

Tuberculosis of the Breast

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ABSTRACT

BACKGROUND: Tuberculosis of the breast is a rare disease with non specific manifestations. It should be included in the differential diagnosis of breast lesions in immune compromised patients especially in tuberculosis endemic areas of the world. **CASE REPORT:** We report a case of a 31 year old HIV positive lady who presented with an ulcerated mass on the left breast of 3 months' duration. Incision biopsy of the lesion confirmed tuberculosis of the breast. Treatment with standard anti tuberculous drugs resulted in complete resolution.

CONCLUSION: A high index of suspicion is required to make a diagnosis of breast tuberculosis. The disease can be treated conservatively with standard anti tuberculous drugs while surgery is reserved for rare cases.

KEY WORDS: Tuberculosis, breast, HIV

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INTRODUCTION

Tuberculosis of the breast is uncommon with an incidence of 0.1% to 3% of all breast diseases treated surgically.¹ Its incidence is higher in developing countries as a result of the high incidence of tuberculosis² but this pattern of incidence may change because of the increasing spread of human immunodeficiency virus (HIV) in developed countries. Commonly, breast tuberculosis affects young, multiparous and lactating women and can present either as an abscess or unilateral painless breast mass.³ It is a very rare disease and can mimic breast cancer or breast abscess, so a high level of suspicion is required to make the diagnosis. Concomitant axillary lymph nodes are present in one-third of patients.⁴ This case is presented to emphasize the fact that breast tuberculosis should be included in the differential diagnosis of breast lesions like abscesses and carcinomas especially for immune compromised patients in endemic regions of the world.

CASE REPORT

A 31 year old HIV positive female patient presented to the surgical clinic of Braithwaite Memorial Specialist Hospital with a mass on the left breast of 3 months' duration. On physical examination, the breast was very tender and a diffuse irregular mass involving the upper quadrants was felt. The mass was attached to the

overlying skin which had an ulcer measuring 8cm in its widest diameter with undermined edges and was discharging purulent fluid (figure 1). Ultrasound of the left breast showed a solid mass (figure 2). Full blood count results were within normal limits, erythrocyte sedimentation rate was high (60mm/hr). Biopsy of a specimen taken from the edge of the ulcerated mass showed granulomatous foci consisting of central necrosis surrounded by a rim of giant cells, lymphocytes, plasma cells walled off by fibrosis and this was suggestive of tuberculous mastitis (figure 3). Her CD4 count was 250 cells/ml and had been on anti retroviral drugs that consisted of zidovudine 300mg twice daily, lamivudine 150mg twice daily, efavirenz 600 mg at night for 2 weeks prior to presentation at the surgical clinic. She was placed on anti tuberculous drugs that consisted of daily doses of isoniazid 300mg, rifampicin 600mg, pyrazinamide 1500mg, ethambutol 800mg and pyridoxine 50mg that were initiated for 2 months. Isoniazid, pyridoxine and rifampicin were continued for an additional 4 months. After 6 months of treatment with anti tuberculous drugs, the ulcer healed and the mass completely regressed (figure 4). She has been attending follow up clinic for the past 1 year with no complication or recurrence of disease.

DISCUSSION

Breast tuberculosis was described by Sir Astley Cooper in 1829 as the 'Scrofulous Swelling of the Bosom'.⁵ Its commonest presentation is as breast lump.⁶ In its advanced form, breast tuberculosis is characterized by skin invasion, nipple retraction and peau d' orange thus mimicking breast cancer.⁷ Risk factors are HIV infection, multiparity, lactation, trauma, past history of suppurative mastitis and it commonly occurs in the 20 to 50 years age range. Our patient, who is within this age bracket tested positive to HIV and placed on anti retroviral drugs 2 weeks before presentation at the surgical clinic. McKeown and Wilkinson classified breast tuberculosis into 5 types⁸ namely :- nodular tubercular mastitis, disseminated tubercular mastitis, sclerosing tubercular mastitis, tuberculous mastitis obliterans and acute miliary tubercular mastitis. Also it can be primary when the breast lesion is the only manifestation of tuberculosis or secondary when there is a demonstrable focus of tuberculosis elsewhere.^{2,3} Mycobacterium tuberculosis can spread to the breast by haematogenous route, retrograde spread from axillary lymph nodes or directly from lungs, pleura, mediasternum or articular lesions.⁹ Primary tuberculosis

