Chapter 12
Erythematous Plaque on the Lower Face

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Abstract A 55-year-old female presented to our outpatient department with an erythematous plaque on the lower side of the face and upper lip for 8–9 months. On examination, sensations were intact, and no peripheral nerves were palpable. All the routine investigations were within normal limits. Skin biopsy was done which confirmed the diagnosis of borderline tuberculoid leprosy with 1+ bacillary index. Patient was treated with MB-MDT regimen along with supportive treatment.

Keywords Leprosy · Borderline tuberculoid leprosy

Clinical Presentation

A 55-year-old female, housewife, and a resident of Saharanpur (Uttar Pradesh) presented with raised, erythematous plaques on the lower side of the face (chin) and upper lip for the last 8–9 months. The lesions were mostly asymptomatic barring some tingling sensation intermittently; lesions showed gradual progression in size and shape without any history of regression of the lesion or spontaneous remission. There was no apparent loss of sensation over the lesions. Patient had no history of similar lesions previously, no significant family history, and no history of diabetes, hypertension, and other comorbidities. On examination, ulnar and peroneal nerves showed no apparent thickening or tenderness, and feeding nerve to the lesion was not distinctively palpable. Motor examination was normal, and the sensory examination was inconclusive. On physical examination, the plaques were edematous, non-tender, with ill-defined margins, measuring 8 × 6 cm present over the chin and right lower side of the cheek, and 5 × 2 cm involving the upper lip (Fig. 12.1a, b). Submandibular, posterior auricular and cervical lymph nodes were palpable

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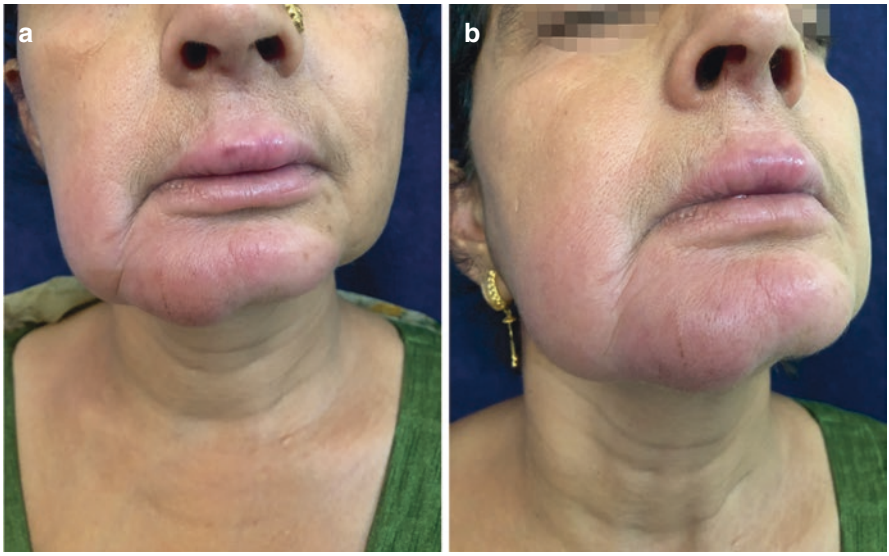

Fig. 12.1 (**a** and **b**) Erythematous plaque on the lower face involving the lip

within normal limits and were non-tender. No hepatosplenomegaly was detected on physical examination. Oral cavity was normal.

What Is Your Diagnosis?

1. Hansen's disease
2. Sarcoidosis
3. Leishmaniasis
4. Lupus vulgaris
5. Lymphocytoma cutis
6. Jessner's lymphocytic infiltrate

Investigations

All routine blood investigations were within normal limits, chest x-ray PA view was normal, angiotensin-converting enzyme levels were within normal limits, and serum calcium was also normal. Peripheral blood smear examination was negative for LD bodies. Mantoux test was negative, which along with normal chest x-ray findings ruled out lupus vulgaris. Slit skin smear was done from the lesion which was negative for AFB (lepra bacilli) and LD bodies. Skin biopsy was taken from the lesion which on histology showed a well-defined epithelioid cell granuloma with a

