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Tuberculosis of breast: an Indian scenario

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ABSTRACT

Background: Tuberculosis of breast is quite rare in relation to all breast pathology that we encounter in our daily practice. Ever since it was first described in 1829 many reports have been published. There has been an increasing incidence since the resurgence of AIDS.

Methods: This study was done to see the incidence, presentation and investigative modality of tuberculosis of breast in our hospital.

Results: A total of 986 patients out of which 585 were fibrocystic breast disease, 238 were malignant, 84 cases presented as abscess, followed by 45 cases as galactocele. 34 cases were diagnosed as tuberculosis of breast. Presentation of tuberculosis of breast was lump 19cases. 9 cases presented as abscess of breast, 4 cases had discharging sinus out of which 2 had developed them after being operated elsewhere for benign breast lump and abscess. Core needle biopsy was done in 4 cases with 2 cases coming out to be positive. Incisional biopsy was done on 2 cases which had come with mutilated breasts and they were positive for tuberculosis. 2 patients underwent excision of small lump diagnosed as fibroadenoma on FNAC, which came out as tuberculosis on biopsy. FNAC of the axillary lymph node showed a positivity rate of 43%. 9 cases were negative.

Conclusions: Thus, breast lesions has to be dealt with carefully keeping in mind tuberculosis of breast, as it is a potentially curable disease and we can avoid a lot of morbidity if we can diagnose and start early ATT.

Keywords: Breast lump, Breast abscess, Extra nodal tuberculosis, Extra pulmonary tuberculosis, Tuberculosis of breast

INTRODUCTION

Tuberculosis though a worldwide problem has been decreasing in its incidence. There has been a recent resurgence because of increasing immunocompromised and HIV patients and development of drug resistant strains. Extramammary involvement is expected to show an increasing trend.

Breast tissue is resistant to tuberculosis as is spleen and skeletal muscle. Thus tuberculosis of breast is quite uncommon with an incidence of <0.1% in the western

countries.²⁻⁴ In developing country like India it still occurs at a rate of 1-4%.⁵ The disease affects females in the younger age group, pregnancy and lactational period being the periods of highest risk.^{6,7} The most common presentation is the nodulocasseous variety.

Contrary to previous clinical presentations there has been change in the presentation in the recent studies especially in India. We started this study to see for any difference in the incidence of tuberculosis of breast, age and risk factors ,and clinical manifestation along with investigation protocol for it.

METHODS

This study was carried out in IMS and SUM Hospital, a tertiary care hospital, Odisha during the period 2016and 2017, in the Department of General Surgery.

Inclusion criteria

All the patients who came to our OPD with the complaints related to breast.

Exclusion criteria

Patients who had been diagnosed and operated outside.

The patients were categorized by their age. The patients were initially clinically examined, and a provisional

diagnosis reached. They were sent for mammography where indicated. We did FNAC as the initial investigation and core needle biopsy if FNAC was inconclusive.

In the case of abscess of breast, the pus was sent for culture and sensitivity and for ZN stain for AFB. Those cases presenting with axillary LN, we also did FNAC of the nodes. Incisional biopsy was done where needed. The results were tabulated.

RESULTS

We studied a total of 986 patients, out of which 585 (59.3%) were fibrocystic breast disease, 238 (24.1%) were malignant, 84 cases (8.5%) presented as abscess, followed by 45 cases (4.5%) as galactocele. 34 cases (3.4%) were diagnosed as tuberculosis of breast.

Table 1: Age distribution of patients presenting with breast lesions (n = 986).

	Fibrocystic disease	Abscess	Ca breast	Galactocele	Tb
Age	(n=585)	(n=84)	(n = 238)	(n=45)	(n = 3.4)
(years)	(59.3%)	(8.5%)	(24.1%)	(4.5%)	(3.4%)
<20	205	4	0	3	3
20-40	263	54	45	27	22
40-60	86	20	84	15	6
>60	31	6	109	0	3

Table 2: Clinical presentation of tuberculosis of breast (n = 34).

