Case report

Localized lepromatous leprosy

Khalid M. Alwunais

Dermatology Department in Dammam Medical Complex, Dammam, Saudi Arabia

Received 10 February 2015; accepted 30 March 2015
Available online 4 April 2015

Abstract

Lepromatous leprosy is usually generalized at diagnosis and may consist of erythematous macules, papules and nodules containing abundant *Mycobacterium leprae* and affecting wide spread areas of the skin. Localized skin involvement by lepromatous leprosy is rare.

In this report a 37 year old Filipino man presented with erythematous lesions localized on the right elbow and left knee for 9 months associated with diminished sensation.

Clinically the patient presented with localized lesions mimicking tuberculoid leprosy, although a biopsy from the lesion revealed lepromatous type leprosy.

A skin biopsy showed numerous acid fast bacilli and fat laden macrophages with a paucity of lymphocytes, Slit skin smear examination for *M. leprae* from the lesion revealed a Bacteriological Index (BI) of 6+ which is compatible with lepromatous leprosy.

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Keywords: Localized lepromatous leprosy

1. Case report

A 37 year old Filipino man complains of skin lesions on the right elbow and left knee since 9 months. His father was treated for lepromatous leprosy 12 years ago. Physical examination revealed two erythematous anesthetic plaques with a sharply defined and elevated border localized over the right elbow (Fig. 1) and left knee (Fig. 2). No other lesions were noted over the entire body. There was no peripheral nerve thickening. The rest of the examination was normal.

A skin biopsy showed thinning of the epidermis with an underlying clear grenz zone, the dermis showed numerous acid-fast bacilli and fat laden macrophages with a paucity of lymphocytes, only pilar muscle left behind, no hair follicles or sweat glands. A Fite stain showed numerous acid-fast bacilli within foamy histocytes (Figs. 3–7). Slit skin smear examination for *Mycobacterium leprae* from the lesion revealed a Bacteriological Index (BI) of 6+ while it was negative from the ear lobes and other sites. All these features were compatible with lepromatous leprosy.

Complete blood count, liver function tests, renal function tests and G6PD level were normal.

Patient was treated for multibacillary leprosy with dapsone 100 mg/day, clofazimine 50 mg/day, and rifampin 600 mg plus clofazimine 300 mg/month for 12 months.

2. Discussion

Leprosy is a chronic infection caused by the acid fast, rod shaped bacillus *M. leprae* which involves the skin and peripheral nerves. Leprosy is an important global health concern, early diagnosis and a full course of...
treatment are critical for preventing lifelong neuropathy and disability (Global leprosy situation, 2010).

Leprosy can manifest in different forms, depending on the host response to the organism. Individuals who have a vigorous cellular immune response to \textit{M. leprae} have the tuberculoid form of the disease that usually involves the skin and peripheral nerves. The number of skin lesions is limited. This form of the disease is also referred to as paucibacillary leprosy because of the low number of bacteria in the skin lesions, histologic finding of tuberculoid lesions contain few to no acid fast bacilli but manifest granulomatous changes with epithelial cells and lymphocytes.

- **Figure 1.** Erythematous plaque with a sharply defined and elevated border on the right elbow.
- **Figure 2.** Erythematous plaque with a sharply defined and elevated border on the left knee.
- **Figure 3.** Low power view showing thinning of the epidermis with an underlying clear grenz zone, the dermis shows dense infiltrate of foamy histocytes with a paucity of lymphocytes.
- **Figure 4.** Closer view showing thinning of the epidermis with an underlying clear grenz zone.
- **Figure 5.** Closer view showing dense infiltrate of predominantly foamy histocytes with a paucity of lymphocytes.
- **Figure 6.** Closer view showing only pilar muscle left behind, no hair follicles or sweat glands.
- **Figure 7.** Numerous acid fast bacilli in clumps called globi seen with Fite stain.
In contrast, Individuals with minimal cellular immune response have the lepromatous form of the disease, which is characterized by extensive skin involvement. This form of the disease is also referred to as multibacillary leprosy because of the large number of bacteria found in the lesions, histologic finding of lepromatous lesions generally contain numerous acid fast bacilli and fat laden macrophages with a paucity of lymphocytes (Pardillo et al., 2007).

Leprosy is staged or graded based on microscopy findings to classify cases as paucibacillary or multibacillary so that duration and type of drug therapy can be determined. It is important that patients are classified correctly in the leprosy spectrum, so that they may receive the most appropriate treatment. In the case presented here there were two lesions which clinically mimick tuberculoid leprosy, although a biopsy from the lesion and Slit skin smear examination for *M. leprae* revealed lepromatous type leprosy.

The presentation of lepromatous leprosy as localized lesions with a high bacterial count is a rare occurrence that shows a discrepancy between the histological findings and clinical features, and has been reported as an unusual presentation (Narang et al., 2008; Thappa et al., 2002; Kar B, 2004; Arunthathi et al., 1995). The presentation of lepromatous leprosy as localized lesions remains rare and reinforces the fact that certain aspects of the host cell mediated response and pathophysiology of this disease are still not fully understood. It is important to consider lepromatous leprosy presenting as localized lesions because such cases can be undertreated.

3. Conflict of interest

No conflict of interest.

References


