

Rare Variant of Lumbosacral Radiculoneuropathy with Foot Drop in a Diabetic Patient

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Abstract

Diabetic lumbosacral radiculoplexus neuropathy, also known as Bruns-Garland syndrome or diabetic amyotrophy, is a rare diabetic neuropathy variant characterized by asymmetric proximal weakness, pain, and muscle wasting. It typically affects elderly diabetic males with moderate glycemic control. The exact pathophysiology involves microvasculitis and ischemic injury to the lumbosacral plexus. Bilateral involvement, as seen in this patient, is uncommon and poses diagnostic challenges. The absence of upper motor neuron signs, preserved bowel and bladder function, and characteristic gait changes help differentiate it from myelopathy or motor neuron disease. In this particular case, the presence of genu varum deformity is a rare musculoskeletal manifestation associated with chronic diabetic amyotrophy. Although diabetic amyotrophy predominantly involves neuropathic changes, secondary biomechanical alterations, prolonged muscle weakness, and denervation may contribute to postural deformities such as genu varum. There have been isolated reports describing similar lower limb deformities in advanced stages of diabetic neuropathy, likely due to asymmetric muscle wasting and imbalance around the knee joint. Recognition of such rare sequelae is essential for targeted physiotherapy and orthotic management to prevent further disability.

Key words: Diabetic amyotrophy, DLRPN, Foot drop, Genu varum

INTRODUCTION

Diabetic lumbosacral radiculoplexus neuropathy (DLRPN) is an uncommon but significant complication of diabetes mellitus, typically presenting as asymmetric proximal lower limb weakness with pain and muscle wasting. Although it primarily affects type 2 diabetics, it can occur in those with relatively good glycemic control. The condition often mimics other causes of neuropathy, such as chronic inflammatory demyelinating polyneuropathy or compressive radiculopathy. We report a rare presentation of bilateral involvement with high-stepping gait and foot drop in a 72-year-old male.^[1-7]

CASE PRESENTATION

A 72-year-old right-handed male from Hadapsar, with a history of type 2 diabetes mellitus and hypertension on regular medication, presented with gradually progressive leg pain and weakness over a period of 2 years. The pain began insidiously in the lower back, radiating to both thighs and legs, exacerbated by walking and relieved by rest and sleeping. There was no history of trauma, infection, vaccination, or toxin exposure before symptom onset.

The weakness began distally, progressing proximally over 6 months, leading to difficulty in walking and standing from a squatting position. In the past 2 months, he developed bilateral foot drop with a high-stepping gait. There were no bowel or bladder disturbances, cranial nerve involvement, or upper limb weakness. Sleep, appetite, and bowel habits were normal, and there was no addiction history.

On examination, the patient was alert, oriented, and afebrile. Vital parameters were stable (blood pressure 130/80 mmHg, pulse rate 90/min). Pallor was present, but

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there was no icterus, cyanosis, or lymphadenopathy. Local examination revealed a genu varum deformity.

Neurological examination showed normal higher mental functions (mini-mental state examination 29/30). Cranial nerves were intact. Upper limbs had normal tone and power (5/5). In the lower limbs, tone was reduced bilaterally with muscle wasting involving the thigh and leg compartments. Power was 4/5 in the hip and knee, and 0/5 in ankle dorsiflexion, with 4/5 in plantar flexion. Deep tendon reflexes were absent in both lower limbs and upper limbs (biceps, triceps, supinator). Plantar responses were flexor bilaterally. Sensory examination was normal. Gait was high-stepping, suggestive of bilateral foot drop.

Investigations

Routine blood investigations were within normal limits except for hemoglobin A1C of 7.1%. Nerve conduction studies and electromyography were consistent with a diagnosis of lumbosacral radiculoneuropathy. Magnetic resonance imaging of the lumbosacral spine revealed no compressive lesion.

Diagnosis

Based on clinical presentation and investigations, a diagnosis of diabetic lumbosacral radiculoneuropathy involving both motor and sensory fibers at the lumbosacral region, leading to genu varum deformity of knee joints, was made.

DISCUSSION

DLRPN, also known as Bruns-Garland syndrome or diabetic amyotrophy, is a rare diabetic neuropathy variant characterized by asymmetric proximal weakness, pain, and muscle wasting. It typically affects elderly diabetic males with moderate glycemic control. The exact pathophysiology involves microvasculitis and ischemic injury to the lumbosacral plexus. Bilateral involvement, as seen in this patient, is uncommon and poses diagnostic challenges. The absence of upper motor neuron signs, preserved bowel and bladder function, and characteristic gait changes help differentiate it from myelopathy or motor neuron disease.

Management is largely supportive, involving strict glycemic control, physiotherapy, and neuropathic pain management. Immunomodulatory therapy (e.g., corticosteroids, intravenous immunoglobulin) has shown benefits in selected cases. Prognosis is generally favorable, with gradual improvement over months.^[8-15]

CONCLUSION

This case underscores the importance of recognizing diabetic lumbosacral radiculoneuropathy as a cause of progressive lower limb weakness in elderly diabetics. Timely diagnosis and rehabilitation can significantly improve mobility and quality of life.

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