

Breast Tuberculosis: Still Common In India

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Abstract

Breast tuberculosis is a rare form of tuberculosis. In last three years 1016 patients of breast lump were referred to single unit of pathology department. FNAC was performed in all the cases and 770 patients (75%) were diagnosed as benign breast disease while 246 patients (25%) were malignant. Out of 770 cases of benign disease, 42 patients (4.13%) had tuberculosis of breast. The mean age of the patient with tuberculosis was 33.71 year. 41 patients were female and one was male. 8 patients (19.04%) were lactating at the time of presentation. Most of these lumps were clinically misdiagnosed as benign breast disease (29cases) or malignancy (8 cases). In conclusion, although breast tuberculosis is extremely rare in developed countries but it is still common in developing countries like India. The diagnosis can be easily made from the FNAC of the suspected lump.

INTRODUCTION

Tuberculosis is a worldwide problem with high incidence in endemic area such as India and East Asia (1). Progress in antituberculous chemotherapy, socioeconomic improvement, and proper isolation of patients has lead to a decline in the incidence of tuberculosis during the past few decades. Recently, tuberculosis has increased in many industrialized countries due to increased number of immunocompromised and AIDS patients. As the incidence of tuberculosis increases, an increase in extrapulmonary involvement can be expected (2,3,4). In earlier reports from the developing countries show the incidence of breast tuberculosis is 3-4.5 %, but it is rare in developed countries (0.6-1.6 %)(5,6). The present study gives the spectrum of benign breast lump with extent of tubercular mastitis prevalent in India.

MATERIAL AND METHOD

During the period of three years between September 2001 to August 2004, 1016 breast lumps were referred to single unit of pathology department for FNAC. FNAC was performed in all patients using 22gauge disposable needle attached to 10ml plastic syringe. Two to three different areas in breast lump were aspirated in each case. Three to four slides were prepared per case, two were fixed in methanol for Papinicolaou staining and the remaining slides were air dried for May-Grunwald-Giemsa stain. After the slides were screened, Ziehl – Neelsen staining for AFB was done in every patient of tubercular lesion.

RESULTS

Out of 1016 breast lump cases, 770 (75%) were benign and 246 (25%) were malignant. The spectrum of benign breast disease is shown in Table 1. Fibroadenosis was the commonest benign lump (42.46%), followed by fibroadenoma (30.25%). The mean age of the patient with fibroadenosis was 30.43 year and fibroadenoma was 23.92 year.

Figure 1

Table 1: Spectrum of Benign Breast Lump (n=770)

Benign Breast Disease	No. of cases (%)	Mean age(year)
Fibroadenosis	327(42.46)	30.43
Fibroadenoma	233(30.25)	23.92
Fibrocystic disease	82(10.64)	37.43
Breast abscess	35(4.54)	25.61
Galacto cele	15(1.94)	22.33
Tuberculosis	42(5.45)	33.71
Others	36(4.67)	29.32

Tuberculosis of the breast was diagnosed in 42(4.13%) patients. The mean age of the patient with breast tuberculosis was 33.71 year. One was male and 41 were female. Eight female were lactating at the time of presentation. 12 patients of tubercular mastitis were misdiagnosed clinically as fibroadenoma, 17 patients as fibroadenosis and 8 patients as carcinoma breast. The cytological pictures of tubercular lump are shown in table 2.

Figure 2

Table 2: The Cytological picture of tubercular breast lump (n=42)

Smear Pattern	No. of cases (%)	AFB (+ve)
Epitheloid cells, lymphocytes	18(42.85%)	13
Epitheloid cells, giant cells	3(7.14%)	2
Epitheloid cells, giant cell and necrosis	4(9.52%)	3
Epitheloid cells and necrosis	15(35.71%)	9
Necrosis, polymorphs, lymphocytes	2(4.76%)	1
Total	42	28

DISCUSSION

In India 9-10 million people suffers from pulmonary tuberculosis but only few hundred cases of breast tuberculosis are reported which is probably because of lack of awareness of manifestation of disease or misdiagnosis (7,8). The other cause of low incidence of breast lesions when compared to other foci of tuberculosis may be result of high resistance offered by mammary gland tissue to the survival and multiplication of the tubercle bacillus, a resistance similar to that offered by spleen and skeletal muscle (6,8). Sir Astley Cooper made the first description of breast tuberculosis in 1829 as the 'scrofulous swelling of the bosom' (9).

