

Tuberculosis Of The Breast (Case Report And Review Of Literature)

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Citation

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Abstract

Background: Tuberculosis of the breast, which was once upon a time a rare disease, has become quite common especially in the developing world, where tuberculosis is still a major health care problem. The condition can mimic a variety of other conditions of the breast ranging from septic conditions to malignancy.

Introduction: Awareness of the modes of presentation, diagnostic difficulties and treatment is essential to prevent misdiagnosis.

Case descriptions: A series of 2 cases is presented to highlight the variability in presentation.

Discussion: The pathology, clinical presentation, diagnostic modalities and their pitfalls along with therapeutic options are discussed.

Conclusion: The differential diagnosis of tuberculosis of the breast should be kept in mind during the course of diagnosis of the entire spectrum of breast diseases ranging from sepsis to cancer.

INTRODUCTION

Tuberculosis still continues to be a major health problem in the developing world. Tuberculous mastitis is a rare extrapulmonary presentation with an incidence as high as 4% on the Indian subcontinent. [1] The disease was first described by Sir Astley Cooper in 1829. Sir Astley Cooper described tuberculous mastitis as a scrofulous swelling in the bosom of young women. [1] It usually affects young multiparous women during their reproductive age. The diagnosis many a times poses a dilemma due to its similarity of presentation with a spectrum of diseases ranging from fibroadenomas to carcinoma. A series of two cases of tuberculosis of the breast is presented with a brief review of literature.

CASE REPORTS

Case 1: A 44-year-old lady presented with a mass developing in the left breast over a period of 1 month. There was no history of any trauma or any discharge from the nipple. There was no past history of such a lump nor was there any family history of similar disease. However, constitutional symptoms of mild fever, malaise and anorexia

were present over a period of 15 days. Physical examination revealed a firm mass measuring approximately 7cm x 6cm occupying the upper portion of left breast underlying the upper part of the left nipple. (Fig 1) The areola was normal. The swelling was freely mobile within the breast and was free from the overlying skin and the underlying pectoral muscle. Ipsilateral and contralateral axilla along with the contralateral breast did not reveal any lump. Hematological investigations did not reveal any abnormality. The ESR was 40mm at the end of one hour. HIV status was negative. Chest x-ray did not reveal any abnormality such as active tuberculosis or scarring of previous tuberculosis. PCR and staining for acid-fast bacilli were negative. FNAC of the lump revealed features pathognomonic of tuberculosis of breast. (Fig 2) The patient was started on an intense phase 4 drug anti-tuberculosis treatment for the initial two months. This was followed by a continuation phase of two drugs anti-tubercular therapy for the next 7 months. There was complete resolution of symptoms and the lump.

Case 2: A 33-year-old female presented with a discharging wound on the right breast adjacent to the right areola. She gave history of a lump preceding the development of the

lesion and had sought treatment for this wound from a primary care physician. However, the response to treatment was poor. She was then referred to our surgical unit. The patient had previous history of pulmonary Koch's disease for which she had received a complete course of anti-tuberculosis treatment five years back.

Physical examination revealed a sinus discharging seropurulent fluid. (Fig 3) There was an underlying lump measuring 4cm x 3cm, which was mobile and free of underlying pectoral musculature. The ipsilateral axilla did not reveal any lymphadenopathy. Contralateral breast and axilla did not reveal any lump.

Hematological investigations did not reveal any abnormality except for an ESR of 110mm at the end of one hour. HIV status was negative. Chest x-ray was normal. Examination of the discharge fluid did not reveal any acid-fast bacilli. PCR testing was also negative. FNAC of the lump showed features pathognomonic of tuberculosis. (Fig 4) The patient was started on 4 drug intense anti-tuberculosis treatment for two months followed by two drug therapy for the remaining 7 months. There was complete recovery with healing of the sinus. She did not require any surgical intervention.

