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CASE REPORT

Breast Tuberculosis: A unique and rare association

[1]Anirban Das, [2]Hrishikesh Barui, [3]Preetam Goswami

[1]Associate Professor, [2]Senior Resident, Department of Pulmonary Medicine, Burdwan Medical College & Hospital, India
[3]Post Doctoral Trainee, Department of Cardiology, R.G Kar Medical College & Hospital, India

Corresponding Author
Preetam Goswami
Post Doctoral Trainee, Department of Cardiology, R.G Kar Medical College & Hospital, India
Email: preetamgoswami.91@gmail.com

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ABSTRACT
Incidence of tuberculous mastitis ranges from 0.1 % to 4 %, commonly seen in young lactating multiparous women and is uncommon in prepubescent and elderly women.Primary tuberculous mastitis is rare.A 14-year-old nulliparous female presented with gradually progressive swelling in the right inner lower quadrant of breast with passage of pus,right axilla swelling and shortness of breath. There was associated history of low-grade intermittent fever and anorexia with significant weight loss. She was subsequently diagnosed as a case of tuberculous breast abscess. She was treated with antituberculous drugs which resulted in resolution of symptoms clinically and radiographically. Tuberculosis of breast, although rare should be kept in mind to avoid misdiagnosis and for early treatment.

Keywords: mastitis, tuberculosis, breast, mastalgia

INTRODUCTION

Tuberculosis (TB) is one of the most widespread infectious diseases in the world. World health organization (WHO) reported ten million new TB cases in the year 2018.[1] However, tuberculous mastitis is not commonly seen in practice. Sir Astley Cooper first described it in the year 1829 and called it 'scrofulous swelling of the bosom'.[1][2] Overall Incidence of Tuberculous mastitis ranges from 0.1 % in developed countries to about 4 % in highly endemic areas.[1] It is usually diagnosed in young lactating multiparous women and is uncommon in prepubescent and elderly women.[1][2] This could be due to the fact that the female breast undergoes changes during the period of childbearing activity and is more susceptible to trauma and infection.[2] Primary tuberculous mastitis is specifically used for those rare cases where the breast is first affected by tubercle bacilli while secondary tuberculous mastitis refers to associated tuberculous co-infection elsewhere in the body.[1] The risk factors associated includes multiparity, lactation, trauma, past history of pyogenic or suppurative mastitis, and immunodeficiency.[2] It may be difficult to differentiate from carcinoma breast and both may coexist.[2] Breast tuberculosis is paucibacillary in nature and may show no organisms in microscopy, culture and nucleic acid amplification tests.[3] This case is reported of a 14 year old female diagnosed with tuberculous mastitis.

CASE REPORT

A 14-year-old nulliparous female presented with complaint of gradually progressive swelling in the right inner lower quadrant of breast with passage of pus for past 4 months, swelling in the right axilla for past 2 months and shortness of breath (mMRC grade 2) for past 15 days. There was associated history of low-grade intermittent fever 1 month back and there is anorexia with significant weight loss for past 2 months. She was non-smoker and non-alcoholic and had no comorbidities. Age of menarche was at 11 years and her mother had history of pulmonary tuberculosis for which she completed treatment. On general examination, she was tachypneic with respiratory rate of 28/min. All other vitals were within normal limits. She had pallor. There was a palpable lymph node present in right axilla (Fig. 1) of size approximately 2.5cm*1.5cm, non-tender, mobile and was not fixed to the underlying structures. On breast examination, the lump measured 5*3 cm and was firm, non-tender, and mobile in the lower inner quadrant of right breast subcutaneously (Fig. 1). The nipple areolar complex was normal but overlying skin was inflamed with a discharging sinus present. The

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left breast was normal. On examination of the thorax proper, there was stony dull percussion note in right mammary, infra-axillary and intrascapular area and decreased vesicular breath sounds were heard over these areas. All other areas had normal findings. Other system examination was within normal limits.

Complete hemogram revealed hemoglobin of 8.6g% (ref: 11 to 13g/dl), total count of 14000/cumm. (Ref: 4000-11000/cumm.) and erythrocyte sedimentation rate (ESR) of 85mm in 1st hour (ref: less than 10mm in 1st hour). Blood electrolytes, liver, renal and thyroid function tests were within normal limits. Sputum culture revealed no growth and sputum for acid fast bacilli (AFB) were negative and cartridge based amplication test (CBNAAT) detected no mycobacteria. Chest roentgenography showed a homogeneous opacity in right lower zone (Fig. 2). Pleural fluid aspiration was attempted and was straw colored and on analysis revealed a lymphocytic (95%), exudative (protein-7.6g/dl) picture with high adenosine deaminase levels (86U/L). Pleural fluid AFB and CBNAAT revealed no abnormality and culture showed no growth. Ultrasonography of breast revealed a heterogeneously enhancing expansile osteolytic lesion involving the right breast with an enlarged right axillary lymph node (Fig. 2). Fine needle aspiration cytology (FNAC) from right breast revealed mixed inflammatory cells with multinucleated giant cells and few acid-fast bacilli, suggestive of tubercular breast abscess. Pus from right breast for acid fast bacilli was positive and CBNAAT detected mycobacteria without rifampicin resistance. Contrast enhanced computed tomographic scan of thorax was suggestive of right sided mild pleural effusion with right sided breast abscess and right axillary lymphadenopathy (Fig. 3). Judging from patient's clinical history, examination and investigations, we arrived at the diagnosis of tuberculous breast abscess.