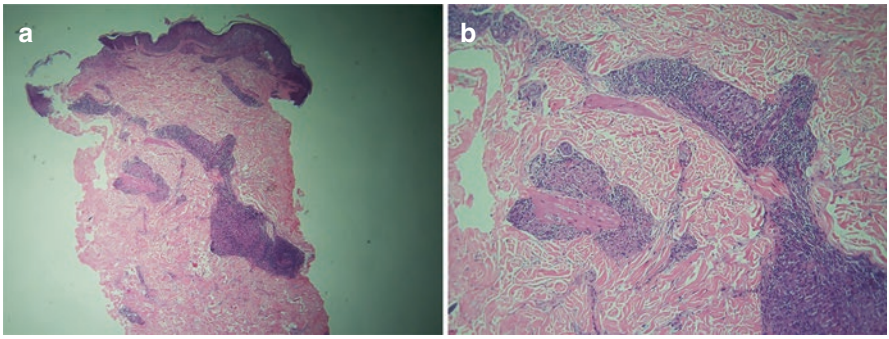

Fig. 12.2 (**a**) Curvilinear granuloma in the upper and deep dermis (H&E ×40). (**b**) Granuloma around the nerve and arrector pili muscle (H&E ×100)

moderate number of lymphocytes located mainly around the dermal nerves (Fig. 12.2a, b). Perineural and perivascular lymphocytic infiltration was noted along with a few lepra bacilli on ZN staining (bacillary index 1+).

Final Diagnosis

Borderline tuberculoid leprosy without any reaction or trophic ulceration.

Discussion

A leprosy patient is defined as one who is found to have clinical signs and symptoms of the disease and who requires chemotherapy [1]. Paucibacillary leprosy (PBL) includes indeterminate (I), tuberculoid (TT), and borderline tuberculoid (BT) patients diagnosed clinically and histologically with the bacteriological index less than two on at any site [2].

Lesions of BT leprosy do not show well-defined margins, and the border of the lesion may be sloping outwards which may fade imperceptibly into the surrounding normal skin. Some cases may show extension of the primary lesion at one edge known as pseudopodium or small, discreet lesions surrounding the primary lesion known as satellite lesions. Skin lesions can differ in number (three to ten), size, and contour.

One of the important features of BT leprosy is the susceptibility to type 1 reactions in either skin lesions or nerves or both. Patients with long-standing BT leprosy often present to the OPD after the onset of type 1 reaction. Careful history taking and examination are necessary to elicit any nerve tenderness or early evidence of weakness or anesthesia of hands or feet requiring immediate intervention. If that's not the case, then BT leprosy may continue for many years with recurrent bouts of inflammation leading to progressive nerve damage, paralysis, and deformity.

In our case, the characteristic loss of sensations were absent, no peripheral nerves were enlarged, and also the number of lesions were uncharacteristic, which made the diagnostic journey of this case an interesting one. However, morphology of the lesion along with the histology confirmed the diagnosis of borderline tuberculoid leprosy. According to the spectrum of the disease, patient required paucibacillary regimen, but because of the presence of lepra bacilli in histopathology, patient was started on MB-MDT regimen along with supportive treatment, which again highlights the importance of skin biopsy in diagnosis and in defining the treatment regimen. Few other interesting cases have been reported in which clinically the lesions of leprosy mimicked angioedema, lupus vulgaris, cutaneous t-cell lymphoma, etc. [3] The uncommon disease presentations also include disease presenting with a single nodule or localized area of papules and nodules, Lucio leprosy, and spontaneous ulcerations seen in long-standing untreated lepromatous leprosy [4].

India is one of the countries where patients with paucibacillary leprosy constitute more than 70 percent of all leprosy patients [5]. The skin smear in BT leprosy is usually negative for AFB (L), or, at the most, only a few bacilli may be seen. Because of the low bacterial load, most of these patients are not infectious and are not considered to be important in spreading leprosy in the population. However, these patients constitute a large percentage of the total leprosy population who have a high rate of deformities [6]. By providing effective and appropriate treatment, the deformities and the associated morbidity can be easily prevented [7].

Sensory nerve supply of the face is mainly by **trigeminal nerve** (CN V), which provides sensory innervation via its ophthalmic division (CN V1), maxillary division (CN V2), and mandibular division (CN V3). The face has overlapping regions of sensory innervation which leads to the absence of characteristic lesional anesthesia in cases with tuberculoid spectrum of leprosy.

Leprosy is a spectral disease; its range of clinical presentations is wide. It can mimic many dermatological and neurological disorders. So, in an endemic country like India, we still need to have an eye to recognize the varied manifestations of leprosy, which emphasizes the importance of proper history and skin biopsy in diagnosing the challenging cases.

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