A FURTHER NOTE ON NERVE ABSCESS IN LEPROSY

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The following notes have been prepared in response to an inquiry regarding certain cases of nerve abscess demonstrated to Wade when visiting the Dichpali Leprosy Hospital, from one of which was taken the material which he describes in a separate paper (1). The present note serves to supplement my previous report on the subject (2).

Incidence.—During the eight years that I was at Dichpali I saw about 5,000 cases of leprosy, and operated on roughly 100 cases of nerve abscess. The incidence thus works out at about 2 per cent. However, about half of these abscesses developed under treatment by potassium iodide. Since they would probably not have occurred without this treatment, the natural incidence in that region is probably not more than 1 per cent. A rather curious fact in this connection is that I do not remember ever seeing a case in a female.

Type of case.—This condition is seen almost exclusively in pure nerve-type cases. Occasionally an abscess will be found in a N2-Cl case, but practically never in cases with marked cutaneous lesions even if there are coexisting nerve lesions.

Nerves affected.—The ulnar nerve above the elbow is the commonest site of this lesion. However, I have seen abscesses in the median nerve at the wrist and also higher up, in the radial in the arm and forearm, in the common peroneal and superficial peroneal, in almost all the cutaneous nerves of the forearm and leg, and also in the great auricular.

Multiple abscesses in the same cutaneous nerve are commonly seen, but the condition is not as frequently multiple in the nerve trunks. It is also a fairly common occurrence to find abscesses in more than one nerve in the same patient. I had under observation for several years a patient who during that time developed fourteen abscesses, situated in the following nerves: both ulnars, both common peroneals, both posterior cutaneous nerves of the legs and both

superficial peroneals; there were also three abscesses in cutaneous nerves of one forearm, two in those of the other, and one in a cutaneous nerve in an upper arm.

Relation to the nerve.—The process of necrosis and liquefaction starts inside the nerve sheath. At this stage there is often pain, which is sometimes excruciating. This occurs particularly when nerve trunks like the ulnar are involved, for abscesses in cutaneous nerves are frequently quite painless. Often the abscess bursts through the sheath and forms a swelling outside it, connected with the nerve by a pedicle. When this happens there is much less pain because of diminished tension within the sheath. The abscess outside the nerve may attain the size of a hen's egg, but it is usually smaller. Sometimes where there are multiple abscesses in one nerve caseation between the abscesses is detected at operation, and inside the nerve sheath there may be a sinus which joins up the different abscesses.

Content of abscess.—Usually the abscess contains a fluid or semifluid material centrally, while in the outer parts the content is grumous and cheesy. I have found *Mycobacterium leprae* in smears from about 50 per cent of the abscesses, always in small numbers. In practically every case smears made at the time of operation from the thickened nerve near the abscess have shown some—not many—bacilli.

Progress and significance.—Abscess formation is, as a rule, not an acute process but rather a chronic one, requiring several weeks or months. There is first inflammation and thickening of the nerve, followed later by caseation and the formation of a cold abscess. This condition, being inside the sheath, causes a fusiform swelling that may not be detected as an abscess except at operation. However, as has been said, the abscess often bursts through the sheath and burrows in the neighboring tissues, frequently becoming adherent to the skin or other structures. It may even perforate the skin; the sinus thus formed discharges for several weeks or months, healing and breaking down again, and this may continue for years before final healing takes place.

Frequently a single nerve abscess is the only sign of active leprosy in the patient. I consider that this condition indicates a good prognosis, for it seems to be associated with marked immunity and to be a method of localizing the disease and of healing. Many such patients undergo spontaneous arrest, and in no case have I

observed the subsequent development of marked cutaneous lesions. Unfortunately, abscess formation is frequently followed by trophic lesions in the distribution of the affected nerve.

Treatment of nerve abscess.—The occurrence of definite nerve abscess in a nerve trunk such as the ulnar I regard as indicating the necessity of surgical treatment. Even if there is merely a painful fusiform swelling of the nerve, which may or may not be an abscess, operation is advisable. The affected nerve is exposed under general anesthesia. If the abscess has burst through the sheath the entire mass including the surrounding capsule can be excised. At the same time the nerve should be carefully dissected out or stripped over the area of marked thickening. If removal of the sheath is impossible owing to dense adhesions, multiple longitudinal incisions through it should be made in order to relieve the pressure. Frequently caseous material is found inside the sheath; this should be removed as far as possible, with care to avoid damage to the nerve fibers. Drainage is usually unnecessary.

