CASE REPORT

Borderline-lepromatous leprosy manifesting as granulomatous mastitis

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Summary

Leprosy is characterised by a chronic granulomatous inflammation of the skin and peripheral nerves. Dissemination of the lepra bacilli may cause involvement of other tissues as well. We describe an unusual case of the granulomatous involvement of the nipple-areola complex in a 35-year-old male consequent to borderline-lepromatous leprosy.

Introduction

Leprosy is a chronic granulomatous disease principally affecting the skin and peripheral nervous system. Leprosy is caused by infection with Mycobacterium leprae. Although much improved in the last 25 years, knowledge of the pathogenesis, course, treatment, and prevention of leprosy continues to evolve. Involvement of the endocrine system in leprosy is well acknowledged.1 Granulomatous mastitis is an uncommon entity, which may be the result of a granulomatous disease affecting the nipple-areola complex. Nipple-areola complex affliction in the form of gynecomastia is well-known in leprosy, however, affliction of nipple-areola complex due to leprous infiltration, manifesting as gynecomastia (enlarged/thickened nipple) has not been reported so far. In the current case, granulomatous involvement of the nipple-areola complex in a male due to borderline-lepromatous leprosy is demonstrated.

Case Report

A 35-year-old male of Indian origin presented with complaints of asymptomatic redness and thickening of the left nipple, gynecomastia, of a month’s duration. There was no history of any discharge from the nipple or any lump noticed in his right axilla. He had noticed raised red
lesions in the surrounding skin of the chest and few over the limbs three weeks earlier. He denied any substance abuse or prior topical application. There was no other relevant history pertaining to systemic involvement and any significant medical or surgical history. The patient had never taken any treatment (including steroids and antibiotics) for the condition. On examination the left nipple-areola complex was erythematous, indurated and non-tender (Figure 1).

There was no ulceration, discharge from the nipple or any underlying glandular swelling. Lymph nodes were unremarkable. Multiple erythematous, ill-defined plaques, 2 cm to 4 cm, were present over the surrounding skin (Figure 1). Further cutaneous examination revealed the presence of multiple (> 20), asymptomatic, erythematous, hypo-anaesthetic papules and plaques ranging in size from 5 mm to 4 cm present over back, chest, both upper and lower limbs. Multiple peripheral nerves were thickened including right supraorbital, both ulnar, left radial cutaneous, both lateral popliteal, right sural and posterior tibial nerves. Rest of the muco-cutaneous and systemic examination was normal. A section from the nipple-areola showed unremarkable epidermis. There were dense clusters of inflammation extending from dermis deeper into the breast tissue. Peri-ductal epithelioid cell granulomas, in loose

**Figure 1.** Erythema and induration involving the left nipple and ill-defined erythematous plaques present over surrounding skin.

**Figure 2.** (a) Section from nipple areola complex shows a large duct with an adjacent hypertrophic nerve infiltrated and surrounded by loose granulomas. (Hematoxylin and eosin stain, 100X). (b) section from nipple-areola complex depicting acid- fast lepra bacilli (Fite stain 1000X).
collections, were identified. The granulomas were also seen surrounding and infiltrating a hypertrophic nerve and splaying the smooth muscle fibres (Figure 2a).

The granulomas had a foamy cytoplasm and occasional giant cells were present. Acid-fast bacilli were demonstrable using Fite’s stain (Figure 2b). Bacteriological index (BI) was 3+. On the basis of the clinico-histological findings, a diagnosis of borderline-lepromatous leprosy with granulomatous mastitis was made. The patient was started on multibacillary multidrug therapy with marked regression of erythema and induration of the nipple-areola complex in 2 months.

Discussion

Reproductive gland and other endocrinal organ involvement is well known in leprosy,1 which can manifest as gynecomastia. Furthermore, it has been demonstrated that acid fast bacilli are excreted in the milk of not only lepromatous patients but also of tuberculoid, borderline-tuberculoid and borderline leprosy; and have also been demonstrated in non-lactating breast secretions.2–4 However, to the best of our knowledge granulomatous mastitis, manifesting as gynecothelia, due to leprosy has not been reported so far. Other diseases that may cause granulomatous inflammatory lesions of the breast are tuberculosis, sarcoidosis and Wegener’s granulomatosis, which must be included in the differential diagnoses of granulomatous mastitis.4 However, in the event of a failure to find a cause for granulomatous mastitis after relevant investigations, it is considered as idiopathic.5 In our case, the clinico-histological findings confirmed leprosy. To conclude, it is imperative to take cognizance of leprosy as a potential cause of granulomatous mastitis.

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References