Presentation of breast disease	Number of cases	Percentages of cases
Lump	19	55.8
Abscess	9	26.4
Sinus	4	11.7
Ulcer	2	5.8
Axillary LN	16	47.0
H/o pulmonary TB	3	8.8
Contact history	1	2.9
Previous surgery	2	
Lactation	2	5.8
Pregnancy	0	
Trauma, etc.	0	

Majority of cases of tuberculosis of breast were seen in the age group of 20-40 years (22 cases; 64.7%); 6 cases (17.6%) were in the age group of 40-60 years. We had 3 cases (8%) each in the age group of below 20 years and above 60 years. There were no male patients in this study. The most common type of presentation of tuberculosis of breast was lump 19 cases (55.8%). 9 cases (26.4%) presented as abscess of breast, 4 cases (11.7%) had discharging sinus out of which 2 had developed them

after being operated elsewhere for benign breast lump and abscess. 2 cases (5.8%) had lump along with ulcer. Axillary lymphadenopathy was present in 16 (47%) patients. 3 patients (8.8%) gave a history of having taken ATT for pulmonary tuberculosis in the past with due completion of the course. 1 patient (2.9%) gave a history of contact with tuberculosis patient.

Table 3: Investigations.

	Total cases	Positive	Negative
FNAC	34	19 (55.8%)	15 (44.1%)
CNB	4	2 (50%)	2 (50%)
Incisional biopsy	11	11 (100%)	0
Excisional biopsy	2	2	0
FNAC of axillary LN	16	7 (43.7%)	9 (56.2%)

Table 4: Treatment.

Mode	Number
ATT only	21
Drainage with ATT	9
Excision with ATT	2
Simple mastectomy	2

The first line of investigation that was done was FNAC. Out of the total 34 cases sent for FNAC, 19cases (55.88%) came out to be positive for tuberculosis while 15 cases (44.11%) were negative. Core needle biopsy was done in 4 cases with 2 cases (50%) coming out to be positive. None of the abscess cases could be diagnosed with FNAC and ZN stain. During drainage of the abscess (9 cases) we had taken biopsy of the walls as is mandatory in our setup which showed caseating granulomas on HP study. Incisional biopsy was done on 2 cases which had come with mutilated breasts and they were positive for tuberculosis. 2 patients underwent excision of small lump diagnosed as fibroadenoma on FNAC, which came out as tuberculosis on biopsy. FNAC of the axillary lymph node showed a positivity rate of 43.75% (7 cases out of 16). 9 cases were negative (56.25%).

DISCUSSION

Tuberculosis affects many organs of the body. Some tissues are resistant to tuberculosis like spleen, skeletal muscle and breast.¹ Mammary tuberculosis was first described by Sir Astley Cooper in 1829 who termed it as "scrofulous swelling of the bosom".⁸ Since then many studies have been done.

Incidence of mammary tuberculosis varies in developed countries and in endemic areas like India. In the western countries the incidence is <0.1%.²⁻⁴ Morgan in 1931 reported an incidence of 0.5% to 1.04%. 9 Klossner reported 50 cases out of the total 75000 cases of pulmonary tuberculosis studied in 1944. 10 Hagensen reported 5 cases between 1938to1967. Mammary tuberculosis in the Indian subcontinent varies from 1-4% in the different studies. Chaudhury et al in 1957 reported an incidence of 13 cases out of 433 patients studied. 12 Other series reported an incidence of 0.64-3.59%. 1,13 Study by Tewari and Shukla reported an incidence of 2.5%. 14 In the present study, we found an incidence of 34 cases (3.4%) out of total 986 cases of breast diseases. Gupta et al in their study found a male incidence of 3.75%.15 In the present series we didn't find any male cases. Risk factors for tuberculosis of breast are lactation, multiparity, trauma, TB and AIDS. 16,17 In the present study, past history of pulmonary tuberculosis was found in 3 cases (8.8%). 2 patients (5.8%) were lactating. Breast tuberculosis commonly affects women in the age group of 21-30 years, in the reproductive age group. 6,17 It is usually not seen in the prepubescent and elderly women.¹⁸ Bilateral disease is seen in 3% of cases.⁷ In the present study the age incidence of tuberculous mastitis was 20-40 years. We did not find any cases of bilateral diseases.

Most common presentation of tuberculous mastitis is lump. 19,20 It is found in the central and upper outer quadrant. 17 The lump is irregular, firm to hard, mobile. 6 Fixity may be to the skin, or deeper structures. Other presentations of tuberculosis of breast are abscess, ulcer,

multiple sinuses discharging pus, nipple discharge. Axillary nodal involvement may be present in 50-75% of cases.²¹ In the present study, we had 55.8% of cases presenting with lump. 5.8% had ulcers and 26.4% presented with abscess. 11.7% had sinuses out of which 2 patients presented with sinuses after some surgical procedures. Axillary lymphadenopathy was found in 47% of cases.

