

Case Report

Isolated breast tuberculosis in an elderly diabetic woman

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Abstract

The manifestations of tuberculosis (TB) are myriad and can affect any organ. Involvement of breast by TB is rare and the condition is often mistaken with breast cancer or pyogenic breast abscess. We report the case of a 75-year-old woman with long standing type 2 diabetes mellitus who presented with a swelling in the left breast. Core biopsy of the swelling showed necrotizing epithelioid granulomas with acid-fast bacilli. The patient responded well to short-course anti-TB treatment. The present case documents the uncommon isolated occurrence of TB of the breast in a patient with long standing type 2 diabetes mellitus.

Keywords: Breast, diagnosis, treatment, tuberculosis

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INTRODUCTION

India is the highest tuberculosis (TB) burden country; diabetes mellitus is an important risk factor for TB and might affect disease presentation and treatment response.^[1,2] TB of the breast is an uncommon disease even in countries where the incidence of TB is high. Here, we report a rare case of isolated breast TB in an elderly woman with type 2 diabetes mellitus.

CASE REPORT

A 75-year-old woman, who is a known to have type 2 diabetes mellitus for the past 30 years presented to our institute with a complaint of painless lump in the left breast since 2 months.

She gave a history of on and off low-grade fever for the past 1 month, loss of weight of 6 kg in the past 2 months

and loss of appetite. There was no history of TB or TB contact in the family.

On examination, she was febrile, pallor was evident and no lymphadenopathy was noted. Blood pressure was 160/80 mmHg. The examination of cardiovascular, abdominal, respiratory and central nervous systems was normal.

The examination of left breast revealed a non-tender, firm lump of size 2 cm × 1.5 cm in the upper inner quadrant. It was round, freely mobile with no local rise of temperature. There were no axillary lymph nodes. No ulcers, puckering or dimpling over skin were noted.

The investigations revealed-normal haemogram with elevated erythrocyte sedimentation rate (ESR) (76 mm at the end of the first hour). Fasting blood sugar was high (160 mg/dL); glycosylated haemoglobin was 8.8%. Liver function tests and renal function tests were

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normal. Serological testing for human immunodeficiency virus (HIV), hepatitis B surface antigen and hepatitis C virus were negative. The chest radiograph was normal. Mantoux test showed 3 mm induration.

Mammogram of the left breast showed Breast Imaging Reporting and Data System (BIRADS)^[3] category 4. Ultrasonography (USG) of left breast suggested the possibility of the inflammatory lesion in the left breast. USG-guided core biopsy (instrument? and method) showed multiple confluent epithelioid cell granulomas with giant cells [Figure 1]. Most of these granulomas showed central caseous necrosis. Ziehl-Neelsen (ZN) stain was positive for acid-fast bacilli consistent with the diagnosis of TB [Figure 1] (Grammar). Computed tomography (CT) of chest and abdomen showed a hypodense lesion with mild peripheral enhancement in upper inner quadrant of left breast [Figure 2], and there were no features suggestive of pulmonary TB.

She was started on a course of anti-TB treatment with a 2-month intensive phase consisting of rifampicin, isoniazid, ethambutol and pyrazinamide followed by a consolidation phase of rifampicin, isoniazid and ethambutol for subsequent 4 months. During the hospital stay, the patient had an episode of hypertensive urgency which was controlled with intravenous antihypertensive treatment in intensive care. On follow-up after 6 months, swelling of left breast resolved and repeat USG examination of left breast showed complete resolution of the lesion. Glycaemic control was optimised.

