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Case Report

Leprosy mimicry of lupus vulgaris and misdiagnosis of leprosy - a case report

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Leprosy and tuberculosis (TB) both are still rampant in India. Leprosy predominantly presents through skin manifestations whereas cutaneous manifestations of TB though not so frequent but are not rare. Lupus vulgaris (LV), the commonest of all cutaneous manifestations of TB, mimics leprosy very closely and may prompt the examiner to misdiagnose leprosy, especially, by health workers (HW), in a field situation, where leprosy is diagnosed and treated on clinical basis alone as per NLEP guidelines. Because of existing stigmata, such wrong diagnosis can put the patient and the party under psychological stress and creates unnecessary complications.

Key words : Tuberculosis, Lupus vulgaris, BT leprosy, *M. leprae*.

Introduction

Leprosy (Hansen's disease) is a chronic infectious disease caused by *Mycobacterium leprae*. It is widely prevalent in India and India is still regarded as a country with a large number of leprosy cases. India, in 2006, has registered from its states and union territories (UTs) 139252 of new leprosy cases which is 56% of the total leprosy cases (250017) reported globally and tops the list of countries having reported 1000 or more new cases (Joshi et al 2007).

Leprosy is a disease of protean manifestations and has wide variations in its clinical presentation. The disease may closely mimic several skin, neurological and other diseases (Thangaraj 1985). The disease has been integrated with the general health care delivery system since 2005. Clinical diagnosis is made by examination of the skin patch or patches and patches with definite impairment of sensations (Kumar and Dogra 2009, NLEP 2009). Slit-skin smears are not recommended/ done in the present settings. Delays in the diagnosis are not uncommon and misdiagnosis is more common in non-endemic countries, where the disease is rare (Kumar and Dogra 2009). Here is a case report.

Case report

A 12 year old Muslim boy of sixth standard from Bishnupur town under Bankura district of West Bengal reported to our Regional Leprosy Training

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and Research Institute, Gouripur in March 2010 with a circumscribed, erythematous skin patch of 2.5" x 1.5" size over the upper part of left forearm with two small ulcers and discharging sinus tract, located adjacent to the skin lesion of two months duration. The third ulcer was found located over the skin lesion was also of the same duration. On examination the lesion was found red, swelled and raised with diminished sensation over the patch with a tendency to spread (satellite lesion) prompted us to think of leprosy-borderline tuberculoid (BT), paucibacillary (PB). Examination also revealed discharge coming out from those adjacent two indurated ulcer/abscesses prompting us to think of severe type 1 reaction, though no nerve thickening was detected neither over the left Ulnar nerve nor over the lesion or in the vicinity. No neck glands were palpable and no scar mark of BCG was found on examination. In view of clinical discrepancies, biopsy from the anesthetic, erythematous lesion was suggested to clinch the actual histopathological diagnosis.

Routine examination of blood and urine revealed nothing significant except eosinophilla (10%). The boy was put on PB(C)-MDT till the report of slit-skin smear for acid-fast bacilli (AFB) and biopsy report from the lesion became available to us.

Chest X-ray (PA) revealed no parenchymal lesion. Slit-skin smear for from all four sites were negative for AFB. However, the biopsy report was suggestive of lupus vulgaris, having epidermal atrophy, fair number of necrotizing and non-necrotizing epithelioid cell granulomas, evidence of caseous necrosis and prominence of Langhan's giant cells located within upper dermis without any obvious nerve involvement, neither any edema, nor any evidence of fibrinoid necrosis. No AFB was seen in histopathology sections by modified ZN stain, however, routine ZN stain revealed AFB in moderate numbers in aspirated material from discharging sinuses. MDT was stopped immediately and the patient was given a course of standard conventional anti-tubercular drugs (ATD) regimen for sixth months to cure the

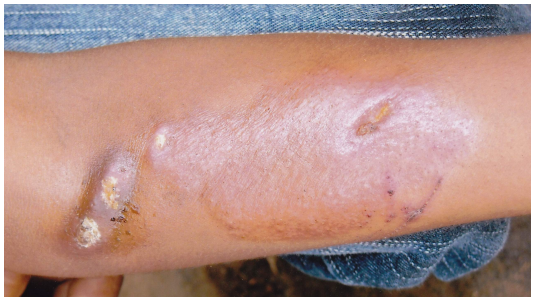

Fig 1 : Lesion in left arm before treatment showing erythematous patch, raised from the surface with a tendency to spread and two discharging sinus tracts.

