Breast Tuberculosis: Report of Eight Cases

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Tuberculosis of the breast is an extremely rare disease, which is still present and is also misdiagnosed with carcinoma or bacterial abscesses. In this study, we reported on eight patients with mammary tuberculosis during a four-year period. The main signs and symptoms of the patients included a painful tender lump in the breast (n=4), a painless lump in the breast (n=3), a lump with sinus (n=1), a sinus without lump (n=1), and an ipsilateral axillary lymphadenopathy (n=1). The diagnosis was confirmed by fine-needle aspiration cytology or histology. Antitubercular therapy was the therapeutic mainstay. Surgical intervention was reserved for aspiration of cold abscesses, and excision of residual sinuses and masses.

Keywords: Breast tuberculosis • clinical presentation • lump

Introduction

Although over one billion people suffer from tuberculosis worldwide, mammary tuberculosis is an extremely rare condition.1 Its prevalence has been estimated to be 0.1% of breast lesions examined histologically, and it constitutes about 3 – 4.5% of surgically-treated breast diseases in developing countries.2 Moreover, the disease is not diagnosed easily because of its physical similarity to carcinoma and bacterial abscesses.3,4 In this paper, we reported on eight patients with mammary tuberculosis.

Case Reports

This study was conducted in Surgical Unit of Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, from 2002 through 2006. Eight women were diagnosed and confirmed to have breast tuberculosis. The mean age of the patients was 33 (range: 28 – 44) years. The mean duration of symptoms was 10 months (range: two weeks to six years). The right breast was involved in four, the left breast in three, and both breasts (not at the same time) were involved in one patient.

The clinical presentation of the patients is shown in Table 1. A lump in the breast was the commonest clinical presentation and was seen in all patients; one patient had multiple lumps. Half of the detected lumps were attached to the skin; the remaining was mobile. The interquartile range for the size of lumps was 2 – 5 cm. Five (63%) patients had the complaint of mastalgia. Associated axillary lymphadenopathy was detected in one patient on the same side of the involved breast.

Skin changes were seen in three patients, nipple retraction in one on both sides, and erythema in two patients.

Table 1. Symptomatology of eight patients with mammary tuberculosis.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>Breast lump (painful)</td>
<td>5 (63%)</td>
</tr>
<tr>
<td>Breast lump (painless)</td>
<td>2 (25%)</td>
</tr>
<tr>
<td>Breast lump with sinus</td>
<td>1 (12%)</td>
</tr>
<tr>
<td>Sinus without lump</td>
<td>1 (12%)</td>
</tr>
<tr>
<td>Multiple discharging sinuses</td>
<td>2 (25%)</td>
</tr>
<tr>
<td>Associated axillary lymphadenopathy</td>
<td>1 (12%)</td>
</tr>
<tr>
<td>Formerly-drained abscess</td>
<td>5 (63%)</td>
</tr>
<tr>
<td>Mastalgia</td>
<td>5 (63%)</td>
</tr>
<tr>
<td>Skin changes</td>
<td>3 (38%)</td>
</tr>
</tbody>
</table>
Biopsies (open or fine-needle aspiration [FNA]) were performed for all patients. The specimens obtained and the discharges of the sinuses were stained for acid-fast bacilli and cultured. All specimens proved negative on staining as well as culture, except one specimen which had a mild growth of Mycobacterium tuberculosis.

The diagnosis of mammary tuberculosis was confirmed by a combination of clinical suspicion and cytologic findings. All patients were subjected to a six-month course of antitubercular treatment with rifampicin, isoniazid, ethambutol, and pyrazinamide for two months followed by rifampicin and isoniazid for another four months. Surgery was carried out in six patients. The surgery included excision of mass in four patients and repeated aspirations of abscess in two patients. Five patients underwent mammography. Evidence of a lump was detected in three patients; two were found normal on mammography.

**Discussion**

Tuberculosis of the breast is extremely uncommon in developed countries. It is however more frequent in developing nations. There is a hypothesis that mammary gland tissue, like spleen and skeletal muscle, is resistant to and unsuitable for the survival and multiplication of M. tuberculosis. Mammary tuberculosis may be primary or secondary and there are three modes of spread: hematogenous, lymphatic, or direct spread. It is believed that breast infection is usually secondary to a tuberculous focus somewhere else such as pulmonary or lymph nodes, which may not be clinically or radiologically noticeable. In our patients, no one had evidence of active pulmonary tuberculosis; only one had an ipsilateral axillary lymphadenopathy, although, we do not know whether the axillary lymph node was the primary site of infection or it was secondary to the mammary tuberculosis.

The predominant clinical presentation was a breast lump with or without a sinus which is in accordance with other studies. The commonest location of the lumps is the central or upper outer quadrant of the breast. The mass can be fluctuated and is usually covered with indurated tissue. It is usually fixed to the skin and fistulization is not uncommon. Nipple and skin retraction can also occur, but breast discharge and pain are uncommon. In our patients, masses were located commonly in the lower outer quadrant (four cases) and were also equally distributed in three other quadrants and central subareolar region. Also, 50% of the lumps were fixed to the skin. Nipple retraction was seen in only one patient while breast pain was mentioned by five.

Breast tuberculosis is newly classified as nodular, disseminated, and abscess varieties. The nodular form is the commonest. In our series, all our patients had nodular tuberculosis, as they had breast lumps; two had repeated abscess as well.

The increased susceptibility to the tubercle bacilli by lactation has been reported to be 7% by Shinde et al. While Khanna et al. noted a higher susceptibility of 30%. The explanation includes the stress of child-bearing and increased vascularity of the breast which could raise the chance of infection, but none of our patients were lactating.

Early diagnosis is difficult. It warrants a high index of suspicion on clinical examination and pathologic or microbiologic confirmation of all suspected lesions. FNA cytology from the breast lesion continues to remain an important diagnostic tool of breast tuberculosis. Approximately, 73% of breast tuberculosis can be diagnosed on FNA cytology when both epithelioid cell granulomas and necrosis are present. In our experience, FNA cytology or histology was the test of choice for diagnosis of tuberculosis.

Imaging modalities, like mammography or ultrasonography are of limited value as the findings are often indistinguishable from breast carcinoma. The common mammographic findings are coarse stromal texture with or without an ill-defined breast mass and skin thickening, which all are nonspecific for making a diagnosis. A mammographic demonstration of a dense sinus tract connecting an ill-defined breast mass to a localized skin thickening is strongly suggestive for tuberculous breast abscess, but it is found in a small percentage of patients. In our study, out of five patients who underwent mammography such diagnostic evidence of tuberculous abscess was not observed, but the evidence of an ill-defined mass was detected in three patients; two others were reported normal. Similarly, computed tomography and magnetic resonance imaging are not diagnostic without histologic evidence, but may reveal the extent of involvement which would be helpful for surgery. We did not perform these techniques for our patients.

Mantoux test is usually positive in adults in
endemic areas for tuberculosis. It only demonstrates the exposure to tubercle bacilli. It is, therefore, of no diagnostic value for breast tuberculosis. We did not also perform this test as Iran is an endemic region for tuberculosis.

Also, tuberculosis should be suspected in a patient who has a recurrent breast abscess after adequate drainage on previous occasions. In our series, five patients had a history of previously-drained abscess.

Medical treatment consisting of a four-drug regimen, as in treatment of pulmonary tuberculosis, forms the mainstay of treatment. Surgical intervention is indicated for aspiration of cold abscesses and excision of residual sinuses and masses.

**References**


