuberculosis...
should be kept in mind when granulomatous lesions are identified especially in patients from endemic regions. A thorough investigation is mandatory since the presence of tuberculosis may alter the postoperative management of the patient. Prompt antituberculous drugs along with chemotherapy and radiotherapy for breast cancer changes to overall outcome and prognosis.

REFERENCES