



Bilateral Drop-Foot Due to Diabetes Mellitus Disease

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Abstract

Diabetes mellitus (DM) is a disease in which broad spectrum neuropathies including x asymptomatic distal sensory neuropathies as well as severe radiculopexopathies are observed [1]. Diabetic neuropathy; symmetrical distal polyneuropathies, focal and multifocal neuropathies, inflammatory demyelinating neuropathies may occur in various forms [2]. Herein, we aimed to present a case of clinical and electroneuromyographic (ENMG) study showing the musculoskeletal involvement of diabetes in a patient with drop-foot.

Subject Areas

Diabetes & Endocrinology, Neurology

Keywords

Diabetes Mellitus, Drop-Foot, Neuropathy

1. Case

A 57-year-old female patient with low back and leg pain, numbness in her legs, magnetic resonance (MR) findings, and a diagnosis of lumbar stenosis on L5-S1 level was admitted to our clinic with the complaint of gait. The patient, who was diagnosed with type 2 diabetes 14 years ago and used oral antidiabetic drugs, stated that she had weakness in her right foot 1 year later in his left foot 13 years ago. She had a history of foraminotomy at all levels. She had no neurogenic bladder symptoms. There was no pain in the legs. On physical examination, upper extremity examination was normal. Both lower extremities had drop-foot. Muscle strength of hip and knee in the lower extremity was 5/5, bilateral ankle dorsiflexion and plantar flexion muscle strength was 1/5. Straight leg lifting test, patellar and Achilles deep tendon reflexes and Babinski reflexes were bilateral negative. Laboratory parameters including B12, thyroid function tests were normal

except for fasting glucose (196 mg/dl) and Hba1c (7.9%). Electroneuromyography (ENMG) ENMG was requested for the differential diagnosis of drop-foot. The ENMG report was reported as bilateral fibular nerve axonal degeneration. Patient was consulted to neurology. Protein electrophoresis, C3, C4, ASO, CRP, RF, ANA were requested for differential diagnosis of chronic axonal inflammatory polyneuropathy.

The patient underwent a treatment program including bilateral lower extremity range of motion, strengthening and tibialis anterior functional electrical stimulation. In order to contribute to the patient's walking, bilateral joint-free ankle-orthosis and canedians were administered and she was discharged with a recommendation of a control about 3 months later.

2. Discussion

The spectrum of DM neuropathies is broad and information continues to evolve [3]. Nerve damage to metabolic damage, compression injury, ischemic damage and altered immunity can occur, and these different pathologies can occur in many different ways [4]. In literature, diabetic bilateral drop-foot involvement was reported in only one case and from a very old source [5]. In our case, the etiologic cause of drop-foot was; when history, blood values and ENMG were evaluated together, it was concluded that DM was secondary to bilateral axial degeneration of the peroneal nerve. Considering that the metabolic syndrome is increasing in the community, it is clear that the role of diabetes in the etiology of musculoskeletal involvement is clear. In this context, drop-foot often develops due to different etiology, but its relevance to diabetes should not be ignored. Lack of knowledge about this subject in the literature may be a cause of insufficient investigation of diabetes among drop-foot causes. Another reason may be that lumbar pathologies are often responsible for the drop-foot etiology, considering the previous lumbar stenosis operation. In conclusion, diabetes is a rare cause of drop-foot etiology and should be considered in the differential diagnosis. Our case has attracted attention to further studies on this subject.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Ertekin, C. (2006) Diabetic Neuropathies, Central and Peripheral EMG-Fizyoloji-Klinik Anatomy, Turkey, 211-228.
- [2] Thomas, P.K. (2003) Classification of the Diabetic Neuropathies. In: Gries, F.A., Cameron, N.A., Low, P. and Ziegler, D., Eds., *Textbook of Diabetic Neuropathy*. Stuttgart, Thieme, Stuttgart, 175-177.
- [3] Said, G. (2007) Diabetic Neuropathy—A Review. *Nature Clinical Practice Neurology*, **3**, 331-340. <https://doi.org/10.1038/ncpneuro0504>

- [4] Levene, S. and Richard, D. (2011) Management of Type 2 Diabetes Mellitus: Practical Guide. Elsevier Health Sciences, London.
- [5] Shahani, B. and Spalding, J.M.K. (1969) Diabates Mellitus Presenting with Bilatera Foot-Drop. *The Lancet*, **294**, 930-931.
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