This operative procedure greatly accelerates the healing of nerve abscess, and in cases in which the abscess is inside the sheath the removal of the sheath relieves the pressure and the resulting pain, which may be very severe. If operation is performed early, before the inflammation and pressure have permanently damaged or destroyed the nerve fibers and before trophic lesions have developed, these developments may be prevented. With abscesses in cutaneous nerves surgical treatment is not so essential since severe pain is not usually present, and such abscesses of course do not cause marked trophic lesions. However, though not essential, operation is often advisable.

Nerve abscess in Calcutta.—This condition is quite as common in Calcutta as it is in Dichpali, but there are differences. In the latter place they are seen most commonly in the nerve trunks; in the former they are most common in cutaneous nerves supplying (tuberculoid) macules. This corresponds to the differences in the clinical manifestations of nerve leprosy as it is seen in these two centers. In Dichpali glove and stocking anesthesia, etc., are the commonest manifestations of this type of the disease, whereas in Calcutta macular (tuberculoid) lesions predominate.

REFERENCES

(1) WADE, H. W. Tuberculoid changes in leprosy. III. The pathology of a nerve abscess. Internat. Jour. Lep. 2 (1934) 293.

(2) LOWE, J. Nerve abscess in leprosy. Indian Med. Gaz. 64 (1929) 24.

DESCRIPTION OF PLATES

PLATE 1

FIG. 1. Abscess in cutaneous nerve supplying macule.

FIG. 2. Abscess of great auricular nerve. (Photograph by Dr. E. Muir.)

FIG. 3. Abscess of ulnar nerve.

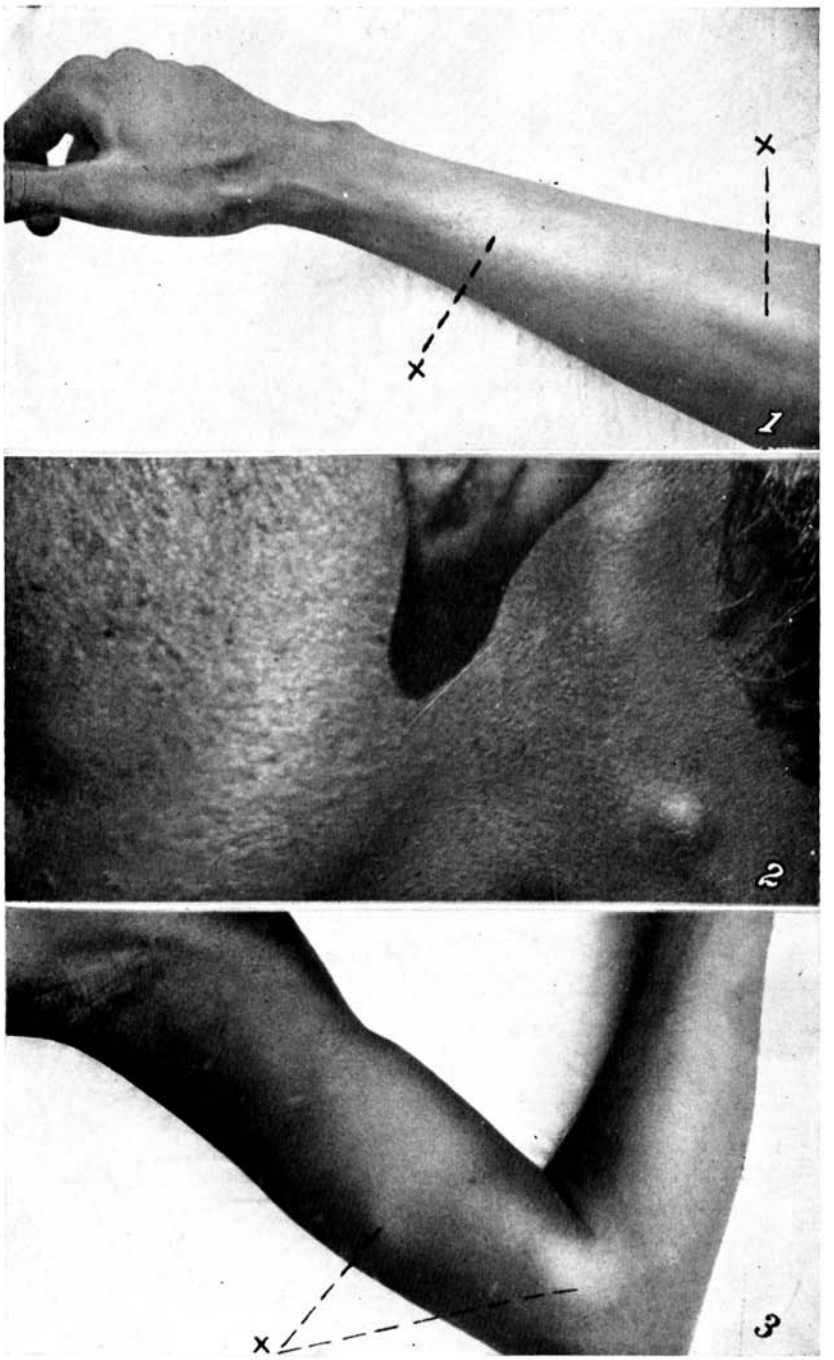

PLATE 1.

