Polyneuropathy and Myopathy in Anorexia Nervosa

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Anorexia nervosa has a huge impact on physical health.[1,2] Complications in the neurologic system are underrecognized, with a few cases described, such as that of peripheral neuropathies and syncope.[3–5] Here, we describe a case of neuropathy and myopathy in a patient with anorexia nervosa. A bibliographic search in PubMed was conducted, including the keywords *anorexia nervosa*, *neuropathy*, *myopathy*, and *neurologic symptoms*.

Case Report

A 44-year-old woman, with no previous follow-up in psychiatry, described the onset of symptoms at the age of 23 years when she felt the need to lose weight (weight: 50 kg [110 lb], body mass index [BMI]: 19 kg/m^2). She started a progressive restrictive diet and exercise, reaching 39 kg (86 lb). Over the years, her weight oscillated between 35 and 40 kg (77–88 lb). Before hospitalization, she increased food restriction and reached 30 kg (66 lb) (BMI: 11.9 kg/m^2).

She was hospitalized for approximately 3 weeks in the internal medicine service due to paraparesis and paresthesia of the lower limbs with 1 month of progressive installation, which seriously impaired her gait to the point that she eventually was unable to walk. Muscle strength was decreased in the lower limbs (level 3 to 4) and normal, symmetrical in the upper limbs. A decrease in osteotendinous reflexes in the lower limbs was also observed, with no other neurologic symptoms. After proper investigation, it was concluded that the origin was the nutritional deficit, with other causes having been excluded.

Analytic evaluation revealed a normocytic, normochromic anemia (hemoglobin: 10.9 g/dL). Dorsal computed tomography and bone marrow magnetic resonance imaging (MRI) showed no alterations. Craniocerebral MRI revealed a slight diffuse brain atrophy, with accentuation of cerebral and cerebellar cortical sulci, with no preferential location. Electromyography (EMG) showed changes compatible with the diagnosis of myopathy and sensory polyneuropathy with greater involvement of the lower limbs. She was discharged against medical advice to follow up at psychiatry, nutrition, and psychology outpatient appointments.

Approximately a month later, she returned to the hospital with no improvement in her symptoms. The case was discussed with the hospital's eating disorders unit, and the patient was transferred 8 days later for admission to the unit (BMI: 12.14 kg/m^2). She was started on a physiotherapy program as well as an adjusted diet, with vitamin supplementation and prescription of psychoactive drugs (olanzapine 10 mg/d, zolpidem 10 mg/d, trazodone 150 mg/d, clomipramine 150 mg/d, and pregabalin 50 mg/d). As the treatment progressed, the patient was able to start walking. However, she continued to have paresthesia. She was discharged after 90 days, weighing 48 kg (106 lb) (BMI: 18.9 kg/m^2).

Discussion

This case represents a severe and atypical form of anorexia nervosa. It is important to highlight the importance of early diagnosis and treatment to prevent neurologic complications.[3]

Patchell et al[3] found that neurologic complications are common (present in 47% of patients), with the neuromuscular system being the most affected. Muscle weakness is the most common symptom, particularly in advanced stages. This weakness, usually in the proximal muscles, is attributed to muscle myopathy related to muscle fiber atrophy type 2.[2,6–9] Other reported changes include abnormal accumulation of glycogen in muscle fibers, decreased lactate response to exercise, and decreased serum carnosinase activity.[6] Treatment with nutritional replacement usually allows for recovery.[10] On the other hand, the prevalence of peripheral neuropathy varies and was found to be present in 11% to 65% of patients with anorexia nervosa.[11] Some patients reported paresthesia. However, only a few had alterations in nerve conduction velocities in the EMG.[11]

In conclusion, this case illustrates the need for early diagnosis of anorexia nervosa, with the aim of preventing serious and potentially irreversible medical complications.

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Prim Care Companion CNS Disord 2022;24(6):21cr03169

To cite: Reis E, Santos J, Neves A. Polyneuropathy and myopathy in anorexia nervosa. *Prim Care Companion CNS Disord.* 2022;24(6):21cr03169.

To share: https://doi.org/10.4088/PCC.21cr03169

Published online: November 3, 2022.

Relevant financial relationships: None.

Funding/support: None.

Patient consent: Consent was received from the patient to publish the report, and information has been de-identified to protect anonymity.

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