Chapter 14
A 50-Year-Old Male with Multiple Hypopigmented Macules and Patches

Rashmi Sarkar and Pooja Agarwal

Abstract Borderline lepromatous leprosy is one of the unstable variants of leprosy with a myriad of clinical cutaneous lesions. As most of the time, it occurs as a result of downgrading from an upper pole with numerous skin lesions, but not so well-defined and slightly infiltrated macules with coppery hue, round, or oval of about 2–3 cm in diameter are not so symmetrical. Infiltration takes place within the initial macules creating a plaque. The bacteriological index ranges from 3+ to 5+, and foamy macrophages along with lymphocytes characterize the histopathology. We presented a case of borderline lepromatous leprosy without any reaction and deformity.

Keywords Borderline leprosy · Numerous plaques · Asymmetrical · Foamy macrophage

Clinical Presentation

A 50-year-old male, resident of Uttar Pradesh, visited the dermatology OPD with hypoaesthetic hypopigmented skin lesions over both cheeks and forehead, bilateral upper limbs, upper back, chest, and both lower limbs for 1 year. For the past 3–4 months, the patient also complained of four episodes of fever, during which these lesions became more prominent. There was a complaint of tingling and numbness in the left leg for 3–4 months. There was no history of nasal stuffiness, epistaxis, testicular swelling, fall of objects from hands, or slippage of footwear. There was no history of any sharp shooting pain in limbs. On examination, there were numerous hypopigmented macules and patches distributed asymmetrically over the extremities, trunk, face, and buttock of size ranging from 5×6 cm^2 to 1×1 cm^2

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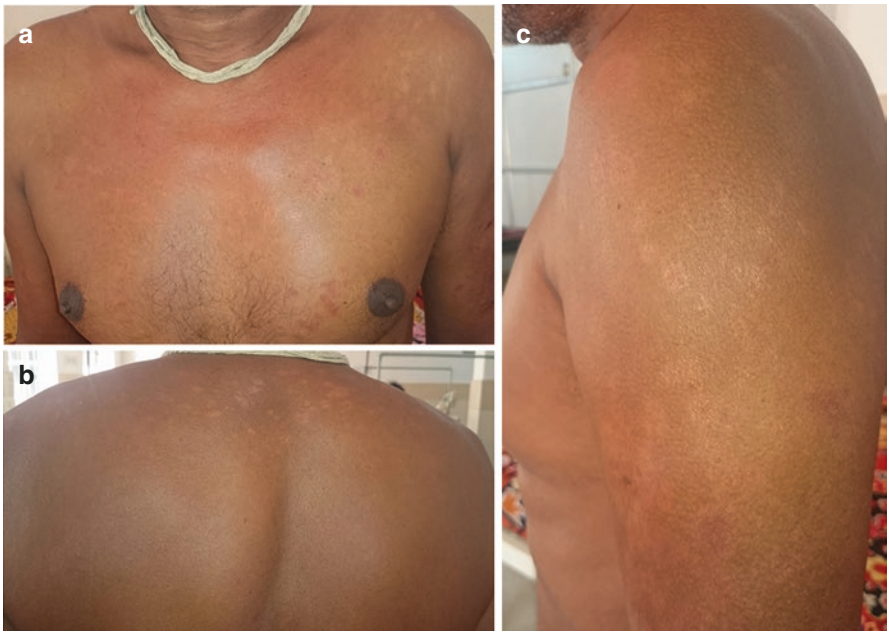

Fig. 14.1 (**a**) Multiple hypopigmented macule and patches over the chest. (**b**) Hypopigmented macules and patches over the upper back. (**c**) Hypopigmented macules and patches over the left arm

(Fig. 14.1a–c) There was a 20 to 30% loss of sensation over the patches. Both ulnar nerve enlargement (grade 1) and right posterior tibial nerve enlargement (grade 1) were present without tenderness. Other sensory, motor, and eye examinations were normal without any disability.

What Is Your Diagnosis?

