SINAI HOSPITAL
A LifeBridge Health Center

Rehabilitation Institute
***ABBEL** - Anil Bhave Biomechanics & Engineering Labs Research Division*

CARE BRAVELY

From Hypoperfusion to Dysfunction: A Rare Presentation of Ischemic Myelopathy

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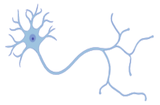
Introduction

- Ischemic myelopathy is a rare condition
- Symptom presentation varies across individuals
- Abrupt onset of symptoms typically follows inciting events, i.e., hypoperfusion states like shock
- Specifically, anterior ischemic myelopathy develops after ischemia in the anterior spinal artery
- Electrodiagnostic imaging can be helpful in diagnosis


Primary Aim

This case report aims to highlight a case of ischemic myelopathy (IM) with abrupt right lower extremity numbness and the use of electromyography (EMG) and nerve conduction studies (NCS) in diagnosis.

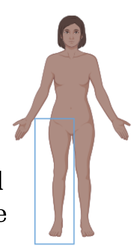
Case Description

Patient Demographics

- 60-year-old black female with history of anxiety, depression, hypertension, thoracic myelopathy, gastric bypass
- Previously independent with ADLs and employed as a city bus driver

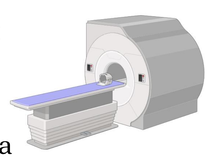
Symptom Presentation

- Constant numbness in right lower limb, spread from mid-buttock distally to foot
- No associated weakness
- Complete loss of hot/cold discrimination and pinprick sensation below the T11 dermatome



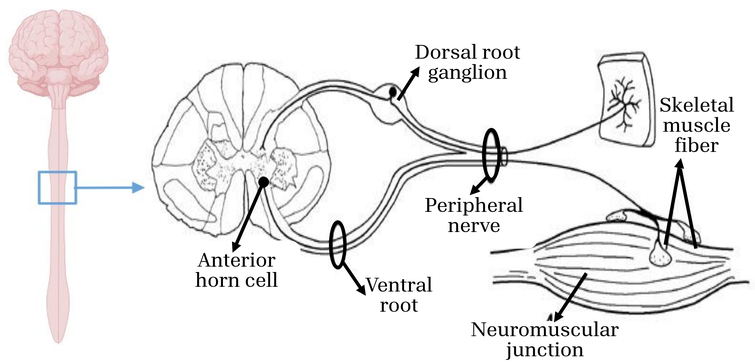
Imaging Findings

- MRI demonstrated T1 hypo-intensity at the anterior superior endplate of T12
- Region also showed T2 hyperintensity
- Findings are suggestive of myelomalacia



IM Background Information

Spinal Root Nerve Anatomy



Confirming an IM Diagnosis

- Area of the lesion may cause electrodiagnostic abnormalities (NCS and EMG) depending on anterior horn involvement
- CMAP amplitudes may be normal or reduced
- SNAPs will be normal
- EMG may or may not show:
  - Evidence of denervation
  - Reduced volitional activation of motor units

Results

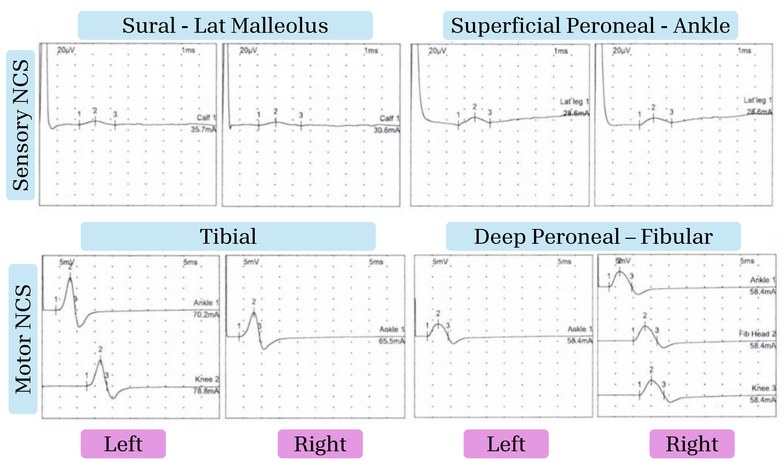


Figure 2. Normal NCS findings in the right lower extremity

Not pictured – EMG that demonstrated normal findings

Clinical Timeline

Summer 2024 Intensive care unit stay secondary to sepsis

Fall 2024 Right lower extremity numbness, with normal EMG & NCS

Spring 2025 Symptom improvement and ADLs no longer impacted

Primary Takeaway

This case report demonstrates that anterior ischemic myelopathy can present with abrupt, persistent sensory deficits even with inconclusive neurodiagnostic results and imaging.

Discussion

- Ischemic myelopathy is rare and easily missed due to variable presentation
- Abrupt onset after hypoperfusion events should prompt diagnostic consideration
- Sensory-predominant deficits can occur with selective spinothalamic tract vulnerability
- Normal EMG/NCS does not rule out spinal cord ischemia
- MRI may show subtle or nonspecific myelomalacia without clear infarction
- Preserved proprioception supports anterior spinal artery–pattern involvement
- Early distinction from inflammatory myelitis is crucial to avoid mismanagement


References