Breast tuberculosis is either of primary etiology, when no demonstrable tuberculosis focus exists or secondary to pulmonary tuberculosis. Breast tuberculosis usually affects the younger women usually between 20-40 year of age (5). In present study the mean age was 33.71 year. It is relatively uncommon in older women and prepubertal girls (5). It can rarely affect the male (4%) (10). One male patient has breast tuberculosis in our study. Both breasts are reported to be involved with equal frequency (11). Bilateral involvement is rare, present in 3 % cases (8). None of the patient in our series had bilateral involvement. Women during lactation period are more susceptible since lactating breast is more vascular and predisposed to trauma (8).

The lump is the commonest presentation in breast tuberculosis (12). These breast lumps are mostly misdiagnosed as fibroadenoma, fibroadenosis or malignancy. Lump in breast tuberculosis is also common in upper outer quadrant of breast as in carcinoma (13). Multiple lumps are less frequent. Tubercular lumps are irregular, ill defined, hard similar to that seen in carcinoma. Pain is usually dull, constant ache and is more frequent than in carcinoma patients (8, 11). In our series 12 patients were clinically misdiagnosed as fibroadenoma, 17 as

fibroadenosis and 8 as carcinoma. Nipple and areola involvement is rare in breast tuberculosis but more frequent in breast carcinoma. Nipple retraction and peau d'orange can also be seen in breast tuberculosis.

X-ray chest may reveal evidence of active or healed lesion in the lungs, but it is present only in few cases. Mantoux skin test is usually positive in adults in endemic areas; therefore it is of no diagnostic value. Mammogram is of limited use as findings in breast tuberculosis are nonspecific. Furthermore they are often indistinguishable from those seen in malignancy. Ultrasonography is useful in characterizing the ill-defined densities shown on mammography and differentiating the cystic from the solid mass. It reveals heterogeneous, hypoechoic, fluid containing masses with internally floating and echogenic material in the breast parenchyma or retromammary region (15,16). Ultrasound guided fine needle aspiration can be done for cytological and microbiological studies (16). CT- scan is used to differentiate primary tuberculosis from secondary tuberculosis of breast and to demonstrate contiguity of the breast lesion with the pleural cavity (16). MRI may be useful in demonstrating the extramammary extent of the lesion (17,18).

The definite diagnosis of breast tuberculosis is made by cytological studies or bacteriological cultures of aspirate from the lesion. The histological examination of tissue obtained by biopsy can also give the diagnosis. The facility of culture is not available in every hospital. Moreover it is positive in only 25-30 % cases (19). Fine-needle aspiration cytology (FNAC) is proving very useful in diagnosis of breast lumps with or without nodes (20,21). The presence of epitheloid cell granulomas and caseous necrosis is diagnostic. The demonstration of acid-fast bacilli (AFB) is not a must as for bacilli to be demonstrated microscopically, their number must be 10,000-100,000/ml of material (22). Failure to demonstrate necrosis on FNAC does not exclude tuberculosis in view of small quantity of the sample examined. Thus in the cases with only demonstrable epitheloid granulomas on smears that are negative for AFB, a diagnosis of granulomatous inflammation, possibly tuberculosis could be made (20). In breast abscess like picture dominated by acute inflammatory exudates, AFB positivity or histological confirmation is mandatory to call the lesion tubercular (21).

Tubercular mastitis is a type of granulomatous inflammation. Kessler and Wolloch in 1972 (23) describe in details about the granulomatous mastitis. In this condition,

the granulomatous inflammatory reaction consisting of epithelioid and giant cells is confined to the breast lobules in which there is also leukocyte infiltration and abscesses but no caseation. The other causes of granulomatous mastitis are plasma cell mastitis, fat necrosis, mycosis mastitis, metazoal mastitis, sarcoidosis and indigenously granulomas due to rupture of milk cyst^(24,25). In plasma cell mastitis, there is inflammation in the breast tissue in response to the irritative quality of fatty material accumulated in dilated ducts. The granulomatous reaction in traumatic fat necrosis is confined to the broken down fat globules⁽²⁵⁾.

