CASE STUDY

UNUSUAL PRESENTATION OF EXTRAPULMONARY TUBERCULOSIS: A CASE REPORT ON MAMMARY TUBERCULOSIS

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This case study highlights an unusual manifestation of extrapulmonary tuberculosis (TB) in a person living with HIV, namely mammary TB. Clinicians practising in settings where HIV and TB are endemic need to be aware of the clinical presentation, diagnosis and management of mammary TB.

The incidence of extrapulmonary (EP) tuberculosis (TB) is increased in patients with advanced HIV infection.[1,2] Mammary TB is a rare manifestation of EPTB, and this report describes a case of TB mastitis and TB-associated immune reconstitution syndrome (IRIS) with advanced HIV infection.

CASE REPORT

A 34-year-old woman presented with a 2-month history of loss of weight, non-productive cough and painful swelling of the right breast. There was no past history of TB, and the patient did not know her HIV status. Clinical examination revealed a unilateral 10x8 cm mass in the upper outer quadrant of the breast, with no lymph node involvement. A fine-needle aspirate (FNA) was performed and the mass was then incised, drained and dressed. Acid-fast bacilli (AFB) were isolated from the FNA using an auramine stain, and the mycobacterial growth indicator tube culture was positive at 3 weeks. The *Mycobacterium tuberculosis* (MTB) strain isolated was sensitive to all anti-TB drugs. In addition, concurrent pulmonary tuberculosis (PTB) was diagnosed through a positive sputum AFB smear and compatible changes on the chest radiograph (CXR). The CXR also showed no communication between the lung and chest wall. The intensive phase (IP) of TB treatment, consisting of rifampicin, isoniazid, pyrazinamide and ethambutol, was commenced. An uneventful clinical course followed on TB treatment, and the breast mass resolved completely. The patient accepted counselling and testing for HIV on diagnosis of PTB and was found to be HIV infected.

Sputum smear reversion occurred 2 months after TB diagnosis. The patient was commenced on antiretroviral therapy (ART) after 3 months of TB treatment. A once-daily regimen of didanosine, efavirenz and lamivudine was chosen because of its substantial potency and tolerability with TB treatment. The patient presented 2 weeks after initiation of ART with a 4-day history of a painful sternal mass. Clinical findings included new-onset generalised lymphadenopathy, a 3 cm tender erythematous sternal mass with overlying desquamation, a 5 cm firm non-tender right breast mass recurring in the previous site, and two 10 cm soft, non-tender mobile masses, one over the left scapula and the other centrally over the spinal column. A full blood count demonstrated bicytopenia, neutropenia and normochromic anaemia with abnormally low folate levels. The patient's CD4 count was 163 cells/µl and her viral load 932 553 copies/ml (log 5.97).

Staphylococcus aureus was isolated from a pus swab of the sternal lesion and treated with a course of flucloxacillin. A Ziehl-Neelsen stain of an FNA of the breast mass isolated AFB but was culture negative. Cytology demonstrated thick inflammatory/necrotic debris with numerous epithelial granulomas, and no ductal cells.

The patient completed 7 months of TB treatment and uninterrupted ART. Eighteen months after ART initiation, her CD4 count was 480 cells/µl with an undetectable viral load. The sternal and breast masses had resolved completely. However, the patient refused excision biopsy for histologically confirmed lipomas on the posterior chest wall.

DISCUSSION

In the pre-AIDS era, incidence rates of TB mastitis were 0.1% and 3% of all breast lesions in developed and developing countries, respectively.[3] However, reports of TB of the breast are becoming more common with the advancing HIV epidemic, especially over the past decade (Table I).

In immunocompromised patients in particular, haematogenous spread of MTB from a primary focus can result in mammary TB. The primary site of TB in this report was the lung parenchyma. TB of the breast most commonly presents as a lump in the central or upper outer quadrant of the breast,[18] as in this case. Diagnosis is based on multiple factors including clinical history, examination, histological features, and in some cases response to empiric TB treatment. FNA of the breast lesion remains the single most important diagnostic method.[14] Histopathological examination reveals suppuration and

TABLE I. SUMMARY OF LITERATURE REVIEW OF TB MASTITIS CASES

Author, year	No. of cases	Isolation of MTB		Pattern of drug-resistant TB, site
		Breast only	Co-morbid PTB	
Kalaç *et al.*[4]	5	4	1	RI resistance, lung
Tewari and Shukla[5]	30	30	-	-
Khanna *et al.*[6]	52	52	-	-
Green and Ormerod[7]	10	5	5	IE resistance, breast
Morino *et al.*[8]	2	1	1	-
Sakr *et al.*[9]	10	10	-	-
Ahmed and Sultan[10]	10	2	8	-
Sriram *et al.*[11]*	1	1	-	-
Fadaei-Araghi *et al.*[12]	8	1	-	-
Kumar and Sharma[13]	1	1	-	RIS resistance, breast
Kakkar *et al.*[14]	164	164	-	-
O'Reilly *et al.*[15]	1	1	-	-
Al-Marri *et al.*[16]	13	13	-	-
Harris *et al.*[17]	38	33	5	-

*This was the only report that documented HIV status; the patient was HIV uninfected.
R = rifampicin; I = isoniazid; E = ethambutol; S = streptomycin.

a degree of necrotising inflammation that is uncommon in profoundly immunocompromised patients.[19]

The development of the breast mass after initiation of ART may be related to the unmasking of TB-associated IRIS. It is unusual for MTB-associated IRIS to present as a breast mass; commonly fever, lymphadenopathy or worsening pulmonary symptoms characterise MTB IRIS.

This case highlights the need for a high index of suspicion of EPTB presenting in unusual sites particularly against a background of high TB and HIV prevalence. It also demonstrates the clinical diagnostic and management dilemmas faced by clinicians in this setting.

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