DISCUSSION

Immunosuppressive conditions such as organ transplantation, HIV, advanced age, diabetes and chronic diseases increase the risk of TB.^[2] In these conditions, TB

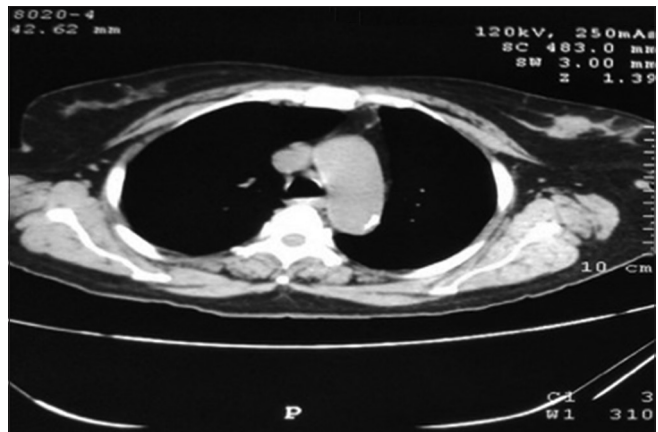


Figure 2: Contrast-enhanced computed tomography of chest showing well circumscribed hypodense lesion with mild peripheral enhancement in upper inner quadrant of the left breast

presents atypically that can result in delay in diagnosis and treatment.^[2] The occurrence of TB is higher in patients with diabetes mellitus with poor diabetic control, i.e., those with glycosylated haemoglobin concentration more than 7%.^[1] Diabetes mellitus leads to increased susceptibility to TB, directly due to hyperglycaemia and cellular insulinopenia as well as indirect effects on macrophage and lymphocyte function which decreases T-cell-mediated immune response and diminished ability to contain the organism.^[1,2]

Breast TB is an uncommon disease.^[4,5] It is uncommon because the mammary gland tissue like spleen and skeletal tissue offers resistance to the survival and multiplication of the tubercle bacillus.^[4,5]

Breast TB has nonspecific clinical, radiological and histological findings.^[4-8] Misdiagnosis is common because of its similarity to carcinoma and bacterial abscess.^[7-9] Breast TB commonly affects young, multiparous, lactating women and present

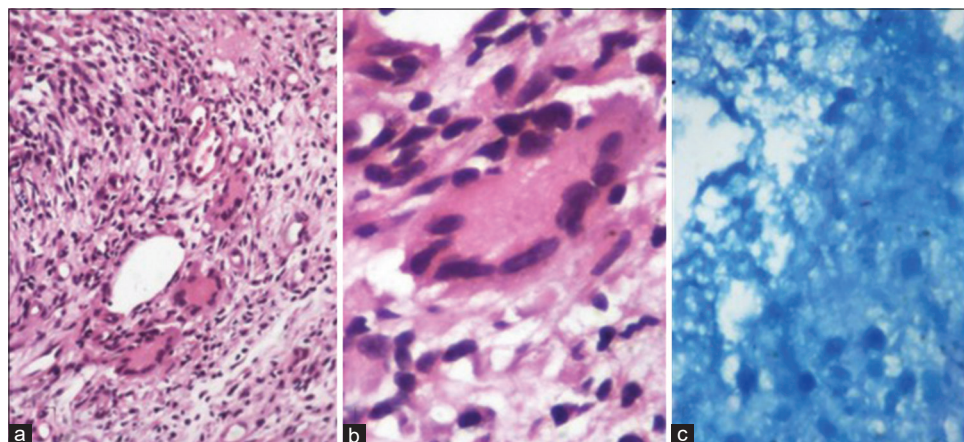


Figure 1: Photomicrograph showing well-formed epithelioid cell granuloma with central giant cell (Haematoxylin and eosin, $\times 100$) (a), The Langhans, type of giant cell (Haematoxylin and eosin, $\times 400$). (b) Positive rod-shaped mycobacteria. (Ziehl-Neelsen $\times 1000$) (c)

either as an abscess or as painless breast mass.^[7-9] Lactation is known to increase the susceptibility of the breast too.

TB because during lactation, the increased vascularity of the breast with dilated ducts, predispose to trauma, infection and dissemination of bacilli.^[2] Our case is unusual in view of the age of the patient and isolated involvement of breast. In our case, initially, breast lesion is mistaken for carcinoma in view of old age.

