ELECTRODIAGNOSTIC UNMASKING OF CONCURRENT RADICULOPATHY AND MYELOPATHY IN AN ELDERLY PATIENT WITH FLUCTUATING MOTOR DEFICITS

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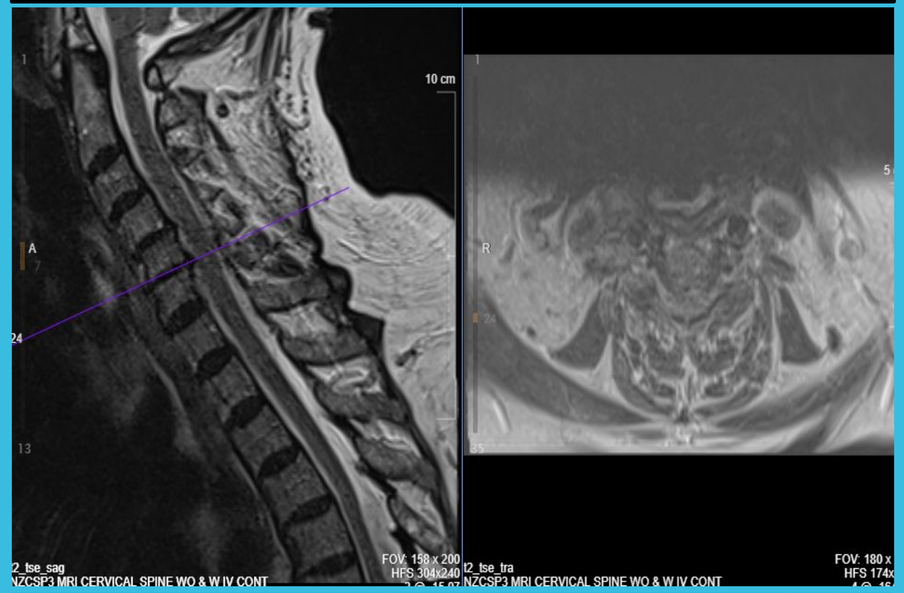
Introduction

Cervical spondylotic myelopathy (CSM) is the most common cause of spinal cord dysfunction in adults over 55. Diagnostic complexity increases when radiculopathy coexists with myelopathy at the same stenotic level, producing overlapping upper and lower motor neuron findings. This case illustrates how electrodiagnostic testing helped distinguished multilevel symptomatology and guided multimodal rehabilitation in an elderly patient.

Case Presentation

An 80-year-old female with hypothyroidism presented with one month of severe left-sided scalp pain radiating to the left shoulder and fingers, accompanied by bilateral hand numbness in the C7-C8 distribution. Workup by multiple specialties revealed a high-titer ANA (1:1280) attributed to thyroiditis, equivocal Lyme serology deemed a false positive by Infectious Disease, and severe cervical stenosis with cord flattening at C4-C5 and C5-C6 on MRI. Before admission to acute inpatient rehabilitation, she developed left upper extremity weakness involving the elbow flexors (3/5), wrist extensors (3/5), and elbow extensors (2/5), which recovered to 5/5 bilaterally within six days, suggesting reversible neurologic dysfunction from dynamic cord compression, pain inhibition, or inflammation. Electromyography confirmed acute left C5-C6 radiculopathy with chronic neurogenic changes in the left biceps and active denervation in the left mid-cervical paraspinals. Normal triceps EMG and bilateral nerve conduction studies excluded C7-C8 radiculopathy and peripheral neuropathy, supporting a myelopathic etiology. Treatment included tramadol, celecoxib, duloxetine, gabapentin, methocarbamol, cervical traction, and intensive rehabilitation. After 12 days, she progressed from ambulating 30 feet with contact guard assistance using a rolling walker to independently walking 150 feet, with improved pain, achievement of all occupational therapy goals, and discharge home with home therapy.

Imaging: Severe cervical stenosis at C4-C5 and C5-C6 with central canal stenosis with cord flattening at C4-C5



Ambulation and Functional Mobility

Admission (7/15/2026)
30 ft
with rolling walker (supervision)

Discharge / Latest PT Note (7/27/2026–7/28/2026)
100 ft
without assistive device (close supervision)

Clinical Timeline

- **7/5/2026** — Hospital presentation: Severe left-sided neck/scalp/shoulder pain and neurologic symptoms
- **7/9/2026** — MRI (motion limited): Mild–moderate C4–5/C5–6 stenosis
- **7/14/2026** — Repeat MRI: Severe C4–5/C5–6 stenosis with cord flattening
- **7/15/2026** — Inpatient rehabilitation: 3rtensive PT/OT for mobility, ADLs, and strength
- **7/21/2026** — EMG/NCS: Acute left C5–C6 radiculopathy; Normal bilateral NCS
- **7/27/2026** — Discharged home: Functional gains in mobility and ADLs; Home therapy
- **8/20/2026** — C7–T1 ESI: Left interlaminar epidural steroid injection; VAS 6/10 → 2/10 (immediate)

Discussion

Cervical stenosis can produce overlapping myelopathic and radicular symptoms, complicating clinical localization. MRI demonstrated severe C4–5 and C5–6 stenosis with cord flattening, while electrodiagnostic testing identified a superimposed acute left C5–C6 radiculopathy with normal bilateral upper-extremity nerve conduction studies.

Despite fluctuating motor deficits, multidisciplinary inpatient rehabilitation resulted in meaningful gains in mobility and ADLs, allowing discharge home with continued therapy. Persistent radicular pain was subsequently treated with cervical epidural steroid injection, with immediate pain reduction from 6/10 to 2/10.

This case highlights the complementary roles of imaging, electrodiagnostic testing, and rehabilitation in distinguishing concurrent pathology and guiding individualized management.

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