

Electrodiagnostics

Evaluation of a Patient with a Referring Diagnosis of Bilateral Carpal Tunnel Syndrome and Lumbosacral Radiculopathy with Electrodiagnostic Findings of Generalized Peripheral Polyneuropathy

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Planning the electrodiagnostic exam requires careful consideration of the referring diagnosis, as well as evaluation of possible differential diagnoses that could account for the patient's symptoms.¹⁻³ A thorough subjective exam and tailored clinical exam are critical to planning an electrodiagnostic exam that adequately assesses the referring diagnoses and possible differential diagnoses.¹⁻³ Throughout all exam components, the physical therapist must be alert for subjective and clinical exam findings that suggest alternative pathology and necessitate additional exam procedures.

This case details the subjective and objective clinical exams, electrodiagnostic testing, and interventions for a 73-year-old man referred for electrodiagnostic testing with diagnoses of bilateral median mononeuropathy at or distal to the wrist or carpal tunnel syndrome (CTS) and lumbosacral radiculopathy. Findings in the subjective and objective clinical exams suggested that the patient may have a polyneuropathic process affecting his distal extremities in addition to likely median mononeuropathy at or about the wrists and lumbosacral radiculopathy affecting the lower extremities. The physical therapist performed additional clinical exam procedures and planned an electrodiagnostic exam that would evaluate the patient for these potential differential diagnoses.

Electrodiagnostic testing, including nerve conduction studies (NCS) and needle electromyography (EMG), demonstrated a generalized, symmetrical, length dependent, sensorimotor, peripheral polyneuropathy in both upper extremities (BUE) and both lower extremities (BLE) with both significant axonal loss and demyelination. Chronic denervation was noted in BUE and BLE distal muscles tested.

A neurologist confirmed the generalized peripheral polyneuropathy (GPPN) in BUE and BLE and determined the etiology of this disease process as "idiopathic". The patient was started on intravenous immunoglobulin therapy (IVIG) on a monthly basis and given steroid injections in both wrists by an orthopaedic hand surgeon. Six months following the start of IVIG, the patient characterized this intervention as "successful" with decreased pain and sensory disturbance in both hands and feet.

1. BACKGROUND

Nervous system dysfunction is complex and requires critical reasoning that combines both diagnostic and prognostic assessment.¹⁻³ Planning the electrodiagnostic exam requires careful consideration of the referring clinical diagnosis, as well as evaluation of possible differential electrophysiological diagnoses that could account for the patient's

symptoms.¹⁻³ A thorough subjective exam and tailored clinical exam are critical to planning an electrodiagnostic exam that adequately assesses the referring diagnoses and possible differential diagnoses.¹⁻³ Throughout all exam components, the physical therapist must be alert for subjective and clinical exam findings that suggest alternative electrophysiologic pathology and necessitate additional exam procedures.