

Primary tuberculosis of the breast: A rare case

Luvo Gaxa, Bafana Elliot Hlatshwayo

ABSTRACT

Introduction: Tuberculosis (TB) is a very common entity that is predominant in the developing countries. However, coming across TB of the breast is a rare, exceptional and an exciting experience. Primary breast TB incidence is reported to range between 0.025 and 0.1% in the developed countries compared to the incidence of breast TB in the developing countries which is approximated at 3–4.5% of TB cases. The breast is generally labeled as the body organ which is structured in such a manner that its environment is not conducive for the multiplication of the bacilli. **Case Report:** A case of a 32-year-old female presented with an occasionally painful left breast and left axillary lumps over a period of two months duration. She had been well with no remarkable past medical history. There is no history of previous trauma and she was not exposed to people with TB at home and at work. There are no respiratory system signs of TB. Biopsies of the left breast lump as well as that of the left axillary lump were performed and the diagnosis of TB breast and the left axillary was clinched. The patient was then put on anti-TB treatment. **Conclusion:** There are no specific

clinical or radiological features of TB of breast. The final diagnosis of breast TB is made through histopathological findings. The radiological investigations help with the characterization of the extent of the lesions.

Keywords: Breast, Histopathology, Rare, Tuberculosis (TB)

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INTRODUCTION

It is approximated that 8.6 million people were diagnosed with tuberculosis (TB) in year 2012 and 1.3 million people died from TB in the same year [1].

Diagnosing primary breast TB is an extremely rare and an exceptional encounter even in TB endemic areas of the world [2].

Primary breast TB incidence is reported to range between 0.025 and 0.1 % in the developed countries compared to the incidence of breast TB in the developing countries which is approximated at 3–4.5% of TB cases [2].

The breast is known as an organ of the body that is likened to the skeletal muscle and the spleen in terms of resistance to TB [2].

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CASE REPORT

A 32-year-old female presented with a two-month history of a palpable left breast lump. The lump is reported to be painful occasionally. The patient was then examined by the surgeon who confirmed a left breast palpable lump that was tender on palpation. There was another palpable lump noted in the left axillar.

The patient had a normal body weight of 62 kg. The vital signs were within normal limits (temperature 36.7°C, pulse 58 beats/minute, blood pressure 134/109 mmHg and the respiratory rate 12 beats/min). The patient was in a general good looking condition.

The liver function tests, full blood count, urea and electrolytes, including ESR and CRP results were within normal limits.

The surgeon subsequently requested an ultrasound of the right breast and the right axillar. The right breast upper outer quadrant showed a large round to oval shaped hypo-echoic mass. The breast mass on ultrasound measured 2.2x1.5 cm on transverse view on its widest diameter and the left axillary mass measured 3x2.8 cm on transverse view on its widest diameter. The margins of the mass were smooth and lobulated anteriorly. The mass also demonstrated a through transmission. No flow was noted within the mass. The surrounding breast architecture was distorted and the left breast ducts were dilated. No associated nipple retraction and no associated skin thickening. The left axillar showed a large lymph node with absent echogenic centre. The normal architecture of the left axillary lymph node was distorted.

Based on ultrasound findings, biopsy of the left breast mass and the left axillary lymph node was then performed and the biopsy results confirmed TB of the left breast and the left axillar.

The histopathology report in this case was as follows:

Microscopic Examination

Specimen 1 of the left breast core needle biopsy: Sections showed a core of tissue in which a necrotic material is present with no residual normal breast ducts or lobules. There are focal granulomas comprising randomly arranged epithelioid histiocytes. There is no neoplasm noted.

Specimen 2 from the left axillary core needle biopsy: Section showed core fibro-fatty connective tissue in which there is necrotizing granulomatous inflammation. Palisaded epithelioid histiocytes are identified which surround the areas of necrosis.

The necrotic material contains basophilic nuclear dust in-keeping with coagulative necrosis. There is no evidence of a neoplasm. Conclusion: The features are those of necrotizing granulomatous inflammation consistent with tuberculosis (TB).

The patient was then started on anti-TB treatment (RIFAFOR 5 Tabs p.o. daily and pyridoxine 25 mg p.o. daily).