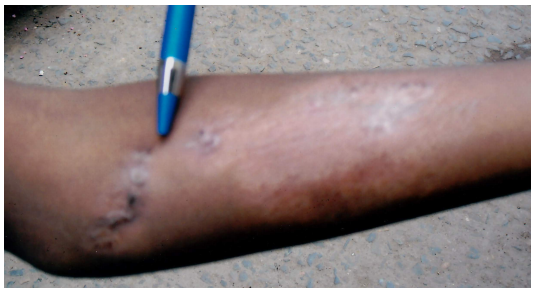

Fig 2 : Lesion after treatment with ATD for six months with healing discharging sinuses and diminished size of the lesion and hypopigmentation.

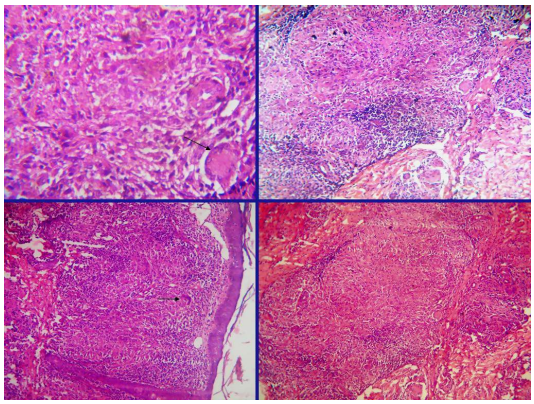

Fig 3 : Histopathology of the skin lesion proper, showing epidermal atrophy, epithelioid cell granulomas with evidence of caseous necrosis and fair number of Langhan's giant cells, consistent with lupus vulgaris (H & E X 100).

condition. The patient improved well with diminution of the size of the patch and healing of the discharging ulcers as shown in Figure 1 (before ATD) and Figure 2 (after six months of ATD). Histopathological examination of the skin lesion showed epidermal atrophy, necrotizing and non-necrotizing epithelioid cell granulomas with Langhan's giant cells (Figure 3).

Discussion

Diagnosis of leprosy is made based on it's cardinal signs which are (a) hypopigmented or reddish skin lesion(s) with definite loss of sensation, (b) thickened peripheral nerve(s) with impairment of sensation in the area supplied, (c) AFB in the slit-skin smear. Presence of any one of these signs has been regarded as a sufficient ground for diagnosis of leprosy (Kumar and Dogra 2009). The reported case was diagnosed as a case of leprosy on observing the cardinal sign no (a) - as the reported case had erythematous skin lesion with diminished loss of sensation. The disease was classified as PB (BT) variety with severe type 1 reaction on observing the red, swollen patch with it's tendency to spread at the margins and having one ulcer over the patch (NLEP 2009) as shown in the Figure 1. Severe type 1 reaction is usually associated with neuritis over the nearby nerve trunk and sometimes there may be ulcer formation over the lesion with constitutional symptoms (Kumar and Dogra 2009, NLEP 2009). But, here neither the nearby left ulnar nerve had neuritis nor had presence of any constitutional symptom. Thus, presence of two discharging ulcers with sinus tract outside the patch led us to think of condition(s) other than leprosy and biopsy was done for histopathological examination to confirm and to determine the actual nature of the lesion. MDT can be started, as per guideline, before the arrival of bacteriological report (NLEP 2009) as done here and stopped on receiving the biopsy (histopathological) report from proper skin lesion which was found consistent with lupus vulgaris (skin TB), though the histopathology of type 1 reaction has still not well evaluated (Ridley and Radia 1981); absent of edema, fibrinoid necrosis, absent neural involvement, fair number of Langhan's giant cells are suggestive of histopathological diagnosis of lupus vulgaris and as the patient responded well to six months treatment with conventional ATD drugs. Lesion of lupus vulgaris is not uncommon in India and such lesion may have doubtful sensation (NLEP 2009) that may be deceiving. Tendency to over diagnose leprosy by leprologist and field workers is not uncommon especially in our country where leprosy is endemic and diagnosis is made in field condition on cardinal signs alone. Out of this tendency and close resemblance inclusion of non-leprosy cases, such as lesion of lupus vulgaris, as a case of leprosy are not unusual as happened here. Therefore, utmost care should be taken and clinical acumen be exercised, especially, in field areas before arriving at final diagnosis to prevent misdiagnosis and wrong management. Otherwise, embarrassing situation will only ensue.

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