FIGURE 1; mass and overlying ulcer with undermined edges, discharging purulent fluid



FIGURE 2; Ultrasound scan of the left breast showing a solid mass



FIGURE 3; Granulomatous foci consisting of central necrosis surrounded by a rim of giant cells, lymphocytes, plasma cells walled off by fibrosis

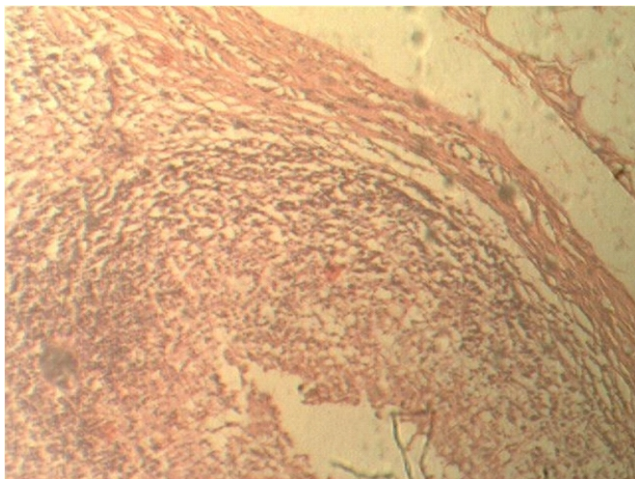
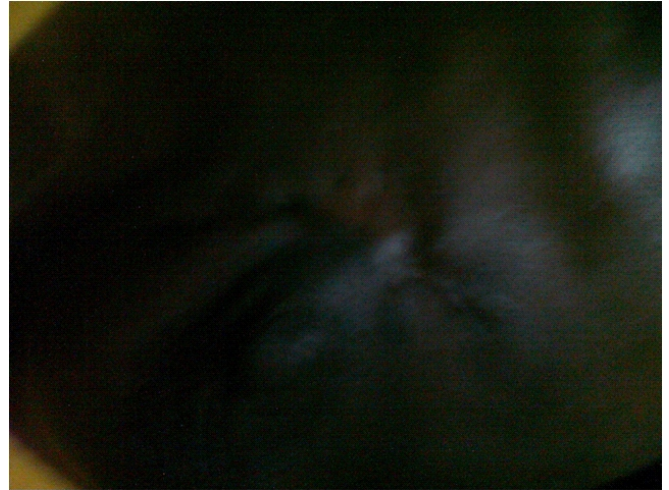


FIGURE 4; Completely regressed mass with healed ulcer



is rare and it is assumed that most cases are secondary even if no primary focus can be found.^{2,9} No primary focus was identified in our patient. However, we exercised caution in reaching this conclusion because she is immunosuppressed (HIV positive) and resident in a tuberculosis endemic country (Nigeria). Mycobacterial culture is often negative.¹⁰ This is because the breast convey some resistance to the survival and multiplication of tuberculosis bacillus, thereby, making the number of organisms in the tissue too small to be detected.²

