Case Reports

ISOLATED RADIAL NERVE INVOLVEMENT IN LEPROSY

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Introduction

Isolated involvement of the radial nerve in leprosy is a rare occurrence [1]. The most commonly affected nerve in the upper limb is the ulnar nerve followed by the median nerve; radial nerve involvement usually occurs with involvement of the above nerves. We present one case of isolated radial nerve involvement that was rehabilitated successfully at our centre.

Case Report

A 24 year old serving soldier hailing from Karnataka reported to the Dermatology department of a service hospital with weakness of extension of the right wrist, fingers and thumb. He was found to have thickening and tenderness of the right radial nerve in the upper arm and anaesthesia over the dorsum of the right thumb and index finger. The patient offered no history of trauma

Fig. 1 : Pre operative photograph showing defective pulp pinch between thumb and index finger

or pressure to the right arm or axilla. On clinical examination no skin lesions were detected. No other nerves were found to be thickened. Skin slit and nasal smear examination were negative for lepra bacilli. FNAC was done from the affected nerve which showed no lepra bacilli or inflammatory cells. Based on the clinical findings the patient was diagnosed as a case of leprosy-neuritic and put on multi-drug therapy for leprosy together with corticosteroids. Over a period of time the patient recovered wrist and finger extension and sensation in the affected area but thumb extension remained weak. At this stage upon completion of multi-drug therapy the patient was referred for reconstructive surgery. Clinical examination at the time of referral revealed grade 3 power in the Abductor Pollicis Longus and grade 0 power in the Extensor Pollicis Brevis. The metacarpophalangeal joint of the thumb was in flexion and there was secondary deformity of hyperextension of the interphalangeal joint of the thumb (Fig 1). The patient, an artist by hobby, was unable to form a stable pulp to pulp pinch on his pencil. The patient was taken up for tendon transfer. The tendon of the Palmaris Longus was transferred to the tendon of the Extensor Pollicis Brevis. The patient had an uneventful recovery; he now has a stable pulp to pulp pinch between his index finger and his thumb (Fig-2).

Discussion

Involvement of the radial nerve in leprosy is uncommon and isolated involvement is rare [1]. The clinicopathological features of neuritic leprosy are well documented [2,3,4]. Purely neuritic leprosy has been described as being commoner in older males and affecting the ulnar nerve and the common peroneal nerve most commonly in the upper and lower limbs respectively. In a study of 2664 cases with nerve involvement, 4.2% of cases were found to be purely neuritic and the incidence of radial nerve damage was 0.09% [5]. Antia et al [6] have found definite evidence of involvement of the radial nerve on light microscopy and ultrastructural studies in cases of neuritic leprosy. On the basis of these findings they suggest that the sensory branch of the radial nerve to the dor-

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Fig. 2 : Post operative photograph showing corrected pulp pinch between thumb and index finger

sum of the index finger may provide good biopsy material to clinch the diagnosis in cases of purely neuritic leprosy. Thevenuet et al [7] have shown FNAC from the thickened nerve to be simple, safe and diagnostic in a high proportion of cases. FNAC was not productive in this case. In this patient paralysis of the Extensor Pollicis Brevis had resulted in weakness of extension at the metacarpophalangeal joint. This had caused the base of the thumb to be unstable during pulp to pulp pinch between the index finger and the thumb. The problem was further aggravated by the secondary deformity of hyperextension at the interphalangeal joint. This was due to decreased tension in the Flexor Pollicis Longus consequent to flexion deformity at the metacarpophalangeal joint. Thus, with deficient thumb function in the dominant hand, the patient was significantly disabled. The Palmaris Longus was chosen for transfer in this patient, as it was available and offered the least donor site morbidity. The other available tendons for transfer were the Flexor Carpi Radialis, The Flexor Digitorum Sublimis to the ring finger, the Extensor Indicis Proprius and the Extensor Carpi Radialis Longus. The first two would have involved higher donor site morbidity while the latter two were not viewed favourably as they had been paralysed earlier. The patient underwent successful surgery with gratifying rehabilitation of the

Fig. 3 : Post operative photograph showing the successfully rehabilitated hand

dominant hand. The patient has resumed his artistic pursuits (Fig-3). The case is being reported as isolated radial nerve involvement in leprosy is very rare.

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