PLATE 2

FIG. 4. An abscess in the median nerve.

FIG. 5. Double abscess in the great auricular nerve. The tip of the earlobe and its shadow are in the upper part of the picture. (Photograph by Dr. E. Muir.)

FIG. 6. Abscess of ulnar nerve exposed at operation. The encapsulated abscess is seen in the middle, with the thickened nerve at each end. (Photograph by Dr. E. Muir.)

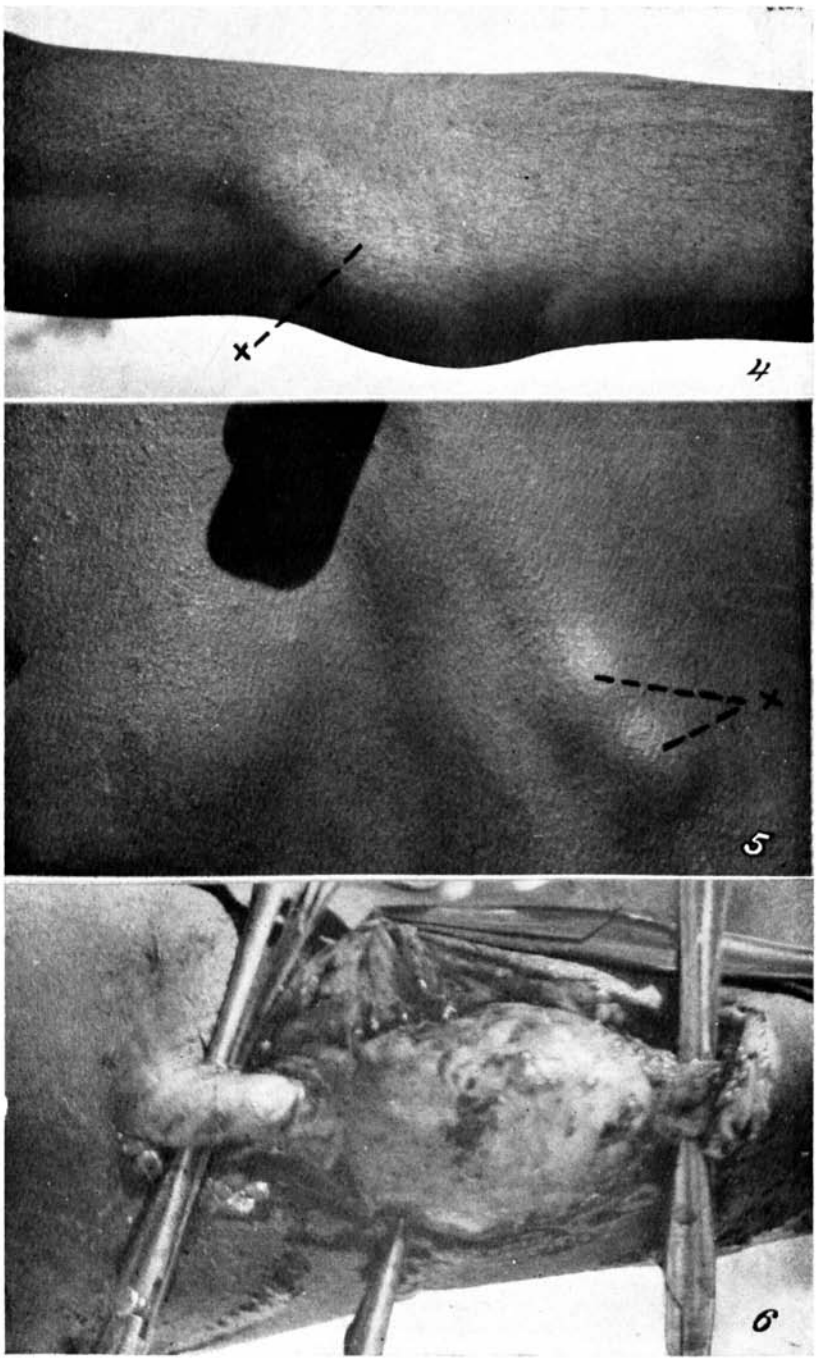

PLATE 2.