The breast can get infected by tuberculous bacilli by haematogenous, lymphatic routes; spread from contiguous structures, direct inoculation and ductal infection.^[4] Breast TB could be either primary or secondary.^[4-6] Breast infection is seen more frequently secondary to a TB focus from lungs, pleura or lymph nodes.^[4-6] In our patient, CT scan of chest and abdomen did not reveal TB elsewhere in the body. Our case falls under primary breast TB because there was no evidence of another focus on physical or radiological examination nor there was a prior history of TB. CT may be useful for the differentiation of primary and secondary lesions by detecting continuity with the thoracic wall or pleura, and associated lesions of the lungs.^[5]

Radiological imaging modalities such as mammography or USG are unreliable in distinguishing TB mastitis from carcinoma because of nonspecific features.^[3,5] The most reliable and definitive diagnostic studies include aspirate culture, of molecular evidence *Mycobacterium* and histological examination of the tissue sample.^[5] Fine-needle aspiration cytology (FNAC) from the breast lesion can suggest breast TB when both epithelioid cell granulomas and necrosis are present.^[4] However, failure to demonstrate necrosis on FNAC does not exclude TB. The gold standard for the diagnosis of breast TB is detection of *Mycobacterium* TB by ZN staining or by culture.^[3,5] It is not always possible to detect acid-fast bacilli in histological sections of the breast tissue but were detectable in the present case on ZN stain (was material sent for culture-not mentioned in case report).

The treatment of breast TB includes standard anti-TB therapy for 6 months which usually results in good clinical response.^[5] The regimen consists of a 2-month intensive phase of (isoniazid, rifampicin, pyrazinamide and ethambutol) followed by 4-month continuation

phase of (isoniazid, rifampicin and ethambutol). Surgical intervention is reserved for draining cold abscesses or excision of residual lump.^[4]

The isolated breast TB is rare and uncommon to see in elderly woman. A high degree of clinical suspicion and prompt diagnosis are necessary to enable an early diagnosis as breast TB has good response to anti-TB treatment. Clinicians must keep breast TB as a differential diagnosis in breast lesions with prolonged fever especially in diabetics.

In this instance, it appears that the diagnosis was made fortuitously. The importance of serendipity may also be mentioned.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Dooley KE, Chaisson RE. Tuberculosis and diabetes mellitus: convergence of two epidemics. *Lancet Infect Dis* 2009;9:737-46.
2. García-Elorriaga G, Del Rey-Pineda G. Type 2 Diabetes Mellitus as a risk factor for tuberculosis. *J Mycobac Dis* 2014;4:144.
3. D'Orsi CJ, Kopans DB. Mammography interpretation: The Bi-RADS methods. *Am Fam Physicians* 1997;55:1548-50.
4. Sen M, Gorpeliglu C, Bozer M. Isolated primary breast tuberculosis - report of three cases and review of the literature. *Clinics* 2009;64:607-10.
5. Singal R, Bala J, Gupta S, Goyal S, Mahajan N, Chawla A. Primary breast tuberculosis presenting as a lump: A rare modern disease. *Ann Med Health Sci Res* 2013; 3:110-2.
6. Baharoon S. Tuberculosis of the breast. *Ann Thoracic Med* 2008;3:110-4.
7. Chaudhary R, Sharma S, Shukla A, Sharma M. A rare presentation of primary breast tuberculosis in a primigravida: A case report. *Ann of Int Med & Den Res* 2015;1:102-3.
8. Pal P, Patra SK, Ray S. An unusual cause of breast lump: Isolated tuberculosis of the breast. *Am J Trop Med Hyg* 2014;90:788-9.
9. Tewari M, Shukla HS. Breast tuberculosis: diagnosis, clinical features & management. *Indian J Med Res* 2005;122:103-10.