On follow-up the patient reported that the pain had subsided and she did not report any treatment associated

complications and she was going to be reviewed with ultrasound after six weeks of taking the anti-TB medication.

DISCUSSION

Tuberculosis (TB) is a communicable disease that remains a major global problem that has claimed multiple millions of lives, more especially in the developing countries [1].

It is approximated that 8.6 million people were diagnosed with TB in year 2012 and 1.3 million people died from TB in the same year [1].

The breast is known as an organ of the body that is likened to the skeletal muscle and the spleen in terms of resistance to TB [2]. Just like the liver; breast, spleen and the musculoskeletal TB are rare and the reason behind this rarity is secondary to low tension of oxygen and that prohibits the growth of the mycobacterium since the conditions are unfavorable and uncondusive for its growth.

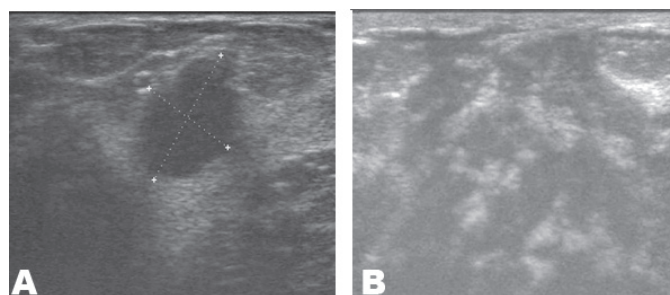


Figure 1: (A, B) Left breast ultrasound showing a round to oval shaped hypoechoic mass which demonstrates through transmission with no calcifications. The lesion measures 2.2x1.5 cm in size on transverse view on its widest diameter.

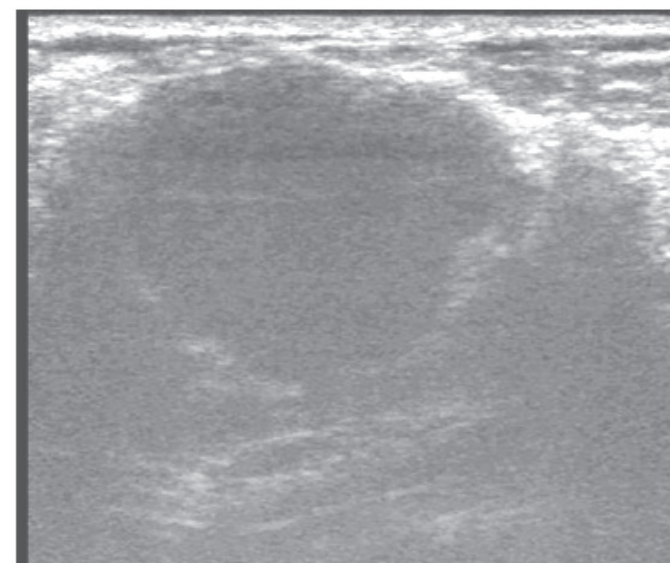


Figure 2: Left axillary ultrasound showing a large lymph node with architectural distortion. The left axillary lymph node measured 3x2.8 cm in size on transverse view on its widest diameter.

