When Is Demyelination Not CIDP?

What to think when patients don't respond to first-line therapies

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When to Suspect That the Neuropathy Is Not CIDP

- When disorder does not meet EFNS/PNS criteria
- When disorder is not “typical” CIDP
  - Does not have proximal and distal weakness
- If response is inadequate to one first-line treatment, one of the other first-line treatment alternatives should be tried
- When concurrent illnesses might cause similar abnormalities

Joint Task Force of the EFNS/PNS. *J Periph Nerv Syst*. 2010;15:1-9.

The Spectrum of Chronic Neuropathies With Conduction Slowing

- Inherited neuropathies
- Paraprotein-related neuropathies
  - POEMS
  - Anti-MAG
  - Other IgM-related neuropathies
- Amyloid
- Diabetic neuropathy

Inherited vs Acquired Demyelinating Neuropathy

Inherited

- Predominantly distal, symmetric weakness
- Pes cavus
- Uniform conduction slowing in CMT-1A but not necessarily in others
- Elevated CSF protein
- May not have family history
  - *De novo* mutations
  - Recessive disorders

Acquired

- Proximal and distal weakness
- Non-uniform
  - Temporal dispersion
  - Conduction block
- Elevated CSF protein

Dalakas MC. *Nat Rev Neurol*. 2011;7:507-517.

Paraprotein Neuropathies

- IgM paraprotein associated with demyelinating neuropathies in ~ 50%
- IgG paraprotein occurs in 5% of normals over the age of 60
  - IgG paraprotein in both serum and CSF is more frequent in CIDP than in normal controls
- 50% of IgM with neuropathy have anti-MAG
- Anti-MAG neuropathy
  - Sensory > motor
  - Usually very slow and insidious but some more aggressive
  - Poor response to first-line therapies
  - B cell depletion controversial

Dalakas MC. *Nat Rev Neurol*. 2011;7:507-517.

Amyloid Neuropathy

- Clinical picture and progression of CIDP and amyloid may overlap[1]
- This can occur in transthyretin or acquired amyloid[1]
- The electrophysiology of amyloid and CIDP can be identical[2]
- CSF protein can be increased in both disorders[2]
- Cardiac involvement is not necessary in diffuse amyloid causing motor weakness[3]
- Testing should include serum immunofixation, tissue biopsy, and transthyretin analysis

1. Cappaellari M. *J Periph Nerv Syst*. 2001;16(2):119-129. 2. Mathis S, et al. *Muscle Nerve*. 2012;45(1):26-31.

3. Briemberg HR, et al. *Muscle Nerve*. 2004;29(2):318-322.

POEMS

- POEMS: Polyneuropathy, organomegaly, endocrinopathy, M protein, and skin changes
- Screen for osteosclerotic myeloma
- Both POEMS and CIDP can exhibit changes of an acquired demyelinating neuropathy[1]
- In general, POEMS has less involvement of distal latency and more axonal loss[1]
- More uniform demyelination in POEMS than CIDP[2]
- Absence of distal leg responses more common in POEMS[3]

1. Guo X, et al. *J Clin Neurosci.* 2014;21(4):587-590. 2. Mauermann ML, et al. *J Neurol Neurosurg Psych.* 2012;83(5):480-486. 3. Cui RT, et al. *J Clin Neurophysiol.* 2012;29(4):345-348.

B12 Deficiency

- Typical NCV is a mixed axonal and demyelinating process[1]
- 11% of B12 deficiency had demyelinating features only[1]
- One report showed that B12 deficiency can be primarily demyelinating[2]
- Conduction block has been reported. This was reversible after B12 replacement[3]

1. Kalita J, et al. *Nutr Neurosci.* 2014;17(4):156-163. 2. Steiner I, et al. *J Neurol.* 1988;235(3):163-164. 3. Al-Shubaili AF, et al. *Muscle Nerve.* 1998;21(10):1341-1343.