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Patterns of Radial Paralysis in Leprosy in Papua-New Guinea[1]

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It is well known that geographic variations occur in the clinical features of leprosy; e.g., differences in the lepromatous/nonlepromatous ratio, the rarity of nerve abscesses in African patients as compared with their frequency in India ([2]), the loss of scalp hair ([4]) and trigeminal motor paralysis ([7]) seen in some patients of Mongolian origin, and the Lucio phenomenon, which seems to be confined to Latin America ([5]).

This paper presents data on leprosy patients with radial palsy in Papua-New Guinea, and describes a pattern of paralysis that seems not to have been reported previously, which is at least as common in this country as the classic triple palsy.

MATERIAL

Examination of the case records of the first 500 patients admitted to this Unit shows that 39 had clinical evidence of radial nerve involvement in 43 arms. We have made no deliberate attempt to collect patients with wristdrop. The only way in which this series is selected is in the emphasis given to the correction of footdrop, which was the prime reason for the admission of more than 200 persons. Because of this bias the first 500 patients were not representative of the deformed group of our leprosy patients, but it seems very unlikely that these figures give an inflated impression of the frequency of radial paralysis in this group.

The varieties of nerve involvement seen in this series are set forth in Table 1.

High triple palsy, complete. Sensory loss, with or without other incontrovertible evidence of leprosy, distinguished this group from poliomyelitis. One of the patients also had almost complete paralysis of the triceps in the same arm.

High triple palsy, incomplete. This group consisted of patients with complete or incomplete radial paralysis, complete high ulnar paralysis, complete low median paralysis and partial or complete loss of some of the long flexors supplied by the median nerve.

Classic triple palsy, complete. This category was characterized by complete paralysis of all the muscles of the forearm and hand with the exception of the median supplied long flexors, which were of full strength. In every case there was glove anesthesia.

Classic triple palsy, incomplete. This group was made up of those patients with high ulnar/low paralysis and partial and/or selective paralysis of radial-supplied muscles.

Radial/ulnar paralysis only. This group consisted of 18 patients. We now recognize this as the most common single pattern of paralysis involving the radial nerve in New Guinean patients. Almost all of these cases were of long duration, and on DDS therapy for several years. In some cases the median nerve was clearly palpable at the wrist, but the thenar muscles were graded at least 4 on the Medical Research Council scale, and sensation was preserved over the median distribution in every case. In one case there was no detectable loss of sensation. Several patients had radial weakness rather than complete paralysis.

Radial swelling only. There was only one case in this group. This single case was included because of the isolated finding of unquestionable enlargement of the nerve in the spiral groove, without other evidence of involvement of the arm.

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TABLE 1. *Syndromes involving radial nerve in relation to classification of patients.*

Pattern of involvement	Classification of patients				
	T	B	L	N	Total
High triple palsy, complete	2	—	—	—	2
High triple palsy, incomplete	3	—	—	3	6
Classic triple palsy, complete	7	2	—	4	13
Classic triple palsy, incomplete	2	—	1	—	3
Radial/ulnar paralysis, median spared	15	2	—	1	18
Radial swelling only	—	1	—	—	1
Total	29	5	1	8	43

The number of cases presented is admittedly too small to demonstrate significant differences in the incidence of radial palsy in various classes of patient. About 80 per cent of the leprosy population in this country have the tuberculoid type of the disease, and almost all the others are lepromatous. The reason for the appearance of only one

ported the same experience. It would seem, therefore, that the finding of radial/ulnar paralysis as the commonest single pattern of disease clinically affecting the radial nerve, together with some damage of this nerve in about 7 per cent of our patients with any deformity at all, is unusual.