Figure 1

Lump in the left breast



Figure 2

Granuloma revealing epithelioid histiocytes on FNAC (H&E, x40)

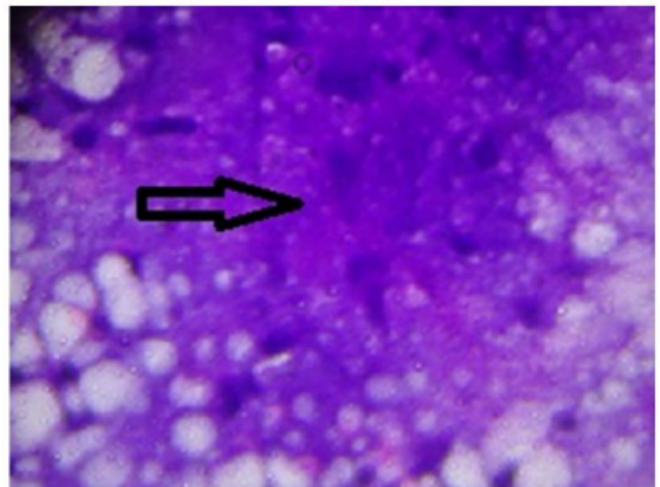


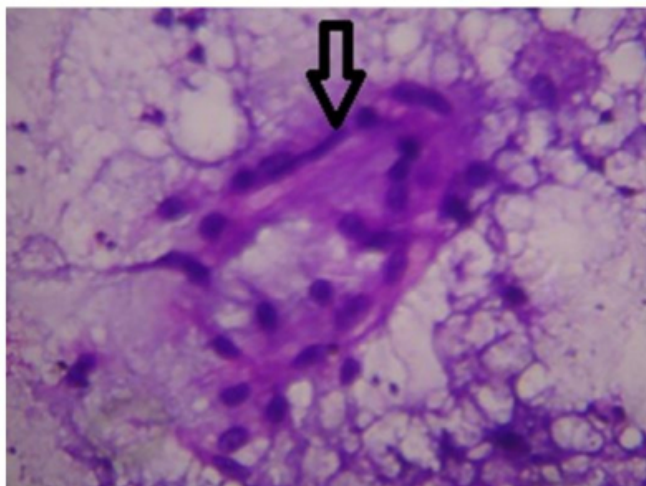
Figure 3

Sinus opening seen adjacent to the nipple



Figure 4

Photomicrograph showing lymphoepithelioid aggregates (H&E, x40)



DISCUSSION

Tuberculosis of breast is a conspicuous disease of the breast especially in the developing world. Understanding the pathology of the disease is pivotal in diagnosis of the lesion. Tuberculosis of the breast can be primary or secondary. In the primary form there is no antecedent history of tuberculosis in any other organ system, whereas in the secondary form there is always previous history of tuberculosis.

There are various ways by which the infection can reach the breast. Tuberculous involvement of breast occurs either by direct inoculation of bacilli through an abrasion in the nipple, which is quite rare, or commonly via lymphatic, haematogenous or contiguous seeding. [2, 3] The lymphatic route is most likely to be involved, which occurs by retrograde extension from axillary lymph nodes. Contiguous spread occurs from ribs, pleural space or rectus sheath, or from an intra-abdominal source. Hematogenous spread is rare and occurs in case of disseminated tuberculosis. The pathological concepts underlying tuberculosis of the breast have evolved over a period of time. Many attempts have been made to classify lesions of tuberculosis of breast pathologically. The traditional classification described five forms of tuberculosis of the breast. [2] The nodular form is the commonest, presenting as nodular mass, which progresses to involve the skin, eventually leading to sinuses. The diffuse or disseminated form involves the entire breast, which caseates, leading to ulceration and discharging sinuses. Ipsilateral lymphadenopathy is commonly seen. The third type is the sclerosing variety which demonstrates

extensive fibrosis rather than caseation rendering the entire breast hard with a retracted nipple. This pattern is commonly mistaken for carcinoma of the breast. The next forms are tuberculous mastitis obliterans, wherein duct infection produces proliferation of the lining epithelium and marked periductal fibrosis. The ducts are usually obliterated. Acute miliary tuberculous mastitis, which is the last variant, is a part of generalised miliary tuberculosis. Both these forms are rarely seen nowadays. Hence this has led to the modification of this traditional classification system, wherein only three categories are described viz., nodular, disseminated and abscess variety [3], the nodular and disseminated variety being commonly seen. In the cases presented, the lesion in case 1 was of the nodular variety, whereas the lesion in case 2 was of the disseminated type.

