INTRODUCTION

Tuberculosis (TB) is a major health problem and it is an important cause of mortality and morbidity in all age groups. Among communicable diseases, TB is the second leading cause of death worldwide. Nine million new cases of tuberculosis and nearly 2 million deaths from tuberculosis are estimated to occur every year around the world. In many African countries, the notified rate of TB has risen to more than 400 cases/100,000 population. Sir Astley Cooper in 1892 described the first case of tuberculosis of the breast. TB of breast is a relatively uncommon disease and poses diagnostic difficulties. Various reports from areas of tuberculous endemicity have reported its incidence at 3.0-4.5% of all breast lesions. Tuberculosis remained an uncommon disease even when pulmonary disease was common. Varied presentations have been reported on mammography as diffuse, nodular, sclerosing and simulating carcinoma. Although, tuberculosis of the breast is considered a disease of the developing world, a steady increase is also seen in the developed countries probably because of the migration of infected population from endemic zones and increasing number of immunocompromised patients.

The objective of this study was to determine the presentation of breast tuberculosis, diagnosis and surgical treatments.

METHODOLOGY

This was a case series, collected from Dow University of Health Sciences and TB Clinic at Bantwa Hospital, Karachi, from April 1999 to March 2007, over a period of 8 years.
Female patients, presenting with breast lump, discharging sinuses, non-healing ulcers and cold abscess of breast, diagnosed clinically as tuberculosis of breast, were selected for work-up for tuberculosis of breast. Those patients who were confirmed as a case of chronic granulomatous inflammations, chronic non-specific inflammations, with or without duct ectasia, and carcinoma of breast were excluded.

History, examination of both breasts and axillary lymph nodes were the primary diagnostic measures. Complete blood counts (CBC), ESR, Fine Needle Aspiration Cytology (FNAC) and staining for Acid-Fast Bacilli (AFB) in both smear and culture were then carried out. FNAC was done by a consultant pathologist in all those patients who presented with cold abscesses, discharging sinuses and non-healing ulcer. Ultrasound and mammogram were reported by a consultant radiologist. In those cases, where FNAC was inconclusive, core biopsy in patients with lumps more than 5 cm and wide excision biopsy in lumps less than 5 cm was carried out to confirm the diagnosis.

Anti-tuberculosis drugs (ATT) were given in all patients for a period of one year. Surgical intervention was also done where necessary. Aspiration of cold abscess, wide excision biopsy, excision of discharging sinuses, repeat aspiration in recurrent cold abscesses, excision of non-healing ulcer, and incision drainage plus biopsy from the wall of thick-walled abscesses cavity, were conducted in cases not responding to ATT.

Findings were recorded on a pre-designed research proforma made for this study.

SPSS 10 was used to analyze the data in order to determine the type, clinical presentations, side, site, investigations and surgical procedure. Primary tuberculosis of breast was defined when no evidence of tuberculosis was found in any other area of body. If evidence of tuberculosis was found in any other part of body, it was labelled as secondary tuberculosis of breast.14,16

RESULTS

A total of 30 female patients fulfilling the inclusion/exclusion criteria were selected. Mean age was 28.4±8.4 years, ranging from 16 to 48 years. Mean hemoglobin was 10.1±1.5 gm/dl and mean ESR was 45.7±17.7 mm.

Involvement of left breast and right breast was also seen in 14 (46.7%) patients each, while bilateral breast involvement was present in 2 (6.7%) cases, details of type of tuberculosis, clinical presentations side, site, investigations and diagnosis are given in Table I. Primary tuberculosis of the breast was present in 19 (63.3%) cases and secondary tuberculosis of breast in 11 (36.6%), out of which tuberculous axillary lymphadenitis was present in 7 (23.3%). Pulmonary tuberculosis was seen in 4 (13.3%). Discharging sinuses were seen in 14 (46.6%) patients. Cold abscesses were found in 8 (26.6%) and non-healing ulcer in 2 (6.6%). Five (16.6%) cases were lactating mothers.

Unifocal disease was present in 27 (90%) cases while multifocal disease was present in 3 (10%).

