

## Leprous Phlebitis<sup>1</sup>

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Involvement of medium-sized and large blood vessels in leprosy is not generally seen. The vascular involvement in this disease is believed to be generally limited to the terminal capillary loops (<sup>1</sup>). On the other hand, nerves are very frequently affected. Consequently, whenever a thick cord-like structure is felt below the skin in a case of leprosy, one naturally presumes it to be a thickened cutaneous nerve. During routine biopsies of such thickened "nerves" at this Institute, it was found that in two cases these structures turned out to be grossly infiltrated veins. It was therefore decided to study biopsy specimens of such cord-like thickenings to find out the frequency of infiltrated veins. Subsequently, four more cases of "leprosy phlebitis" were recorded. The clinical and histopathological findings are detailed.

### CLINICAL PRESENTATION

All six were cases of lepromatous leprosy. They had had the disease for periods ranging from 3 to 9 years. Two cases had no prior treatment, two had received dapsone for 3 and 6 months respectively, and the remaining two cases had received rifampin and dapsone for 1 and 1½ years respectively. In the first two cases and also in one of the subsequent ones, the structures were recognized clinically as "thickened nerves" and biopsied as such. The remaining three cases were clinically labelled as "leprosy phlebitis."

The structures were present on the extremities in all the cases. The three biopsied as nerves were located on the medial side of the flexor aspect of the forearm (medial cutaneous nerves of forearm?), along the lateral edge of the Achilles tendon (sural nerve?), and on the medial side of the dorsum of the foot (branch of saphenous

nerve?/vein?). The three biopsied as veins were present on the extensor aspect of the forearm extending onto the dorsum of the hand (Fig. 1).

The criteria on which the structures were called inflamed veins clinically in the latter group were:

- 1) continuity with a palpable or visible vein;
- 2) location in an area where anatomically no major cutaneous nerve twigs are found; and
- 3) continuity across limits of nerve supply.

The consistency of the structures as palpated was not different from that of the usual thickened nerve twigs seen in patients with leprosy.

### HISTOPATHOLOGICAL FINDINGS

There was infiltration and thickening of the wall of the vein with reduction in the size of the lumen. The degree of occlusion ranged from 25% to complete blocking. All three layers of the blood vessel wall were infiltrated, with the intima showing maximum involvement (Fig. 2). The internal elastic lamina was seen as a compressed but intact layer in 5 cases while in one the whole vein wall had been replaced by granuloma. The infiltrate was composed of vacuolated macrophages, plasma cells, and occasional lymphocytes. Acid-fast bacilli (AFB) were present throughout the wall of the vein, mainly in the vacuolated macrophages. Occasional smooth muscle cells of the tunica media contained organisms. In two cases, the endothelial lining cells also had AFB in their cytoplasm, and in one of them rupture of the endothelial cells and presence of free bacilli in the lumen was noted. Periadventitial granulomata were present in all cases. Small infiltrated nerve twigs in the periadventitial tissue were seen in two cases.

### DISCUSSION

This brief report focuses attention on one of the forms of vascular involvement seen

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FIG. 1. Thickened, firm, cord-like veins over the distal forearm of a leprosy patient.



FIG. 2. Photomicrograph showing infiltration of all three layers of the vein wall and reduction of lumen. Verhoeff's-Van Gieson elastic stain,  $\times 120$ .

in leprosy, i.e., leprous phlebitis. First reported by Phillipson in 1899<sup>(10)</sup>, this lesion is generally believed to occur rarely in patients with leprosy<sup>(4,5,6,9)</sup>. The six cases reported here were all recorded within a year's time at a single clinic. Furthermore, three of these were clinically suspected to be infiltrated nerve twigs because of the high rate of involvement of nerves in leprosy. It seems, therefore, that the true frequency of this lesion may turn out to be more than what is presumed, if all the so-called "thickened nerves" in patients with leprosy were properly examined in greater detail.

The histology of the lesion reveals it to be a specific phlebitis caused by *M. leprae*. The lesion probably starts with the deposition of organisms circulating in the blood in the intimal layers of the veins. The predominant intimal involvement suggests that this possibility is more likely than entry of the organisms through the vasa vasorum. The lower temperatures in the subcutaneous veins of the extremities probably fur-

ther help the lodgement and multiplication of the organisms at these sites.

Most textbooks on leprosy describe vascular involvement as being restricted to the terminal capillary loops in skin and other organs<sup>(1,2)</sup>. The earlier work of Fite<sup>(4)</sup>, Mitsuda<sup>(9)</sup>, and more recent arteriographic studies<sup>(7)</sup> have shown a consistent, although late, involvement of the medium sized arterial and venous system of the extremities. Histopathological data about the nature and extent of this vascular involvement is lacking. Involvement of the smaller arterioles and venules is, of course, quite frequently seen in skin biopsies, and on occasion these may be more heavily involved than the nerve tissues<sup>(8)</sup>.

All these facts point to a greater involvement of the peripheral vascular system in leprosy than is currently supposed. The potential role of this involvement in creating a reservoir of bacilli which can easily be released into the blood stream is obvious. The presence of large numbers of bacilli in the blood<sup>(3,11)</sup> further emphasizes the im-

portance of the circulatory system in this disease.

### SUMMARY

Six cases of phlebitis of leprous origin affecting the superficial veins have been recorded. This lesion does not seem to be as rare as was previously believed. The clinical and histopathological details of these cases are presented.

### RESÚMEN

Se presentan los datos clínicos e histopatológicos de 6 casos de flebitis de origen leproso con afección de las venas superficiales. Esta lesión no parece ser tan rara como antes se pensaba.

### RÉSUMÉ

Six cas de phlébite d'origine lépreuse, affectant les veines superficielles, sont présentés. Cette lésion ne semble pas rare, ainsi qu'on le croyait autrefois. Les détails cliniques et histopathologiques de ces cas sont relatés.

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