

MANAGEMENT OF NERVE ABSCESSSES IN LEPROSY

K. P. BHAGAT * H. M. WANGE † B. U. TEKANI ‡

Summary

Nineteen cases of ulnar nerve abscess were subjected to evacuation and later on to extraneural decompression with medical longitudinal epineurotomy. Excellent sensory recovery was seen and was earlier than motor recovery. Sensory recovery was seen more in younger than in older age group. Evacuation of abscess and extraneural and intraneural decompression reduces the pressure effects on nerve and recovery is seen which can be explained on the basis of increased vascularity, post-operatively.

Leprosy is essentially a disease of peripheral nerves and most commonly presents with skin patches. It may manifest with pyrexia, oedema of nasal mucous membrane, eye lesions, epistaxis, erythema, nodosum leprosum, subcutaneous nodules, hepatomegaly, splenomegaly, orchitis, arthritis, gynaecomastia and various neuropathies. Leprosy presenting as nerve abscesses is rare. The most common nerve involved is the ulnar which is followed in frequency by the lateral popliteal, median and posterior tibial nerves. Babcock (1907) was one of the first surgeons to recommend endoneurolysis by multiple longitudinal incisions. Many surgical procedures like external and internal neurolysis¹, external neurolysis with anterior transposition², resection of thickened sheath, neurolysis and transposition, division of fascial roof and excision of fibrous arch, and external neurolysis³ have been carried out without much success. Brand (1952)

reported that operation on actively inflamed nerves, results in further damage and subsequent fibrosis.

Material and Methods

This study consists of 19 cases of ulnar nerve abscesses due to leprosy. They were subjected to evacuation and drainage of the abscess and subsequently to extraneural decompression with a medial longitudinal epineurotomy (intraneural decompression). This was carried out at Swami Ramanand Teerth Rural Medical College and Hospital, Ambajogai between 1976 and 1978. There were 14 males and 5 females in 10 to 60 years age group. All patients were treated with anti-leprosy drugs for varying periods of time. Majority of the patients had tuberculoid leprosy and few⁷ had borderline leprosy¹². Tingling and numbness on hands and later on all signs of acute inflammation of the nerve were present. Majority of patients were referred from local leprosy unit. Detailed history was taken and complete clinical examination was carried out on all of them. Sensory and motor testing was done before as well as after surgical treatment. All cases were subjected to

* Reader in Surgery & Unit in-charge of Orthopaedics and reconstructive surgery.

† Lecturer in Surgery.

‡ Physiotherapist

Swami Ramanand Teerth Rural Medical College and Hospital, Ambajogai 431517

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physiotherapy postoperatively. Splintage, stimulation, exercises and wax baths were given to them.

Evacuation and drainage of abscesses was carried out on every patient and thereafter they were subjected to external decompression of the ulnar nerve with medial longitudinal epineurotomy by microsurgical technique. The ulnar nerve at the elbow was exposed through an incision placed 2.5 inches above and 1.5 inches below the medial epicondyle. The deep fascia of the anterior medial compartment of the upper arm was exposed after incising the skin and subcutaneous tissues. It was divided longitudinally and this was continued, to divide the fibro-osseous tunnel between the olecranon and the medial epicondyle. Division of the overlined tendinous fibres of origin of flexor carpi ulnaris provided a complete extraneural release. The whole exposed portion of nerve was cleared without lifting it from its bed. Then intraneural decompression was done through a medial longitudinal epineurotomy with the help of fine non-tooth forceps and fine scissors. Skin was closed and a compression bandage was given. The whole procedure was carried out under tourniquet. Postoperatively all patients were continued with anti-leprosy drugs and were followed at regular intervals. Sensory and motor testing was carried out at each follow up study. Results were evaluated on the basis of sensory and motor charting, subjective improvement and objective findings.

TABLE 1
Showing age group and number of patients

Sr. No.	Age in years	No. of cases
1.	0-10	1
2.	11-20	2
3.	21-30	9
4.	31-40	5
5.	41-50	1
6.	51-60	1
Total		19 cases

TABLE 2
Showing symptoms and signs and number of cases

Sr. No.	Symptoms and signs	No. of cases
1.	Pain	3
2.	Tingling & numbness	12
3.	Acute abscess	19
4.	Early claw hand	4
5.	Sensory loss	11
6.	Motor weakness	5
7.	Ulcer	2
8.	Patch	3
9.	Symptomless	1

TABLE 3
Showing number of cases with sensory recovery against age and duration of disease

Sr. No.	No. of cases with sensory recovery	Age in years	Duration in months
1.	1	11-20	<3
2.	5	21-30	4-6
3.	4	31-40	7-12
4.	1	41-50	>12

TABLE 4
Showing motor recovery against age group and duration of disease

Sr. No.	No. of cases with motor recovery	Age in years	Duration in months
1.	Nil	11-20	<6
2.	1	21-30	7-12
3.	3	31-40	12-24
4.	1	41-50	>24

Discussion

Skin lesions in tuberculoid leprosy becomes red and swollen often for no apparent reason. As a rule no systemic symptoms are associated. There is a good local tissue response where the lesion is small, minor and few in number. Marginal papules lead to fibrosis and repigmentation. Where the lesions become large and major, it indicates acute inflammation which may lead to abscess formation in the

case of nerves. Sudden inflammatory oedema in peripheral nerve can obstruct the sensory and motor pathways leading to irreversible paresis, paralysis and anaesthesia. Sometimes a change in immunological status when tuberculoid lesions change to borderline features, is associated with signs of acute inflammation. Tuberculoid mononeuritis is mostly localised to one or a few nerve trunks. Acute necrosis or pseudo-caecation with tissue autolysis can occur and softened material forms an abscess or is spontaneously extruded. Abscess contains sterile pus. Evacuation or its retention leads to patchy localised calcification and recovery is delayed unless interfered by decompression of nerve.

Though our series is small the results are encouraging. Pain was completely relieved and sensory improvement was observed as early as twelve weeks or as late as six months. The improvement was progressive and gradual the maximum benefit being seen at the end of one year. Improvement in motor function appeared late-as late as two years and a half, and was slow. Patients were followed from three months to two and half years as progressive motor recovery required a prolonged follow up. Maximum sensory and motor recovery was obtained in early cases. Sensory recovery was seen better in the young age group. Mitchel (1872) was the first man who demonstrated the importance of blood supply to the nerves. Disturbances of blood supply leads to pathological changes in nerves. Complete loss of blood supply leads to complete paralysis with Wallerian degeneration while

incomplete loss of blood supply leads to reversible paralysis without Wallerian degeneration⁴. Following ischaemia there is fibrosis which causes again constricting effect on nerves. External pressure by nerve abscess and intraneural oedema causes constricting effect over nerves. Hence evacuation of the abscess should be followed by extraneural neurotomy with intraneural decompression. One patient needed anterior transposition of nerve later on and one patient required muscle sliding operation. Few surgeons reported extraneural decompression to prevent deformities in leprosy as a prophylactic measure (Pandya 1978)⁵.

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