The disease is usually seen in women of active reproductive age, who are multiparous, lactating or have past history of suppurative mastitis. It is also frequently seen in patients suffering from AIDS. [4, 5] The duration of symptoms prior to diagnosis may be prolonged. The commonest clinical presentation is a solitary ill-defined unilateral lump which at times may be quite firm, occupying the central or upper outer quadrant of the breast. The lump is freely mobile, thereby simulating a fibroadenoma of the breast. Caseation leading to suppuration and sinus formation mimics suppurative lesions of the breast such as breast abscess. The lesion at times could be indistinguishable from cancer due to its irregular and hard consistency or even due to its fixity to the chest wall. Nipple retraction, peau d'orange and involvement of axillary lymph nodes is diagnostic of carcinomatous lesions, whereas constitutional symptoms such as low-grade fever, malaise and anorexia accompanied by a mobile lump, multiple sinuses but an intact nipple areola complex are diagnostic of tuberculosis. [5] Past history of tuberculosis may be supportive in the diagnosis of tuberculosis. Co-existence of carcinoma and tuberculosis has also been reported making the diagnosis more intricate. [6, 7]

Hematological investigations may not be of much help. A raised ESR may be the only positive finding in the majority of cases as in the cases presented.

Radiological investigations are only suggestive. There are no pathognomonic radiological signs in tuberculosis. USG usually reveals heterogeneous, hypoechoic irregular masses with internal echoes, or sometimes thick-walled cystic lesions that show internal echoes or posterior acoustic shadowing. [8]

Mammography may reveal a dense sinus tract connecting an ill-defined breast mass to a localized skin thickening described as sinus tract sign which is diagnostic of tuberculous breast abscess. [8, 9]

CT scan is useful in differentiation of primary from secondary tuberculosis of the breast. It is especially useful in evaluation of the relation of deeply located lesions within the chest wall and pleura including the parenchyma of the lung. [9]

MRI may reveal smooth or irregular bright signal intensity on T2-weighted images suggesting a breast abscess. The finding being nonspecific, its diagnostic utility is restricted only to extramammary lesions. [7]

FNAC is the most promising investigation. [10] FNAC will show typical epithelioid granulomas and even necrosis. [11, 12] In the cases presented, FNAC was diagnostic. Advantages of FNAC are that it is easily available, cost effective and has a high diagnostic efficacy. When the diagnosis is equivocal, an excision biopsy may be required to confirm it. Excision biopsy also enables an elaborate study of the specimen, which may help in picking up a concomitant carcinoma. [10]

The detection of AFBs in culture specimens or discharges is the most confirmatory test. However, for this the smear should contain more than 10,000 organisms /ml. This may not be possible in all specimens. Amplification tests may be useful in achieving the purpose [13], but availability of these amplification tests becomes a severe limiting factor. The specificity of amplification tests is quite high. Polymerase chain reaction is another test which may help. [14] However, the diagnostic yield of this test is still debatable.

Medical therapy is the mainstay of treatment. [1, 4, 5, 10] The treatment can be divided into two phases: an intense phase lasting for 2 months comprising four drugs; rifampicin, isoniazid, ethambutol and pyrazinamide; this is followed by the continuation phase comprising two drugs; rifampicin and isoniazid, which should be continued for a period of 7 months. Various reports claim that a 4-month continuation phase is good enough. However, it is a safe practice to have a complete 9-month course to avoid the resurgence of resistant organisms.

Surgery has a very limited role to play in the treatment of breast tuberculosis. [5, 10] It is restricted to residual masses persisting after a complete course of chemotherapy or for drainage of cold abscesses.

CONCLUSION

Tuberculosis of the breast is a disease seen in women belonging to the active reproductive age group. Various modes of presentation can closely mimic a wide spectrum of diseases affecting the breast ranging from sepsis to carcinoma. Radiological investigations have limited diagnostic value. FNAC is the most promising diagnostic tool. Medical therapy is the mainstay of treatment with surgery restricted only to complicated cases.

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