ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

Published by JK Welfare & Pharmascope Foundation Journal Home Page: https://ijrps.com

A rare case of mid-borderline leprosy

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Article History:

Received on: 04.01.2018
Revised on: 22.07.2018
Accepted on: 24.07.2018

Keywords:

Camptothecin
Carotenoid
Cellulase enzyme
Extraction
HPLC

ABSTRACT

Leprosy is an infectious disease, which is caused by *Mycobacterium leprae.* Majority of the times, clinical judgment is enough for diagnosis. However, in some, histopathology can be essential. A 33-year-old male presented with asymptomatic red raised lesions over the face, upper limbs and lower limbs for the past 3 months. On examination, multiple erythematous, annular, asymmetrically distributed, infiltrated plaques with sharply punched out inner margins and sloping outer margins with clinically normal skin in the center, were found over the face, upper and lower limbs. Altered tactile sensations were noted over the lesions on the lower limbs. Bilateral ulnar and lateral popliteal nerves were thickened but not- tender. Slit skin smear showed *M.leprae*. Based on the characteristic morphology of the lesions and other clinical features, a diagnosis of mid- borderline leprosy was made. Histopathology showed normal epidermis with underlying dermis showing multiple well-defined granulomas composed of epithelioid cells and Langhans type of giant cells with scanty lymphocytic infiltration. The case is being presented in the light of clinical-histological disparity. This highlights the importance of histopathological examination for exact subtyping of leprosy to facilitate the institution of the accurate mode of therapy with stress on the importance of newer MDT in such cases to prevent drug-resistance, relapse and recurrence.

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ISSN: 0975-7538

DOI: https://doi.org/10.26452/ijrps.v9i4.1658

Production and Hosted by

IJRPS | https://ijrps.com

INTRODUCTION

Leprosy is an infectious disease, which is caused by *Mycobacterium leprae*. The disease mainly affects the peripheral nervous system, the skin, and certain other tissues such as the reticuloendothelial system, bones and joints, eyes, mucous membranes, testes and muscles. It has a varied clinical spectrum, which is manifested based on the immune status of the host.[1]Majority of the times, clinical judgment is adequate for diagnosis, but in some, histopathology can be important. Due to a varied spectrum of clinical manifestations in leprosy, it is important to have a system of classification. The mislabeling of a case can lead to inadequate therapy, which may be disastrous to the case and also to the society. Here we present such a case of leprosy with the disparity between the clinical findings and histology.

CASE REPORT

A 33-year-old male, presented with asymptomatic red raised lesions over the face, upper limbs and lower limbs for the past 3 months. The lesions gradually increased in size and number. There was no history of fever, bleeding from the nose, visual disturbances, hoarseness of voice, weakness of upper and lower limbs or testicular pain. The general physical examination was normal. On cutaneous examination, multiple erythematous, annular, asymmetrically distributed, infiltrated plaques with sharply punched out inner margins and

sloping outer margins, with clinically normal skin in the center were found over the face, upper and lower limbs. (Figure 1). Altered tactile sensations were found over the lesions on the lower limbs. Bilateral ulnar nerves and lateral popliteal nerves were found to be thickened but non-tender. No tender nodules were found anywhere on the body. No motor loss was found. No madarosis was observed. Gait was normal and no trophic ulcers were found. Slit skin smear was positive for lepra bacilli. Based on the characteristic morphology of the lesions and other clinical features, a diagnosis of mid-borderline or borderline-borderline (BB) leprosy was made. A 4mm punch biopsy was taken from the edge of the lesion and staining was done with hematoxylin/eosin and Fife Faraco's stains. Histopathology showed normal epidermis with underlying dermis showing multiple well-defined granulomas containing, epitheloid cells and Langhans type of giant cells with scanty lymphocytic infiltration surrounding the neurovascular bundle (Figure 2).