Mckeown and Wilkinson classified tuberculosis of breast as primary when there was no other focus of tuberculosis in the body and secondary when some other site was involved.²² Primary form was stated to be quite rare by the report of Vassilakos.²³ In the present study we had only 8.8% cases who had history of pulmonary tuberculosis. The rest of the cases were primary variety. Mckeown and Wilkinson has also classified tuberculosis of breast into five types:

- Nodular tubercular mastitis
- Disseminated tubercular mastitis
- Sclerosing tubercular mastitis
- Tuberculous mastitis obliterans
- Acute military tubercular mastitis

The most common variety encountered is the nodulocasseous variety. Dubey and Agarwal reported a incidence of 16 cases presenting as nodulocasseous out of 20 cases while Dharkar et al. had all of his cases as nodulocasseous variety. 13,24 Mukherjee et al reported an incidence of 64.2%.1 In the study of Tewari and Shukla incidence of nodular variety was also the most common.¹⁴ Disseminated variety though reported was quite rare. Presentation as breast abscess is quite commonly encountered in Indian women. Shukla and Kumar in their study found abscess to be quite common.¹⁷ Tewari et al. found an incidence of 26.6% presenting abscess.14Because of changing trends of clinical presentation a new classification system has been proposed by Tewari and Shukla.¹⁴ They have classified tuberculosis of breast as:

- Nodulocasseous
- Disseminated
- Abscess.

In the present series of patients, we had 55.8% presenting as nodular, and 26.4% presented with abscess. Tuberculosis of breast was found to involve 10% cases of breast abscess presenting to our hospital. Association of breast abscess with pulmonary tuberculosis is only 8.8%. Various investigations are used to assess the breast. Role of USG and Mammography is very limited in tuberculosis of breast. The initial diagnostic method for tuberculosis of breast is FNAC. About 75% of cases of tuberculosis of breast can be diagnosed on FNAC when both epitheloid granuloma and casseous necrosis was present. ^{25,26} In the present study we found FNAC to be positive in 19 cases (55.88%). Core needle biopsy gives more material for histopathology study. In the present

series, we sent 4 cases for CNB where the FNAC was in conclusive. Out of these 2 cases (50%) came out to be positive for TB. CT scan and MRI has been mainly used to detect extramammary involvement of tuberculosis. 27-30 In our series 1patient was sent for CT. She had been operated multiple times for abscess and fibrocystic breast disease and presented with a hard-indurated mass with multiple discharging sinuses with fixity to the underlying deep structures. The gold standard for the diagnosis of tuberculosis of breast is detection of Mycobacterium tuberculosis by ZN Stainor by culture. Culture is usually negative in cases of paucibacillary specimen.² Several rapid methods of early mycobacterial growth (5-14days) have been described like BACTEC, MGIT. In the present series no patients had positive ZN stain. No culture was sent. PCR has been used for diagnosis of tuberculosis in culture negative specimen. PCR has a positivity of 40-90% in TB lymphadenitis. 31 In the present series of cases we have not taken the help of PCR. Incisional biopsy during draining of abscess is routinely performed in our hospital. We found 9cases (26.4%) positive for TB out of the total 84 cases of abscess presenting to our OPD. Excisional biopsy is used for small lesions along with ATT. Simple mastectomy was previously being done for treatment failures or mutilating breast diseases.³²⁻³⁴ We had to do mastectomy for 2 cases who had previously undergone surgery multiple times and had presented with mutilated breast. All the patients were put on ATT regimen.

CONCLUSION

Breast tuberculosis is quite uncommon even in countries like India. There has been no increase in the incidence though the clinical manifestation has changed. As there are no clearly defined clinical features it is usually suspected to be carcinoma or abscess. After the nodulocasseous variety, abscess as presenting clinical feature is quite common. Abscesses of the breast are usually drained after an initial FNAC which shows inflammatory cells and the patients present late with sinuses. Thus, breast lesions have to be dealt with carefully keeping in mind tuberculosis of breast, as it is a potentially curable disease and we can avoid a lot of morbidity if we can diagnose and start early ATT. Patients are saved a unwanted and mutilating surgery.

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Institutional Ethics Committee

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