Patient was started on antituberculous therapy (ATT) as per weight band under national tuberculosis elimination programme (NTEP). Symptomatic and supportive management was also given. Patient was also advised to take high protein diet.

Currently, the patient has taken 1 month of ATT, and on follow up at 1 month, patient's clinical symptoms improved. There was cessation of discharge from the sinus (Fig. 4) and also there is slight resolution of the pleural effusion on chest roentgenography and there is reduction in the size of axillary lymph node.

Fig. 1: Left picture showing a discharging sinus with pus in the right lower inner quadrant of the breast (Also note the underlying skin and areola is normal); Right picture showing enlarged right axillary lymph nodes of the patient

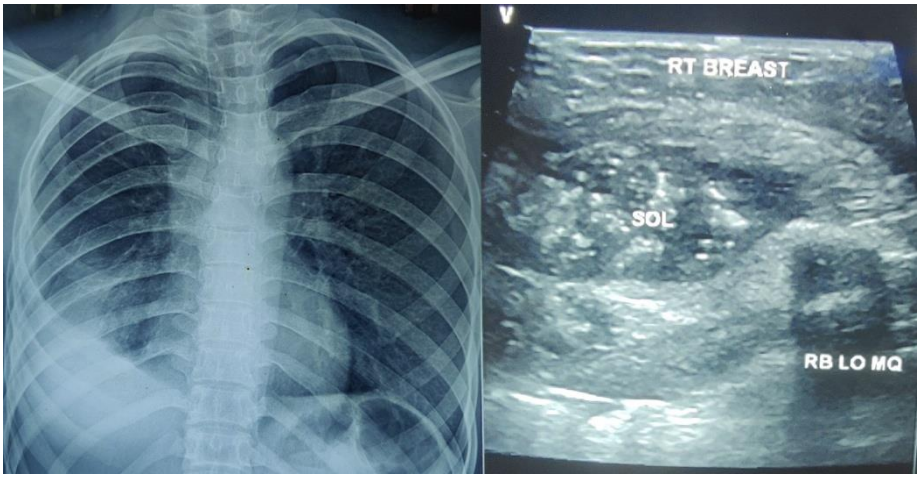

Fig. 2: Left picture showing Chest Xray of the patient with right sided homogenous opacity; Right picture showing a heterogeneously enhancing space occupying lesion (SOL) in the right breast.

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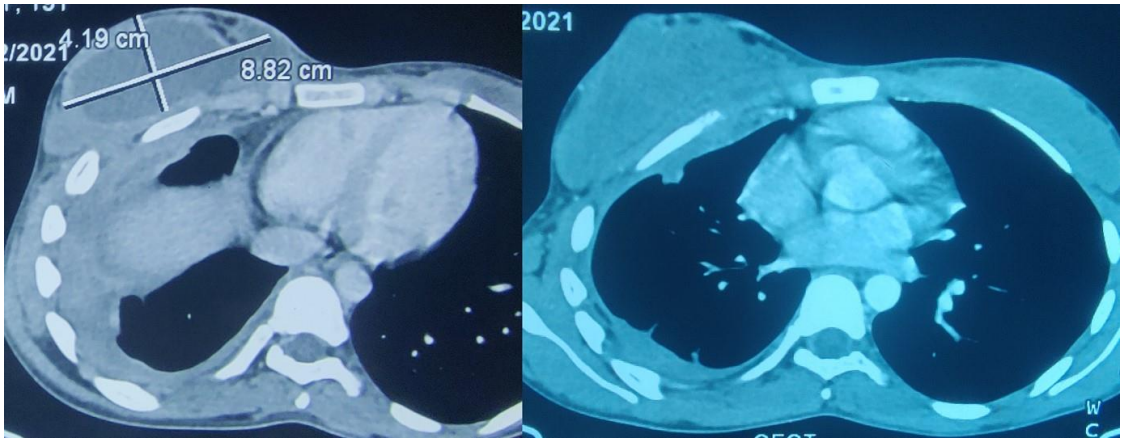

Fig. 3: Left picture showing a contrast enhanced computed tomographic (CECT) scan of thorax with a 19*8.82 cm sized heterogeneously enhancing lesion in the right breast suggestive of breast abscess; Right picture showing CECT thorax of the same patient showing right sided pleural effusion.

