Case report: Ulnar Nerve Leprosy Abscess-Palsy (UNLAP) diagnosis and treatment

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Abstract

Pure Ulnar Nerve Leprosy Abscess-Palsy (UNLAP) is uncommon infectious disorder caused by Mycobacterium leprae. This study demonstrates a case report of isolated tuberculoid leporsy neuritis of right ulnar nerve presented by sudden onset non-inflammatory tender oval swelling over elbow joint and complicated by acute motor and sensory deficit, posing a diagnostic management confusion. High resolution ultrasonography and magnetic resonance imaging (contrast and non-contrast) were performed. Swelling was explored and excised after abscess evacuation with complete external neurolysis of ulnar nerve in the cubital tunnel. Specimen was taken for histopathological investigation which revealed positive special staining for leprosy. A typical presentation of leporsy must be taken into consideration to detect the proper line of treatment.

Keywords: Leprosy, ulnar nerve abscess, tuberculoid, hyperintense
INTRODUCTION

Leprosy (Hansan’s disease) is a non-fatal, slowly progressive chronic granulomatous infection which was first described by ancient Indians from sixth century B.C.1. [1] There is preferential involvement of the skin, peripheral nervous system, eyes, upper respiratory tract and testes because of their lower temperature than the core body temperature. [2] The neurophilic property of Mycobacterium leprae and immunity response reactions result in much debilitation and disfiguration and consequent psychosocial affection.

According to immunity state of exposed human, leprosy may extend from polar tuberculoid to polar lepromatous leprosy [3]. Patients with Borderline Tuberculoid (BT) form may be at high risk of nerve abscess, most commonly the ulnar nerve [4]. This article illustrates a case report of pure isolated ulnar nerve tuberculoid leprosy abscess complicated by acute motor and sensory deficit, preoperative investigations done for possible diagnosis and the line of treatment performed.

CASE REPORT

A 25-year-old male presented with sudden onset throbbing pain and tingling/numbness sensation along the inner aspect of his right lower arm, medial aspect of right forearm, the hypothenar eminence of his hand and medial half of ring finger/whole little finger for twenty one day’s duration. There was no history of fever. Superficial thick cord-like swelling was palpated behind medial epicondyle and supracondylar ridge.

Physical examination revealed tender thickened right ulnar nerve for approximately 9.0 cm proximal and 6 cm distal to the medial epicondyle of the humerus respectively. Multiple soft nodules were palpable along the course of the nerve. Complete clawing was noticed with inability to extend the interphalangeal joints of the middle and ring finger. No wasting of thenar, hypothenar and 1st dorsal interossi muscle. Sensation was diminished for along medial aspect of right forearm, hypothenar eminence and medial half of ring finger/whole little finger. There were no local trophic changes. The rest of the physical examination including the eyes, testes and nose did not reveal any abnormality.

Skins smear is negative for acid fast bacilli. High resolution ultrasonography revealed nodular thickening of the right ulnar nerve proximal and distal to the medial epicondyle for a length of approximately 9.0 cm and 6 cm respectively. The maximum diameter of the nerve was 14.5 mm. Swollen heterogeneous hypoechoic nerve fascicles with echogenic perineurium and epineurium was revealed. Multiple focal outpouchings lesions were also noted arising from the nerve (Fig. 1).

MRI (Non-contrast and contrast-enhanced) finding revealed nodular thickened right ulnar nerve for an approximate length of 9.0 cm proximal and 6.0 cm distal to the medial epicondyle. The maximum thickness of the nerve was 14.5 mm. Swollen nerve fascicles appeared mildly hyperintense signal to muscle on T1-weighted images and markedly hyperintense on Fat-Saturated Proton Density (FSPD) and T2 -weigh.

Thickened hypointense perineurium and epineurium appeared on all sequences with its multiple disruptions by small contiguous variable sized outpouchings. A ‘horse-shoe’ shaped noted between the nerve and the triceps muscle and epineural collection (mildly hyperintense to muscle on T1-weighted images and strongly hyperintense on FSPD and T2-weighted images) are characteristic of abscess collection around nerve sheath. Post-contrast images revealed multiple focal outpouching enhancements of the nerve and neural sheath (Fig. 2).

Based on physical examination and preoperative imaging studies, a provisional diagnosis of isolated ulnar neuritis with abscesses was considered.

The patient was operated for ulnar nerve decompression and abscess evacuation using standard posterior approach of elbow joint in lateral decubitus position; identification of ulnar nerve course in the cubital tunnel; yellow pus evacuation and collection for culture and sensitivity; external ulnar nerve neurolysis along its course extending proximally above medial epicondyle from ulnar nerve piercing medial intermuscular septum at ligament of struthes to distally below medial epicondyle at entrance of ulnar nerve between 2 heads of flexor carpi ulnaris; specimens from nerve, its sheath and outpouching lesions were collected for histopathological analysis to confirm diagnosis and detection of causative microorganisms (Fig. 3).
Postoperatively, the patient was assumed to have recovered by early restoration of hand functions, recovery of hand claving and preservation of sensation along dermatological distribution of ulnar nerve. Histopathological specimens revealed extensive casation material with Langerhans-epithelioid cell granuloma along nerve’s course and modified Ziehl-Nelsen staining revealed acid fast bacilli suggestive of Mycobacterium leprae. After confirmation of tuberculoid ulnar nerve leprosy lesion, the patient was put on a course of anti-inflammatory drugs, steroids and Anti-Leprosy Therapy (ALT) (Dabasone) besides neurotomic therapy to enhance nerve recovery. On follow-up after one and half month, the patient was completely relieved with significant reduction in the ulnar nerve thickening without any sensorimotor deficit.

DISCUSSION

Leprosy neuritis without dermatological involvement is characterized by nerve enlargement, nerve pain, somatosensory dysfunction and muscle wasting and this poses a difficulty in diagnosis especially in absence of nerve biopsy [5]. Japling 1965 was the 1st who reported pure leprotic neuritis with negative skin leprotic mainfestation and described cold abscess of peripheral nerve [6]. The incidence of leprosy nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7]. Ulnar nerve is the commonest nerve abscesses has been increasing. Young children and teenagers account for the majority of cases [7].

In conclusion, awareness of a typical mainfestation of leprosy like leporic neuropathy must be taken into account and without complacency. Surgical debridement, specimen collection and nerve decompression is manadatory in this case to detect causative organism; also to avoid more motor:sensory deterioration and complications if left untreated like rupture and sinus formation resulting in 2ry bacterial infection and chronicity [14].

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