Mantoux test was positive in 5 (16.6%). Both AFB smears and culture were positive in 3 patients (10.0%) while only AFB culture was positive in 4 (13.3%) patients. Core biopsy diagnosed 5 patients with lump measuring more than 5 cm. Wide excision biopsy was done in 7 (23.3%) patients with lumps measuring less than 5 cm and suspicious of malignancy (Table I).

Details of surgical procedures is given in Table II.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspiration of cold abscess</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Wide excision biopsy</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td>Excision of discharging sinuses</td>
<td>2</td>
<td>7.6</td>
</tr>
<tr>
<td>Repeat aspiration of recurrent abscess</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Incision drainage and biopsy from wall of abscess cavity</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Excision of non-healing ulcer</td>
<td>1</td>
<td>3.33</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>70.00</td>
</tr>
</tbody>
</table>

DISCUSSION

Tuberculosis of the breast is a rare disease. Cohen described 34 tuberculous breast lesions in 1977.17 It can
clinically simulate many diseases of breast like carcinoma, chronic granulomatous inflammation, chronic non-specific inflammation and duct ectasia.\textsuperscript{6,12,18-20} It is advisable that tuberculosis should be considered in the differential diagnosis of breast lumps especially in areas where the tuberculosis is endemic.\textsuperscript{21}

Mammary tuberculosis may be primary or secondary and there are three modes of spread: haematogenous, lymphatic, or direct. Primary breast tuberculosis is rare; a study from Qatar reported 13 cases during 10 years with the incidence of 0.4%/year.\textsuperscript{9,15} Although secondary breast TB is more common than primary breast TB, this series had a high frequency of primary breast TB at 63.3%. This could be due to the selection criteria because the current study only recruited patients presenting with breast involvement. Usually the disease involves one breast, but bilateral breast TB has been reported upto 30% of cases.\textsuperscript{13} In this series, 6.7% cases presented with bilateral disease. Multi-focal TB with involvement of breast has also been reported.\textsuperscript{22,23} In this series, multi-focal tuberculosis along with breast involvement was present in 10% of cases.

Increased in the susceptibility to the tubercle bacilli by lactation has been reported. Gupta et al. found a correlation between prevalence of tuberculosis in the faucial tonsils of suckling infants and higher incidence of tuberculosis in lactating women.\textsuperscript{24}

Common clinical presentations of breast TB include breast lump with or without lymph node involvement, cold abscess or recurrent abscesses, discharging sinuses, non-healing ulcer and mammary fistula.\textsuperscript{7,11,13,15} There are three clinical varieties of mammary tuberculosis, namely nodular, disseminated, and sclerosing. The nodular variety is often mistaken as fibroadenoma or carcinoma. The disseminated variety commonly leads to caseation and sinus formation. Primary tuberculosis of the breast may mimic carcinoma.\textsuperscript{18} In this study, 5 cases were suspicious of malignancy both clinically and on mammogram but turned out to be tuberculous mastitis on histopathology. In those cases, minimal surgical intervention could save the breast.\textsuperscript{9} Mammography is not able to differentiate TB breast from malignancy and in such cases histopathology is the final decision.\textsuperscript{11} Even FNAC could be misleading in some cases where its findings could resemble with plasma cell mastitis, fat necrosis and actinomycosis and there is a debate if this tool should be abandoned in evaluation of breast masses.\textsuperscript{25,26} Current study showed the confirmatory role of FNAC in 43.3% of cases by AFB smear, culture and cytology.

Anti-tuberculosis treatment with 4 drugs was initiated to all patients including rifampicin, isoniazid, ethambutol, pyrazinamide for 8 weeks. In patients, who presented with multi-focal tuberculosis, streptomycin was also given for a period of 8 weeks.\textsuperscript{27,28} Follow-up therapy with 2 drugs was continued for 40 weeks. However, majority required surgical management.

**CONCLUSION**

Tuberculosis of the breast is a rare non-malignant pathology, resemble very closely with carcinoma breast and granulomatous mastitis. Ultrasound and mammogram are helpful but could misreport as carcinoma. Mantoux, AFB smears and culture can diagnose the disease. Biopsy is the gold standard to confirm the diagnosis.

**REFERENCES**


Spectrum of breast tuberculosis


