THE TABLE. *Results of PCR reactions on PB specimens.*

No.	Histo-logical diagnosis	Weight (mg)	Undi-luted sus-pension	Sus-pension diluted 1/10
1	TT	40.6	I[a]	–
2	BT	37.4	+	
3	BT	34.6	+	
4	BT	32.2	I	–
5	PI[b]	26.7	I	–
6	BT	20.4	I	–
7	BT	13.6	–	
8	TT	12.3	I	–
9	BT	9.1	I	I
10	BT	8.5	+	

[a] I = Inhibitors.
[b] PI = Perivascular infiltration; no definite sign of leprosy.

cobacterium leprae DNA in some PB cases, probably those containing the higher number of *M. leprae* still compatible with PB leprosy.

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Unusual Cell of Leprous Neuritis

TO THE EDITOR:

For the past two decades we have been studying leprous nerve lesions from various angles, and the use of electron microscopy has proved particularly useful in defining some of the early as well as aberrent pathology ([4, 5]). In this spectral disease the exact identification of a battery of infiltrating lymphoid and phagocytic cells, seen in different stages of development, is very difficult at the fine structural level. However, every cell is an entity by itself with a morphological feature of its own, and it is here that electron microscopy helps in elucidating the details.

In this short communication we wish to report on the presence of an unusual cell type frequently seen in active and chronic nerve lesions obtained from both treated and untreated cases of borderline (BB) to lepromatous (LL) leprosy ([3]) and as yet unreported.

The cells in question were seen within the endoneurium, were strikingly rich in rough endoplasmic reticulum (RER), and were seen in close association with small groups of axons and Schwann cells. Moreover, these cells were seen with an even or sometimes irregular coating of basal lamina around them. The stacking of RER and the nuclear appearance of some of the cells resembled that of a plasma cell (Fig. 1). We have not seen any presence of *M. leprae* in these unusual cells, but a bacterial presence was seen in the Schwann cell processes lying in close association with them.

The frequency with which these cells were seen in several of the nerve lesions, to our mind, does not appear to be a chance finding. However, the origin and function of these cells is debatable. They could be either transformed Schwann cells or migratory cells that have invaded the basal laminal tube of the Schwann cells. That Schwann cells are known to synthesize and to secrete collagen

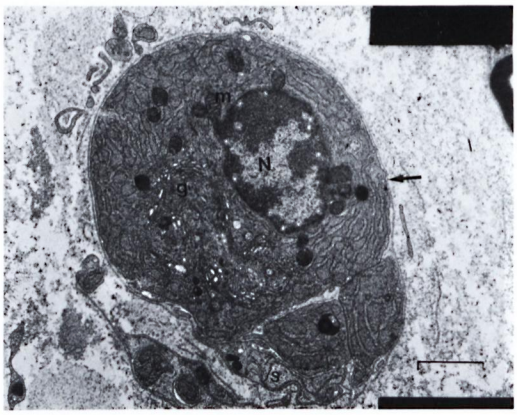

FIG. 1. Electron micrograph of one of the unusual cells from part of a sural nerve biopsy obtained from a multidrug-treated BL patient. There are abundant arrays of rough endoplasmic reticulum and a well-developed golgi complex (g) within the cytoplasm. Mitochondria (m) and a few dense bodies are also seen. A small part of the cell cytoplasm resembles that of a Schwann cell(s). Note the even coating of the basal lamina (arrow) around this cell. N = nucleus. Uranyl acetate and lead citrate stain; bar = 1 μm.

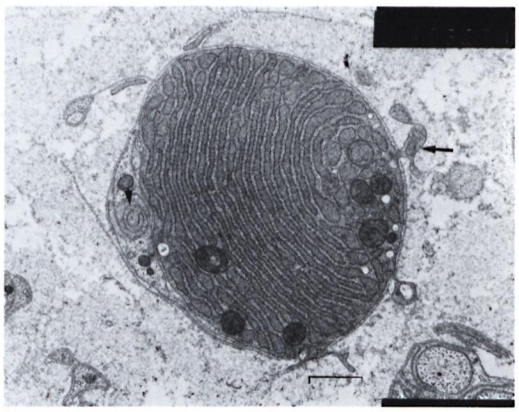

FIG. 2. Electron micrograph of another unusual cell from a sural nerve biopsy from a multidrug-treated BL patient showing foot-print-like processes (arrow) protruding out of the basal laminal tube. The continuity of the basal lamina is disrupted at these sites. Note the presence of abundant arrays of rough endoplasmic reticulum and an axon-like profile with an extended axolemma (arrowhead) on one side. Uranyl acetate and lead citrate stain; bar = 1 μm.

and increase in endoplasmic reticulum (both smooth and rough) has been reported in activated Schwann cells ([1]) but not to the extent and type that has been seen in these unusual cells.