Fig. 4: showing resolution of the discharging sinus with excoriated skin at the region of the previously formed sinus (Follow up visit)

DISCUSSION

Breast tuberculosis is a very rare form of extra pulmonary tuberculosis.[4] Tewari et al. [5][6] classified breast tuberculosis into three types: nodular, disseminated, and tubercular abscess. The nodular type presents as a well-defined mass that involves the skin, sometimes causing ulceration and may be mistaken for fibro-adenoma or carcinoma and is more frequent in the elderly.[5][6][7] The disseminated type presents as multiple foci that can form a confluence.[7] The tubercular abscess is characterized by a cavity and later undergo caseation necrosis.[7] Bilateral involvement is rare and occurs in only 3% of the patients.[8] Mode of spread occurs either by direct inoculation of the bacilli through abrasions in the nipple or more commonly via lymphatic, hematogenous, or contiguous seeding.[2] Ipsilateral axillary lymphadenopathy may be seen in 50% to 75% of tuberculous mastitis. [2] Contiguous spread may occur from the ribs, pleural space, or from an intra-abdominal source.[2] Common differential diagnosis includes traumatic fat necrosis, plasma cell mastitis, chronic pyogenic abscess, mammary dysplasia, fibroadenoma, granulomatous mastitis, sarcoidosis, blastomycosis, actinomycosis and last but not the least breast carcinoma.[9] Ours was a case of tubercular breast abscess with right axillary lymphadenopathy with right sided pleural effusion.

The age incidence is between 20 - 50 years with majority in reproductive age group.[3] This is because the female breast undergoes changes during this period and is more liable to trauma and infection.[4] In pregnant and lactating women, the breast becomes highly vascular with dilated ducts and make it more susceptible to trauma and tubercular infection.[4] It is uncommon in prepubescent females and elderly women.[4] Our case was a 14 year old nulliparous non lactating female which was very uncommon at this age group.

It may present with a lump in the breast in the central or upper outer quadrant and may be sometimes fixed to the overlying skin or the underlying muscle, and is

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often misdiagnosed as carcinoma.[1][2] Alarge number of cases are accompanied with purulent nipple discharge, although fistulas and sinuses may develop later.[1] Kayali et al. [1] reported that their patient had a lump without any purulent discharge, while our patient had an irregular lump in the lower inner quadrant with purulent nipple discharge with the formation of a sinus tract.

Sensitivity of mammography in the diagnosis of tuberculosis of breast is low. [7] Ultrasound of breast may show a hypoechoic mass in 60% of patients.[7] The gold standard for the diagnosis is detection of M tuberculosis by AFB smear or by mycobacterial culture.[7] Acid fast bacilli in breast tuberculosis are identified in only 12% of patients. [3] Fine needle aspiration cytology (FNAC) may show the presence of epithelioid cells and granulomas.[7] In our case, FNAC revealed mixed inflammatory cells with multinucleated giant cells. AFB smear and CBNAAT was also positive for mycobacterium tuberculosis. In cases where FNAC, smear or culture is negative, histopathology of the lesion may help to detect the presence of tuberculosis.[7] Taziolli G. et al [7] in their report diagnosed the case as tubercular mastitis by histopathology as all other reports were negative.

Although tuberculous breast abscess is a rare entity but it has a high significance due to the fact that it may be mistaken with more common diseases like pyogenic breast abscess and breast cancer. FNAC in such cases helps in early diagnosis and prevents delay in specific treatment and thereby preventing subsequent complications associated with the disease. AFB smear should be done in all cases of suppurative aspirates of the breast and its importance is highlighted in our case.

CONCLUSION

Although tuberculous mastitis is a rare disease, yet should be kept in mind when dealing with breast diseases. Confirming the diagnosis of the disease can be challenging. A combination of radiology, pathology and in few cases, surgery may help in the early diagnosis and specific treatment of the disease.

REFERENCE

1. Kayali S, Alhamid A, Kayali A, Danial AK, Brimo Alsaman MZ, Alhamid A, et al. Primary Tuberculous Mastitis: The first report from Syria. International Journal of Surgery Case Reports. 2020; 68:48–51.
2. Baharoon S. Tuberculosis of the breast. Annals of Thoracic Medicine. 2008;3(3):5.
3. Pandit GA, Dantkale SS, Thakare NV, Pudale SS. Tuberculous Mastitis: A Case Report. 2013;2(2):4.
4. Kant S, Dua R, Goel MM. BILATERAL TUBERCULAR MASTITIS, Lung India: Jul–Sep 2007 - Volume 24 - Issue 3 - p 90-93
5. Tewari M, Shukla HS. Breast tuberculosis: Diagnosis, clinical features and management. Indian J Med Res 2005; 122:103-10.
6. Gupta S, Goyal S, Mahajan N, Chawla A, Singal R, Bala J. Primary Breast Tuberculosis Presenting as a Lump: A Rare Modern Disease. Ann Med Health Sci Res. 2013;3(1):110.
7. Tazzioli G, Macolino A, Combi F, Palma E, Papi S, Codeluppi M, et al. Breast tuberculosis: A case report of primary type mammary tuberculosis. Clin Case Rep. 2019 Dec;7(12):2346–8.
8. Sinha RK, Dey A, Agarwal S. Tuberculous mastitis diagnosed on cytology - case report of a rare entity. J Cytol. 2017;34(3):162.
9. Gon S, Bhattacharyya A, Majumdar B, Kundu S. Tubercular mastitis - a great masquerader. TJPATH. 2013;29(1):61.