Breast tuberculosis is still prevalent in developing countries. Presentation may mimic benign lesion or malignancy of breast. Diagnosis is made on high index of suspicion in endemic area. FNAC or biopsy is required for definitive diagnosis. The anti-tubercular chemotherapy is the sheet anchor of treatment of breast tuberculosis.

References

1. Tuberculosis. Bull WHO (Suppl.2) 1998; 76; 141-143.
2. Wilson JP, Chapman SW. Tuberculous mastitis. Chest 1990; 98; 1505-1509.
3. Hartstein M, Leaf HL. Tuberculosis of the breast as a presenting manifestation of AIDS. Clin Infect Dis 1992; 15; 692-693.
4. Al-Marri MR, Almoslesh A, Almoslmani Y. Primary tuberculosis of the breast in Qatar: ten year experience and review of the literature. Eur J Surg 200; 166; 687-90.
5. Shinde SR, Chandawarkar RY, Deshmukh SP. Tuberculosis of the breast masquerading as carcinoma: A study of 100 patients. World J Surg 1995; 19; 379-381.
6. Hamit H.F., Ragsdale T.H. Mammary tuberculosis. J.R. Soc. Med. 1982; 75; 764-5.
7. Park JE, Park K. Text book of Preventive and Social Medicine 7th edition, Jabalpur. India, Ms. B. Bhanot. 1979, p.344.
8. Banerjee SN, Ananthakrishnan N, Mehta RB, Prakash S. Tuberculous mastitis: a continuing problem. World J. Surg. 1987; 11; 105-9.
9. Cooper A. Illustrations of the Diseases of the Breast, Part I London, Longman, Rees, Orme, Brown and Green. 1829. p. 73.
10. Morgan M. Tuberculosis of the Breast. Surg. Gynaecol. Obst. 1931; 53: 593-605.
11. Dubey MM, Agarwal S. Tuberculosis of the breast. J Indian Med. Assoc. 1968; 51; 358-9.
12. Alagaratnam TT, Ong GB.: Tuberculosis of the breast. Br. J Surg., 1980; 67: 125-6.
13. Oh KK, Kim JH, Kook SH. Imaging of tuberculous disease involving breast. Eur. Radiol. 1998; 8; 1475-80.
14. Crowe DJ, Helvie MA, Wilson TE. Breast Infection. Mammographic and sonographic findings with clinical correlation. Invest. Radiol. 1995; 30; 582-7.
15. Bassett LW, Kimme-Smith C. Breast Sonography. Am J Roentgenol. 1991; 156; 449-55.
16. Chung SY, Yang I, Bae SH, Lee Y, Park HJ, Kim HH, Im JG. Tuberculous abscess in retromammary region: CT findings. J. Comput. Assist. Tomogr. 1996; 20(5): 766-9.
17. Bhatt GM, Austin HM. CT demonstration of empyema necessitates. J Comput Assist Tomogr. 1985; 9: 1108-9.
18. Heywang SH. Contrast-enhanced MRI of the breast Karger, Basel. 1990.
19. Kaiser WA. False positive results in dynamic MR mammography: causes, frequency and methods to avoid. Magn Reson Imaging Clin North Am Breast Imaging 1994; 2; 539-555.
20. Gupta D, Rajwanshi A, Gupta SK, Nijhawan R, Saran RK, Singh R. Fine needle aspiration cytology in the diagnosis of tuberculous mastitis. Acta Cytol. 1999; 43; 191-4.
21. Kakkar S, Kapila K, Singh MK, Verma K. Tuberculosis of the Breast: A cytomorphologic study. Acta Cytol 2000; 44; 292-6.
22. Pagel W, Simmonds FAH, Macdonald J, Nassan E: Pulmonary Tuberculosis. Fourth edition, London, Oxford University Press, 1964; p.245.
23. Kessler E., Woolloch Y. Granulomatous mastitis. : a lesion clinically simulating carcinoma. Am. J. Clin. Pathol. 1972; 58; 642-6.
24. Symmers WSC: Tuberculosis of the breast. Br. Med J 1984; 289; 48-49.
25. Goksoy E, Duren M, Durgun V, Uygun N. Tuberculosis of the Breast. Eur J Surg 1995; 161; 471-3.

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