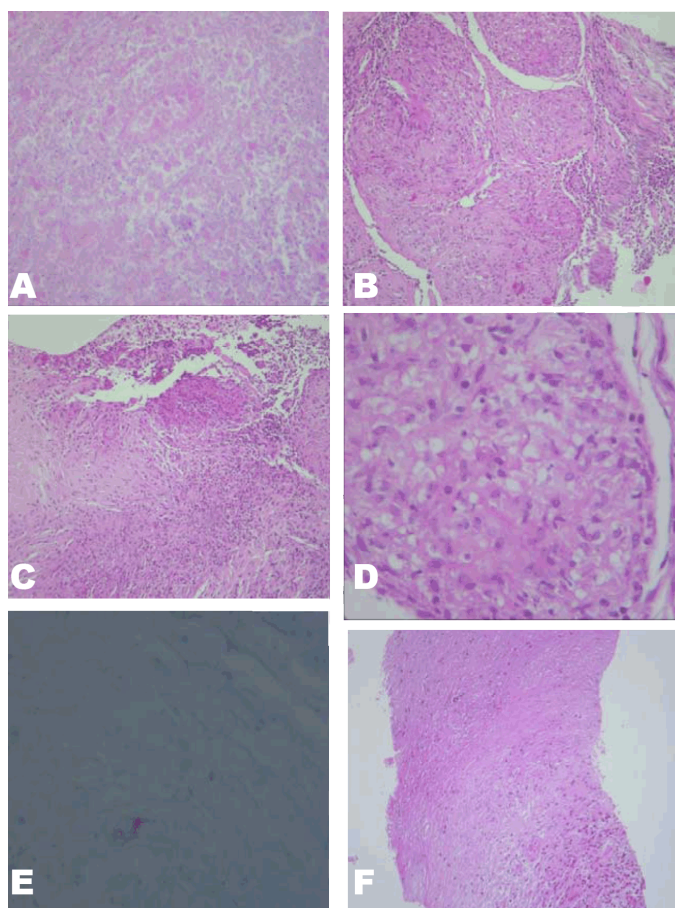


Figure 3: Histopathology showing features of tuberculosis (H&E stain, x100).

Diagnosing primary breast TB is an extremely rare encounter even in TB endemic areas of the world [2].

Primary breast TB incidence is reported to range between 0.025 and 0.1% in the developed countries compared to the incidence of breast TB in the developing countries which is approximated at 3–4.5% of TB cases [2].

Five various groups of TB of the breast have been classified by McKeon and Wilkinson [3]

1. Nodular tubercular mastitis
2. Disseminated or confluent tubercular mastitis
3. Sclerosing tubercular mastitis
4. Tuberculous mastitis obliterans
5. Acute miliary tubercular mastitis

Amongst the groups mentioned above, the nodular type of TB breast is the most common and some of its clinical features entail a well defined mass that is painless, slow growing, progressive and may also lead to sinus formation as a result of skin ulceration [4].

It is important to note that there may be co-existence of breast TB and breast cancer on rare occasions and both the clinical and the radiological features of these two entities may overlap [5].

Some of ultrasonographic and mammographic features of breast TB reported in the recent study involve [6].

- Smooth bordered masses in 40%
- Axillary or intra-mammary lymphadenopathy in 40%
- Mass lesions mimicking breast carcinoma in 30%
- Asymmetrical density and duct ectasia in 30%
- Skin thickening in 20%
- Macro-calcification in 20%
- Skin sinus in 10%

The radiological investigations are not diagnostic of TB breast but they are mainly used to assess the breast lesions for the full extent. The difficulty of mammogram in differentiating between the breast cancer and breast TB makes its use limited in the diagnostic process of breast TB [3, 5].

Some of the ultrasound features of nodular trabecular mastitis entail but not limited to hypoechoic lesions that may also be cystic and complex poorly circumscribed lesions [6].

The sclerosing tubercular mastitis on ultrasound does not demonstrate a definite mass lesion but presents as an increased breast echogenicity [6].

Both computed tomography scan and magnetic resonance imaging scan are of limited value in diagnosing the breast TB. However, these two radiological tools are useful in evaluating for the chest wall extension and the extramammary extent of the lesions [6].

Breast TB is treated with anti-TB treatment just like the pulmonary TB and the duration of the treatment stretches to six months. The six months duration of TB therapy is divided into two months of intensive-phase and four months of the continuation-phase [7].

Excisional Biopsy is performed to exclude co-existence of TB breast and breast cancer.

There are no clear treatment guidelines for treating the co-existence of breast TB and breast cancer, however; there is no existing conflict in prescribing both the Anti-TB treatment and cancer chemotherapy simultaneously [8]. One of the suggested treatment options is that patients may be started on anti-TB treatment before they are initiated on chemotherapy [8, 9].

CONCLUSION

The diagnosis of tuberculosis (TB) breast needs a multidisciplinary approach which involves the surgeons, radiologists and the histopathologists. The final diagnosis of breast TB is secured through biopsy. Radiological investigations are inadequate to make the final diagnosis of breast TB. However, these investigations are extremely useful for characterization the extent of the disease.

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Author Contributions

Luvo Gaxa – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Final approval of the version to be published

Bafana Elliot Hlatshwayo – Substantial contributions to conception and design, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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