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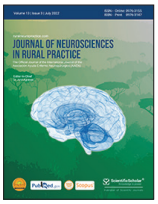

Case Report

Lateral antebrachial cutaneous nerve injury in a solo guitarist

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ABSTRACT

Lateral antebrachial cutaneous nerve (LACN) injury alone is a rare condition. Conditions such as trauma or repetitive forearm arm movements may play a role in its etiology. LACN injury may occur as a result of forceful upper extremity movements and entrapment of the LACN in the muscle tendon. In this case, a 33-year-old male solo guitarist with an LACN injury was presented. The patient stated that he often plays the guitar and is also interested in fitness. There was a sensory abnormality in the lateral right forearm without muscle weakness or pain. The compound nerve action potential of the right LACN could not be obtained. Magnetic resonance imaging and ultrasonography of the elbow and forearm revealed no abnormalities. LACN injury in this patient may be associated with forceful movements of the right forearm, including pronation, during guitar playing, and/or during fitness.

Keywords: Electrodiagnosis, Forearm injuries, Lateral antebrachial cutaneous nerve, Neuropathy, Occupational injuries

INTRODUCTION

The lateral antebrachial cutaneous nerve (LACN) is a branch of the musculocutaneous nerve and provides sensory innervation to the lateral region of the forearm.[1,2] The diagnosis of LACN injury relies on clinical findings and electrodiagnostic tests. While abnormalities in the sensory nerve conduction study of the LACN support the diagnosis, needle electromyography is crucial for the differential diagnosis.[1-3] LACN injury alone is a very rare condition, and patients with LACN injury present with sensory abnormalities in the lateral forearm. There are case series reporting that LACN injury can often be the result of trauma.[1-4] LACN injury may also be associated with repetitive upper extremity movements.[1] Although the pathophysiology of LACN injury due to forceful extremity movements or entrapment remains unclear, compression of the nerve within the biceps brachii tendon may be a potential cause.[1-3] This case presented a solo guitarist with LACN.

CASE REPORT

A 33-year-old male patient, a solo guitarist, presented with a complaint of tingling without pain in his right forearm for 65 days. Although the patient is not completely sure, he noticed these complaints when he woke up one morning. He also stated that he had not consumed alcohol or any similar substance before this morning and that he had not slept for a long time. There was no history of illness in his past or family history, and he stated that he played the guitar for hours, at least 3–4 h a day. In addition, he was interested in fitness and could sometimes lift heavy weights, which would challenge him. Neurological examination revealed hypoesthesia in the lateral region of the right forearm [Figure 1a], without muscle weakness. Serum biochemical and serological tests for vasculitis were normal. There was no abnormality in the motor nerve conduction study of the median and ulnar nerves and in the latency and amplitude of the potential recorded from the biceps brachii muscle with ERB stimulation. Compound nerve action potentials (CNAPs) of the median nerve across the first finger-wrist and second finger-wrist segments were normal. No CNAP abnormalities were found in the superficial radial nerve, medial antebrachial cutaneous nerve, or ulnar nerve across the fifth finger-wrist segment. While the right CNAP of LACN could not be obtained, the left CNAP of LACN was normal [Figure 1b]. There was no abnormality in needle electromyography in the right abductor pollicis brevis, first dorsal interosseous, triceps, biceps brachii, and deltoid muscles. Magnetic resonance imaging (MRI) of the cervical spine and right brachial plexus revealed normal results. There were no abnormalities found in the ultrasonography or MRI of the right forearm and elbow. The patient was advised to

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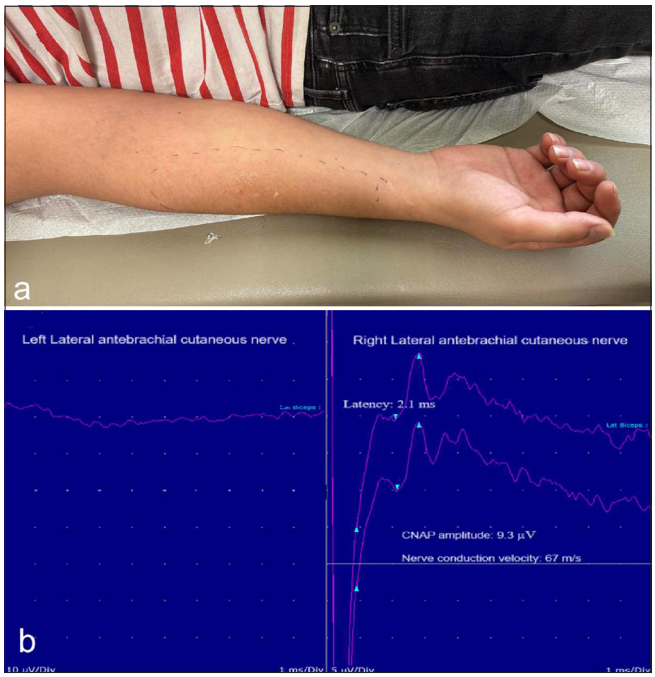

