Case Report

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Superficial Peroneal Nerve Injury by Acupuncture

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ABSTRACT

With an increase in the application of acupuncture, more complications will be encountered; physicians must be familiar with these complications. We report a case of neuroma formation in the superficial peroneal nerve territory after acupuncture. A 44-year-old woman, after acupuncture for low back pain felt numbness and pain on the lateral side of the dorsum of her left foot. Electrodiagnostically, the patient's symptom was related to superficial peroneal nerve injury. An acupuncturist must be aware of possible complications of needling specially near nerves. Manipulation of the needle may increase risk of nerve injury.

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Introduction

Acupuncture has been used therapeutically in China for thousands of years. In Iran, during the pre-Islamic period, one kind of used medicine was application of needles, which has been attributed to acupuncture (1). Now, acupuncture practice is growing rapidly in Iran and has been added to curriculum of some post-graduate medical educations, like physical medicine and rehabilitation (2).

With an increase in application of acupuncture, more complications will be encountered, which necessitates familiarity of physicians with this treatment. Here, we report a case of superficial peroneal nerve (SPN) injury secondary to acupuncture.

Case Report

A 44-year-old woman with paresthesia in her left foot was referred to our pain clinic. She has had low back and gluteal pain which distributed to her left lower extremity. After treatment for low back pain with acupuncture, she felt numbness on the lateral side of the dorsum of her left foot close to the needle point. She was referred to evaluate the numbness in lateral side of left foot with the presumption of increased

severity of radiculopathy.

Clinical examination revealed decreased sensation in the lateral side of her left ankle and foot area, allodynia over the lateral foot area, as well as a palpable tiny tender nodule one inch above the ankle crease. In addition to positive Tinel's sign over the nodule, there was no muscle weakness. Nerve conduction study revealed axonal injury of the left side SPN consistent with clinical diagnosis [right SPN: latency = 3.2 ms, amplitude = 19 μv; Left SPN: Latency = 3.3 ms, Amplitude = 4.0 μv].

The patient was informed about the problem and was assured about the recovery of the problem; the patient was educated about desensitization techniques. In the 1.5-month follow-up, the symptoms persisted, but six months later, patient's symptoms had decreased significantly.

Discussion

The SPN is a branch of the common peroneal nerve. It descends as a pure sensory nerve, just after innervating the peroneus longus and bervis muscles. The nerve splits into medial and lateral terminal sensory branches and innervates the dorsum of the foot except for the region between the first and the second toes (3).

SPN and its branches are the only nerves in the human body that can be visualized at clinical examination (4). Common peroneal nerve injury and medial plantar nerve injury as a consequence of acupuncture has been reported previously (5-7); other reported peripheral nerve injuries are facial, vagus, phrenic, optic, oculomotorius, trigeminal, and sciatic nerve injury (8). However, we have not found any report of SPN injury by acupuncture. Sensory symptoms are usually the presenting symptoms of SPN nerve compromise (9); they are usually minor annoyances (10). Pain may be the prominent symptom, as reported previously (11, 12).

In this patient, electrodiagnostic tests were performed to exclude root lesion and peroneral injury. Sensory amplitude usually does not decrease in radiculopathy as the lesion is preganglionic. Only far lateral disc herniations may cause decrement of sensory evoked response amplitude (13). In this patient, injury to medial and intermediate branches of the SPN, as described previously (3), was not determined electrophysiologically. Although, this is not performed routinely, it could better clarify the injury.

The point St41 (Jiexi), mostly used for the lower extremity, ankle, and knee pain located on the dorsum of the foot at the midpoint of the transverse cease of the ankle joint, in the depression between the tendons of the extensor digitorum longus and hallucis longus muscles at the same level with tip of the external malleolus. It is important to know that the anterior tibial artery and vein and superficial peroneal nerve pass in the vicinity of this point. Shooting pain or electric shock like pain during needle insertion should make the practitioner aware of possible nerve injury, and more traumas to the nerve must be avoided by movement of the needle. Evaluation of needle after removal according to the possibility of fracture is also important. Needles must be counted after each session to ensure no needle has been forgotten.

Acupuncturists must be aware of the possible complications of needling in areas that nerves passing by. Complete understanding of surface anatomy, especially for points of nerve variation as well as vital or critical anatomical structures are mandatory. Smaller nerves may be more susceptible to injury; moreover, neuroma formation may cause severe pain in the injury site.

Conflict of Interests

Authors have no conflict of interests.

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