One strong evidence that these are probably migratory cells that have invaded the basal laminal tubes of the Schwann cells is the presence of an occasional foot-print-like process seen protruding from the basal laminal tube (Fig. 2).

One of the cell types known to invade the basal laminal tube of Schwann cells are activated macrophages. In a demyelinating disorder like Guillain-Barré syndrome (GBS) and its experimental counterpart experimental allergic neuritis (EAN), macrophages invade the basal laminal tube and take an active role in stripping, phagocytosis, and breakdown of myelin in an immune-mediated process ([2]). However, the morphological appearance of the cells in question does not resemble an activated macrophage nor were they ever seen in the process of engulfing myelin.

Other known cells which are rich in RER are the collagen-synthesizing fibroblasts, immunoglobulin-secreting plasma cells, and the secretory epithelioid cells that have been described in granulomas of delayed-type hypersensitivity reactions ([6]). None of these cells are known phagocytes and, if it can be assumed that any one of these cell types could have invaded (or become trapped in) the basal laminal tube of a Schwann cell, then what function they subserve remains an open question.

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Clarithromycin at Very Low Levels and on Intermittent Administration Inhibits the Growth of *M. leprae* in Mice

TO THE EDITOR:

Clarithromycin was found previously to inhibit the metabolic activity of *Mycobacterium leprae* in cell-free and tissue culture systems ([2]). Furthermore, it had been determined that when *M. leprae*-infected mice were fed a diet containing clarithromycin [0.01% ([4]) and 0.1% ([5]) and 25 mg/kg by gavage five times weekly ([7])], bactericidal activity for *M. leprae* was consistently observed. In none of these studies was clarithromycin administered at a dietary concentration which was found ineffective and, therefore, we initiated these current studies to define clarithromycin's minimal inhibitory dietary, serum, and tissue concentrations for *M. leprae* in infected mice. The World Health Organization ([14]) has for the past decade advocated monthly rifampin in the treatment of leprosy. Since a companion antimicrobial agent which has proven activity on intermittent administration might offer particular utility in the practical delivery of effective therapy to leprosy patients in endemic countries, in these studies we also determined the efficacy of intermittent clarithromycin administration in this mouse model system.

Eight-week-old, female, BALB/c weanling mice (Jackson Laboratories, Bar Harbor, Maine, U.S.A.) were infected in both hind foot pads with 5000 *M. leprae*. The *M. leprae* isolate utilized in this study originally had been obtained from a lepromatous leprosy patient, maintained in mouse passage in our laboratory for the previous 10 years, and was harvested from the foot pads of mice near the time of its peak multiplication. From the time of infection, groups of mice were continuously fed diet containing various concentrations of clarithromycin [0% (control), 0.0001%, 0.001%, 0.005%, 0.01%, 0.05%, 0.1%]. Also, groups of mice were treated with 0.1% in diet 3 days weekly (M, W, F), 1 day weekly, and 1 day monthly. At 7, 9, and 11 months after infection, the number of *M. leprae* from the foot pad pools of two mice (four feet) from each group were determined by standard microscopic procedures ([12]). When the number of *M. leprae* per foot pad was found to be $\geq 10^5$, bacillary growth was considered to have occurred ([13]).

At 7 months, *M. leprae* grew to 2×10^5/foot pad in the untreated control mice, and remained at approximately that level at the 9- and 11-month harvest intervals (The Table). Clarithromycin 0.0001% in the diet did not inhibit *M. leprae* multiplication (The Table). However, clarithromycin 0.001%, 0.005%, 0.01%, 0.05%, and 0.1% each prevented *M. leprae* multiplication at all three harvest intervals (The Table). Clarithromycin 0.1% in the diet 3 days weekly and even 1 day weekly, also, consistently inhibited the growth of *M. leprae,* while multiplication of *M. leprae* in mice treated only once monthly was inhibited both at 7 and 9 months, but not at the 11-month interval (The Table).

Also, in these studies, mice were fed 2 weeks of each of the test diets, and clarithromycin concentrations in the mouse serum (five mice) and foot pads (one mouse) were determined by an agar disk diffusion method employing *Micrococcus luteus* ATCC 93418 ([3]) (Abbott Laboratories, North Chicago, Illinois, U.S.A.). In the untreated con-