Figure 1: Location of the sensory abnormality and lateral antebrachial cutaneous nerve conduction study of the patient compound nerve action potential (CNAP). (a) The area exhibiting hypoesthesia on neurological examination, with tingling described by the patient. (b) Lateral antebrachial cutaneous nerve conduction study.

refrain from playing the guitar and avoid activities involving excessive strain on the extremities. A follow-up evaluation was conducted two months later, and neurophysiological tests were repeated. During the neurological examination, the patient reported persistent hypoesthesia but a reduction in sensory complaints. No changes were observed in the neurophysiological findings.

DISCUSSION

LACN injury is a rare mononeuropathy and its diagnosis is made by clinical features, neurological examination, and neurophysiological tests.[1] In this current case, a solo guitarist patient with LACN injury diagnosed based on both clinical and neurophysiological findings is presented. Many conditions related to its etiology have been reported. Some case reports of LACN injury are shown in Table 1. Although often associated with trauma or surgery, repetitive use of the forearm can also cause LACN injury.[1-4] It has been previously reported that particularly forceful forearm pronation or repetitive movements of the forearm may be associated with LACN injury.[1,2] In this current case, while the right-handed patient was playing the musical notes on the guitar with his left hand, he was holding the pick with his right hand and making forceful, repetitive wrist and forearm movements, including pronation. It is possible that repetitive and forceful forearm movements performed over a long period of time may lead to LACN injury. Lifting heavy loads during fitness may also be a cause of LACN injury in this current case report.[1] Another possible reason may be that the LACN is under pressure during sleep,[5] but it should be noted that the patient stated that he did not sleep for a long time or did not use a substance such as alcohol before sleep. In addition, if LACN injury was due to LACN entrapment during sleep, we think that the complaints should disappear in a short time.[6]

Table 1: Etiology of some reported lateral antebrachial cutaneous nerve injuries.

Case Reports	Number of Patients	Etiology
Memon *et al.*	15	Post-surgical (six patients) Intravenous interventional procedure (three patients) Repetitive forearm use (two patients) Trauma (two patients) Dog bite (one patient) Unknown one patient
Davidson *et al.*	15	Elbow extension and forearm pronation (14 patients) Carrying heavy things (one patient)
Patel and Vishnubhakat	3	Carrying heavy tray (three waitress)
Behl *et al.*	2	Cutting wood (one patient) Lifting a heavy load (one patient)
Judge and Fecho	1	Surgical positioning

There was no pain in this current case. Although pain was reported in some cases, it was reported that painless LACN could occur only in some cases.[1] Therefore, it should be kept in mind that LACN may not cause pain in every patient, and patients may present only with paresthesia.

CONCLUSION

This current case report may indicate that LACN may be due to forceful forearm movements performed during guitar playing and/or lifting heavy weights during fitness. Individuals with professions, such as guitarists, can prevent LACN injuries by avoiding forceful forearm movements. In addition, LACN injury can be painless.

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REFERENCES

1. Memon AB, Mahmood S, Waseem F, Sherburn F, Nardone A, Ahmad BK. Lateral antebrachial cutaneous neuropathy: A review of 15 cases. Cureus 2022;14:e25203.
2. Davidson JJ, Bassett FH 3rd, Nunley JA 2nd. Musculocutaneous nerve entrapment revisited. J Shoulder Elbow Surg 1998;7:250-5.
3. Patel C, Vishnubhakat S. Compression of lateral antebrachial cutaneous nerve in waitresses. J Clin Neuromuscul Dis 2015;16:121-4.
4. Behl AR, Rettig A, Rettig L. Lateral antebrachial cutaneous nerve compression after traumatic rupture of the long head of the biceps: A case series. J Shoulder Elbow Surg 2014;23:919-23.
5. Judge A, Fecho K. Lateral antebrachial cutaneous neuropathy as a result of positioning while under general anesthesia. Anesth Analg 2010;110:122-4.
6. Lundborg G, Dahlin LB. Anatomy, function, and pathophysiology of peripheral nerves and nerve compression. Hand Clin 1996;12:185-93.

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