

Borderline Tuberculoid Leprosy and Alopecia Areata Involving Scalp

TO THE EDITOR:

The scalp is considered to be one of the immune zones of leprosy. Though rare, there are some cases reported in the literature, mostly in the multibacillary patients with lesions of leprosy on the scalp^(1,3,4,6,7,8). In most of these multibacillary cases, the involvement was predominantly of the bald areas. We report an interesting observation about a borderline tuberculoid (BT) leprosy lesion involving the hairy scalp with a co-existing alopecia areata.

CASE REPORT

A 35-year-old male patient presented to us with the complaints of an erythematous swollen lesion with sensory loss and burning sensations across his forehead for a duration of four months. The patient also gave a history of bald patches over his scalp with a spontaneous regrowth of hair in some of them. The patient had two such episodes of hair loss and regrowth in the last year. There was no history or sign suggestive of any systemic disease. On cutaneous examination, there was a well-defined, infiltrated, erythematous, warm, swollen, non-tender, anesthetic plaque measuring about 5 × 7 cm across his forehead extending inside the hairline into his scalp with partial loss of hair (The Fig.). A small satellite lesion was present, but no local nerve thickening or tenderness was noted. There was no weakness of the orbicularis oculi detected and his eyebrows were intact. Further examination of his scalp revealed two well-defined, smooth, bald patches over his left parietal and occipital region of approximately 2 × 3 cm in size. The exclamation hair sign was positive, and there were no other epidermal changes over these patches. In addition, there were no lesions over any other part of his body, and the peripheral nerve trunks were not thickened. A clinical diagnosis of BT leprosy in type 1 reaction with alopecia areata was made. A slit-skin smear from the lesion was negative for acid-fast bacilli

(AFB). Histopathology of the lesion showed granulomas composed of mainly epithelioid cells, a few Langhans' giant cells, lymphocytes and histiocytes in the upper dermis with destruction of appendages and dermal nerves. No AFB were demonstrated in the section.

The patient was started on World Health Organization multidrug therapy paucibacillary (WHO-MDT PB) regimen along with 40 mg prednisolone in view of the type 1 reaction involving his facial lesion. The dose of prednisolone was gradually tapered and stopped over 6 months according to the response. The patient was also advised to apply topical 2% minoxidil solution over the bald patches. The patient had almost complete regrowth of hair in previous bald patches over his scalp and no new similar patches were noticed when the patient visited us for his 6-month follow up.

DISCUSSION

It is well-known that *Mycobacterium leprae* have a distinct predilection for the cooler parts of the body. Because the hairy scalp has been shown to have a higher temperature compared to that of the forearm⁽²⁾, it is considered to be one of the immune zones of leprosy; however, there are rare instances of scalp involvement in borderline and lepromatous leprosy and in many of these cases the patients had bald scalps. Out of 10 cases of lepromatous leprosy observed by Faget, *et al.*⁽⁴⁾, 3 showed clinical involvement in the form of diffuse infiltration in 2 and nodular lesions in one. Kaur and Kumar⁽⁶⁾ observed acid-fast bacilli in 4 cases of borderline leprosy and in all 16 cases of lepromatous leprosy. Bedi, *et al.*⁽³⁾, in a study of 20 lepromatous leprosy cases detected AFB in 2 cases and histopathological changes of leprosy in the scalp of 4 patients. There are few individual case reports on scalp involvement in BL and LL cases^(1,7,8).

To the best of our knowledge, only one case of tuberculoid⁽⁵⁾ and two cases of bor-



THE FIG. Borderline tuberculoid lesion on forehead extending to the hairy scalp.

derline tuberculoid (BT) (^{9, 10}) with leprosy lesions on the scalp have been reported. While the tuberculoid plaque was present on the hairy occipital part of the scalp, a borderline tuberculoid lesion (BT) was seen on the scalp of an Indian Brahmin male who had followed the ritual of shaving off his scalp throughout his life (⁹). In this case, the involvement of the scalp was probably due to the similar temperature of the shaved and the bald scalp. However, in the other case reported to have a BT lesion, the whole frontal and parietal area of the scalp was involved with intact hair over the patch and surrounding scalp (¹⁰). In our patient, the lesion was present across his forehead extending from inside the hairy scalp in the frontal region. Alopecia areata over the scalp was another interesting observation in this patient. After reviewing the literature, we could find only two cases of alopecia areata observed in a study of 846 leprosy patients from India (¹¹). However, considering alopecia areata to be one of the common dermatoses affecting 1%–2% of dermatology outpatients, this association may be a chance occurrence. This case report indicates that the scalp may not always act as an immune zone of leprosy, and that rarely

can the hairy scalp be involved in BT leprosy.

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