- Borderline lepromatous leprosy
- Leishmaniasis
- Sarcoidosis
- Mycosis fungoides

Investigations

- Slit skin smear from the earlobe and lesion showed 3+ and 4+ BI, respectively.
- The skin biopsy taken from the smaller lesion showed epidermis atrophy, grenz zone, and granuloma consisting predominantly of macrophages with isolated

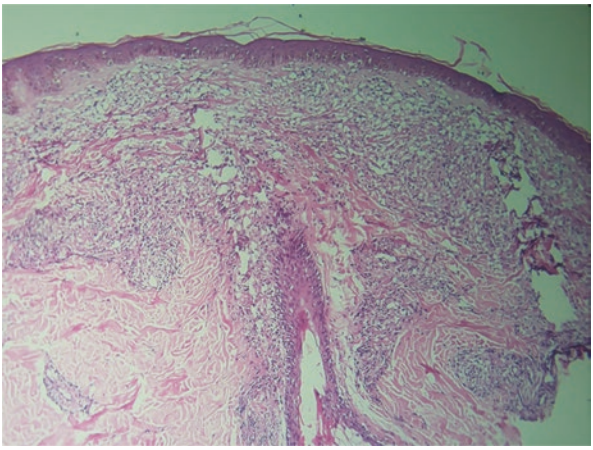

Fig. 14.2 Perineural infiltration consisting of lymphocytes, histiocytes, and foamy histiocytes (H&E ×100)

clumps of epithelioid cells. Macrophages show early foamy changes with intracellular bacilli frequently in spheroidal masses along with the absence of giant cells. Perineural infiltrates showed concentric infiltrate of lymphocytes, histiocytes, and foamy histiocytes giving a cut-onion appearance (Fig. 14.2).

- Serum ACE level was normal.
- Nerve USG: Uniform cylindrical thickening of bilateral ulnar, right common peroneal, and posterior tibial nerve.
- Nerve conduction study showed reduced amplitude of sensory and motor nerve action potential bilateral ulnar nerves.
- The Mitsuda reaction in the lepromin test was negative.

Final Diagnosis

Borderline lepromatous leprosy not in reaction with no disability

Discussion

Among five groups of Ridley-Jopling classification, tuberculoid (TT) and lepromatous leprosy (LL) are immunologically stable poles, while borderline tuberculoid leprosy (BT), borderline leprosy (BB), and borderline lepromatous (BL) are unstable types. These borderline types may up- or downgrade according to host cell-mediated immunity, and hence early detection and treatment are important to prevent disabilities and deformities.

Borderline lepromatous leprosy is characterized by numerous skin lesions which are distinct and are usually the result of downgrading from an upper pole, and it is

rare to find a de novo case of BL leprosy. The disease may begin with slightly infiltrated multiple small macules and papules having a coppery hue (not well appreciated in Indian skin tone) which are distributed over the body. The distribution of these macules does not follow any symmetrical pattern as is seen in lepromatous leprosy. It is not uncommon to find areas of apparently normal skin in between these lesions. As the disease progresses, papules, nodules, and plaques develop. When the disease has presented as a result of downgrading, the plaques may have bizarre geographical shapes and sloping margins which merge into the nearby normal skin. Along with the larger-sized plaques, multiple small papules may also be seen which indicate a further downgrading towards the lepromatous pole. The infiltration usually starts from the centre of the lesion and is more apparent in that part as compared to peripheral infiltration seen in borderline tuberculoid lesions. Facial and ear lobe infiltration may start appearing but is not as evident as in lepromatous leprosy, and the eyebrows are usually not or only partially affected.

Though there may be loss of sensation over the lesions along with a decrease in sweating and hair growth, it is less marked as compared to the BT leprosy lesions but more evident than LL leprosy lesions. The enlargement of peripheral nerves is usually asymmetrical as opposed to higher poles, and some patients may start developing glove and stocking type of anaesthesia also. BL patients are more prone to develop reactions because of the unstable nature of the disease. Type 2 reactions are more common than type 1 reactions, which occur only infrequently. Rare myriad presentations of borderline lepromatous leprosy which have been reported include psoriasiform and mycosis fungoides-like lesions, involvement of immune zones like palms, and lesions mimicking tinea versicolor [1–4].

Histopathological examination reveals an atrophic epidermis with a clear grenz zone separating the epidermis from the underlying macrophage granulomas. Some of the macrophages may have foamy cytoplasm. Leprosy bacilli are found in small globi and are plentiful. A small focus of epithelioid cells and occasional plasma cells may also be seen.

A characteristic feature is a dense clumped or widely scattered infiltrate of lymphocytes over the whole or a part of granuloma. It is of interest that lymphocytes are seen in only one another spectrum that is tuberculoid leprosy. Nerves are easy to identify with the peculiar, laminated appearance of the perineurium and perineural cell proliferation which has been likened to “onion skin.” A dense peripheral cuff of lymphocytes around a nerve bundle in a granuloma favours BL [5–7].

In our case, the diagnosis of borderline lepromatous leprosy was made by clinicohistopathological correlation, and we treated the patient with MB-MDT adult drug regimen for 2 years as the bacteriological index was more than 2+.

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