DISCUSSION

Leprosy has a broad clinical spectrum of disease. The most commonly accepted classification is that of Ridley and Jopling, which is based on clinical, histopathological, immunological and bacteriological findings (Ridéey D and Jopling WH, 1996). Consistency among these parameters was found to be less (Sehgal VN *et al.,* 1985).

Borderline-borderline leprosy is the immunologic midpoint in the spectrum of the disease. This form of leprosy is the most unstable and least common form. It characteristically presents as numerous, asymmetrically distributed, annular plaques, which has sharp interior and exterior borders with islands of normal looking skin within the plaques. Its characteristic histopathology shows a small number of lymphocytes distributed among less organised epithelioid cells (Lucas SB *et al.,* 1988). Many studies have shown diversities between the clinical and histopathological features. The maximum correlation was seen in LL patients and the least agreement was seen in cases of mid borderline leprosy (Shenoi SD and Siddappa K, 1988; Nadkarni NS and Rege VL, 1999; Sharma A *et al.,* 2008; Mathur MC *et al.,* 2012). Histopathology of skin lesions in leprosy varies from compact granulomas to diffuse infiltration of the dermis, which majorly depends upon the immune status of the host (Mathur MC *et al.,* 2012). Consistency among the clinical, histological, immunological and bacteriological parameters, was found to be less than 50% (Thakkar S and Patel SV, 2014). Our case was another glaring example of such disparity. Clinically it appeared as mid borderline leprosy but histologically proved to be a borderline tuberculoid case. The cases in the borderline group are in changing immunological spectrum and hence the histological classification, because of its precise features, gives a better indication of the shift in the spectrum, than clinical classification. In these situations, the case should be considered as multibacillary one and newer drugs such as sparfloxacin, ofloxacin and minocycline should have opted for treatment (Majumdar S, 2003).

CONCLUSION

This case report highlights the importance of histopathological examination for early diagnosis and exact subtyping of leprosy to facilitate the institution of the accurate mode of therapy to prevent drug-resistance, relapse and recurrence.

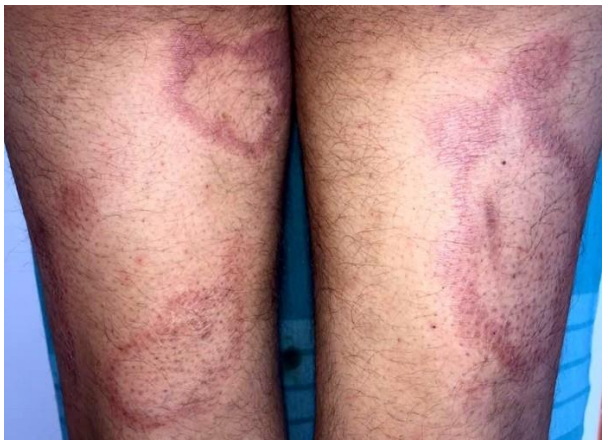

Figure 1: Asymmetrical, annular plaques with sharp interior and exterior borders

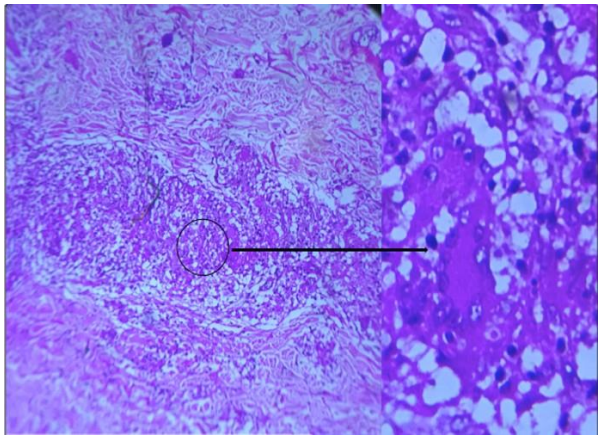

Figure 2: Dermis showing multiple well-defined granulomas composed of epithelioid cells and Langhans type of giant cells

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