

CORRESPONDENCE

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Increased Pigmentation of Skin Along Course of Superficial Veins of Lower Limbs in Chronic Plantar Ulceration of Leprosy Patients

TO THE EDITOR:

Increased pigmentation of the skin along the venous channels was found in approximately 5% of leprosy patients suffering from chronic plantar ulceration. In reviewing the literature on venous changes in leprosy patients, pigmentation of the skin was not mentioned. Hyperpigmentation may be local or general, and may result from an increased amount of melanin, deposition of heavy metals, extraneous pigmentation, and/or vascular disturbances (¹).

Vascular disturbance is common in leprosy due to autonomic neuropathy. The control over the vasculature is lost, resulting in dilatation of vessels and venous stasis. Chronic ulceration of the foot due to anesthesia is common in leprosy patients, resulting in ascending infection and inflammation.

During 1982–1985 at the Central Leprosy Teaching and Research Institute, Chengalpattu, India, 20 cases of leprosy patients with chronic plantar ulceration and pigmentation along the superficial veins chosen randomly were studied. Patients with varicose veins were omitted from the study. Cases of diabetes with plantar ulceration and other nonleprosy patients with plantar ulceration were not included in the study since they are not treated at our Institute.

The following information was included on each patient's chart: name, age, sex, skin smear for acid-fast bacilli (AFB), type of leprosy, duration of leprosy, duration of pig-

mentation, condition of veins, such as consistency and direction of blood flow, neuritis, reactions, edema of the leg, eczema, sensations in the leg and pulsation of vessels. Stretch sign, which means persistence of pigmentation of the skin (Fig. 1) on drawing away the skin from the underlying vein, was tested. Those cases with a positive stretch sign were studied further. Biopsy was done taking the skin, subcutaneous tissue and vein enblock. Sections were stained with hematoxylin and eosin (H&E) and Fite's stain for AFB. Changes in the epidermis, dermis, subcutaneous tissue, and the vein were studied.

Of the 20 cases studied, duration of the disease varied from 4 to 25 years, an average of 19.3 years. The pigmentation was found more in lepromatous cases since plantar ulcers are more common in them. Only one lower limb was involved in 15 cases, and in five cases bilateral involvement was seen. The duration of plantar ulceration varied from 6 months to 20 years, an average of 9.3 years. Posterior tibial pulsation was felt in all cases. Sensations were diminished below the knee joint in nine cases. Dermatitis was a common finding in the lower third of the leg, and was found in 16 cases.

Under microscopy, the epidermis showed focal atrophy and mild hyperkeratotic changes. There was increased melanin pigment in the basal-cell layer of the epidermis (Fig. 2). There was lymphocytic and histiocytic infiltration around dermal append-

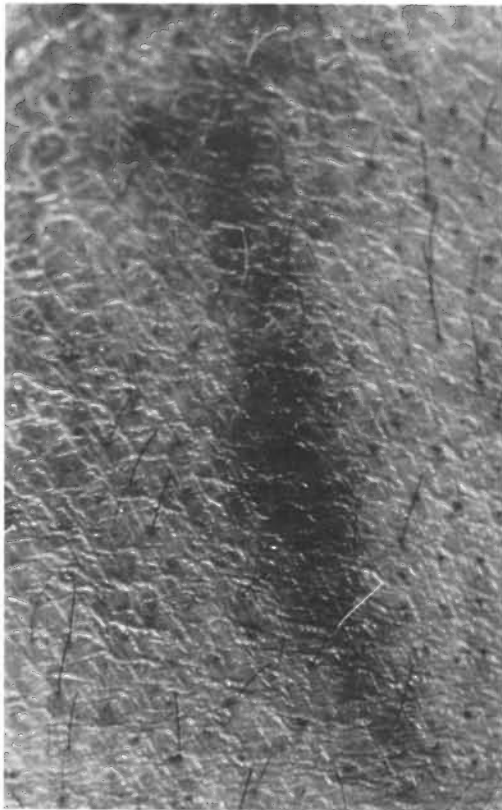


FIG. 1. Pigmentation of the skin along superficial leg vein.

ages. The vein showed tortuosity and a decrease in the size of the lumen. The intima and media were markedly thickened. In some cases, a thrombus was seen in the lumen with recanalization. Acid-fast fragmented bacilli were seen in the vessel in five cases.

Fite (²), Kaur, *et al.* (³), Coruh and McDougall (¹), and Mukherjee, *et al.* (^{5,6}) have reported changes in the subcutaneous veins of leprosy patients but have not reported pigmentation. Venous changes occur in leprosy due to autonomic neuropathy, direct involvement of vessels by *Mycobacterium leprae*, and ascending inflammation and infection in recurrent chronic plantar ulcers. Venous stasis is a common feature due to the above causes and gravity adds to the severity of the changes. These changes in the vein apparently can stimulate the melanin cells present in the overlying epidermis, leading to increased pigmentation of

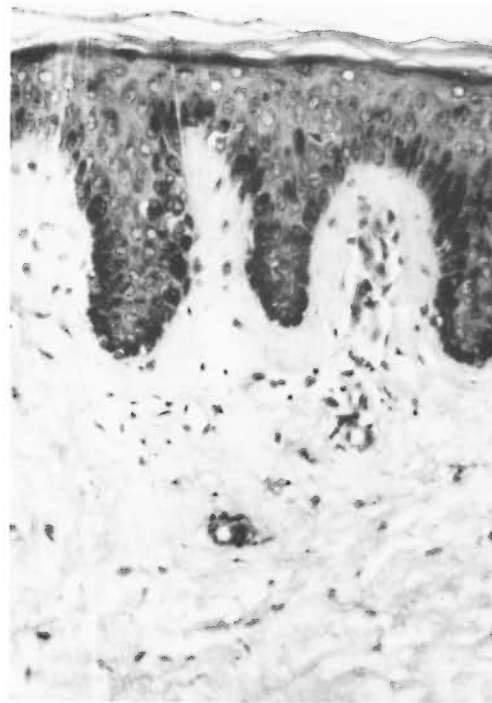


FIG. 2. Photomicrogram of skin and subcutaneous tissue showing increased melanin in the basal-cell layer (H&E $\times 160$).

the skin along the course of the superficial veins.

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