Nucleic acid amplification tests like polymerase chain reaction are rapid and specific but have low sensitivity.¹¹ Pathological examinations are more valuable than bacteriological examinations and preferred for the accurate diagnosis of breast tuberculosis.¹² Khama¹³ found that in 52 patients with breast tuberculosis, fine needle aspiration cytology was 100% reliable in making the diagnosis of breast tuberculosis. Imaging modalities like mammography or ultrasonography are unreliable in distinguishing tuberculous mastitis from carcinoma because of its non specific features.¹⁴ Similarly, computerized tomography scan and magnetic resonance imaging are not diagnostic without histological confirmation.¹² Treatment of breast tuberculosis with standard anti tuberculous drug therapy for 6 months usually results in good clinical response.^{2,15} The regimen consists of a 2month initiation phase using isoniazid, rifampicin, pyrazinamide and ethambutol followed by a 4 month continuation phase with isoniazid and rifampicin. Surgical intervention is only necessary if there is poor response and is reserved for draining cold abscesses or excision of residual lumps. Simple mastectomy with or without axillary clearance is reserved for cases with extensive disease causing a large, painful and ulcerative mass involving the entire breast.²

CONCLUSION

Immunosuppressive conditions like HIV infection increase the chance of tuberculosis presenting atypically with rare extra pulmonary manifestations like breast tuberculosis. A high index of suspicion is essential when treating non specific breast abnormalities particularly in tuberculosis endemic areas of the world. Diagnosis can be established by fine needle aspiration cytology or histology while anti tuberculous drug therapy is the mainstay of treatment. Surgery is only for selected refractory cases.

REFERENCE

1. Jalali U, Rasul S, Khan A, Baig N, Khan A, Akhter R. Tuberculous mastitis. *J Coll Physicians. Pak* 2005; 15: 234-237.
2. Tewari M, Shukla HS. Breast tuberculosis: changing clinical features and management. *Indian J Med Res* 2005; 122:22: 103-110
3. Akcakaya A, Erilmaz R, Salin M, Ozkan O. Tuberculosis of the Breast. *The breast Journal* 2005; 11:85-86
4. Shinde SR, Chandawarkar RY, by Deshmukle SP. Tuberculosis of the breast masquerading as carcinoma: a study of 100 patients. *World J Surg* 1995; 19: 379-381.
5. Cooper A. *Illustrations of the Disease Of the breast, part 1* London, Longman, Rees, Orme, Brown and Green. 1829. P. 73.
6. Punlet, Satyendra K, Tiwary, Ragini R, Singh S, Gupta SK et al. Breast Tuberculosis: still common in india. *The Internet Journal of Tropical Medicine* 2005; 2:2.
7. Ioannis M, Charalambos S, Vasiliki Z, Evaggelos T. Mammary Tuberculosis Mimicking Breast Cancer: a case report. *J Med Case Reports* 2008; 2:34.
8. McKeown C, Wilkinson W. Tuberculous Disease of the Breast. *Br J Surg* 1952; 39:420
9. Zandrino F, Monetti F, Gandolfo N. Primary Tuberculosis of the Breast: a case report. *Acta Radiologica* 2000; 41: 61-63.
10. Bari-Hand KE, Yaghan RJ, Madalka II, Mazahreh TS. Tuberculous Mastitis: a disease not to be forgotten. *Int J Tuberc Lung Dis.* 2005; 9: 920-925.
11. Cheung VCL, Yew WW, Yuen KY: molecular diagnosis in tuberculosis. *Eur J Clin Microbiol Infect Dis* 2005; 24: 711-720
12. Meral S, Canan G, Mikdat B. Isolated Primary Breast Tuberculosis. Report of 3 cases and Review of the Literature. *Clinics (Sao Paulo)* 2009; 64:607-610
13. Khanna R, Prasanna GV, Gupta P, Kumar M, Khanna S, Khanna AK et al. Mammary Tuberculosis: report on 52 cases. *Postgrad Med J.* 2002; 78: 422-424.
14. Al-Marri MR, Aret E, Omar AJ. Mammographic Features of Isolated Tuberculous Mastitis. *Saudi Med J.* 2005; 26:646-650.
15. Morino GF, Rizzardi G, Gobbi F, Baldan M. Breast Tuberculosis Mimicking other Diseases. *Tropical Doctor* 2007; 37: 177-178.