Resolution of Idiopathic Dropfoot Following Multiple Nerve Decompression: A Case Report

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Statement of Purpose
Dysfunction of nerves and associated negative effects can have a dramatic impact on patient function and quality of life. The purpose of this article is to describe the case of a 55-year-old female patient who underwent decompression procedures for multiple nerves in the lower extremity to treat sudden onset of idiopathic dropfoot.

Introduction
Entrapment or compression of nerves as they course through the body can be attributed to a variety of events, including systemic inflammatory states, adhesions, elastics, or external pressure (1, 2, 3). Short-term compression with concurrent blood flow restrictions, secondary to limb positioning or external bracing, cause the quickly reversible compression neuropathy, parasthesias that are commonly described when one’s limb “falls asleep.” Of more clinical significance is chronic ongoing compression neuropathy, which involves longer-lasting sequelae and can generally be classified as a progression in three stages. Stage one consists of sporadic sensory changes which involves longer-lasting sequelae and can generally be classified as a progression in three stages. Stage one consists of sporadic sensory changes which involves longer-lasting sequelae and can generally be classified as a progression in three stages. Stage two develops after a longer period of compression, and manifests with more consistent parasthesias than seen in stage one. During stage three, the morphology of the nerves begins to change with noticeable degeneration (5).

Pathology of the common peroneal nerve (CPN) is a relatively common condition due to the anatomic location of the structure (4, 5). The nerve has two branches: the superficial peroneal nerve and the deep peroneal nerve. The superficial peroneal nerve innervates the muscles over the fibular neck and courses distally where it divides into the superficial and deep branches (6). The deep peroneal nerve innervates the muscles of the extensor compartment of the leg (7).

Case Presentation
A 53-year-old female patient presented to our office with main complaint of drop-foot and tripping over her right foot as well as numbness and tingling for six months. The patient denied any history of trauma to the right lower extremity or external injury.

Physical Examination
- Positive Tinel’s sign over the fibular head
- Positive compression neuropathy test
- Bilateral weakness

Diagnosis
The patient underwent MRI and electromyography (EMG) testing.

Technique
- A 4.5 cm incision was made over the fibular neck and it was deepened through the subcutaneous tissue until the deep fascia was identified. The common peroneal nerve was identified beneath the deep fascia which was released and followed posteriorly. The deep fascia of the peroneal nerve was identified and released. The area was then flushed and incision closed with 5-0 Vicryl.

Results
Postoperatively, the patient was advised immediate weight bearing in a CAM boot. Over the next six months, she was referred to physical therapy. The patient progressed to a full weight bearing status at six months post-surgical multiple nerve release.

Discussion
The most common area of CPN compression is around the fibular neck within the fibro-osseous tunnel. It is also thought that the nerve becomes chronically irritated as it glides within the tunnel during flexion and extension of the knee (6, 7, 8). Patients may present with sensory, motor or sensory-motor deficits (6, 9, 10). They may have partial or complete loss of sensation in the anterior and lateral aspects of the leg, including the first web space. The patient may be unable to perform voluntary ankle dorsiflexion, evert the lateral foot, and may experience difficulty standing on the involved foot.

Conclusion
The patient presented with a rare case of idiopathic dropfoot following multiple nerve decompression procedures. This case highlights the importance of early intervention and prompt surgical consultation for the treatment of idiopathic dropfoot.

References
1. Flanigan RM, DiGiovanni BF. Peripheral nerve entrapments of the lower leg, ankle and foot. Foot Ankle Clin NA. 16(2);255-274:2011.
12. Vastamaki (2007) and Humphreys et al (2009) had notable results with improvement in motor response following decompression. Gupta et al. reported that idiopathic dropfoot with sensory-motor deficits can be treated with surgical decompression. In a study by Gupta et al., 20 patients with drop foot and sensory-motor deficits were treated with surgical decompression, and 19 patients showed improvement in motor function (13).