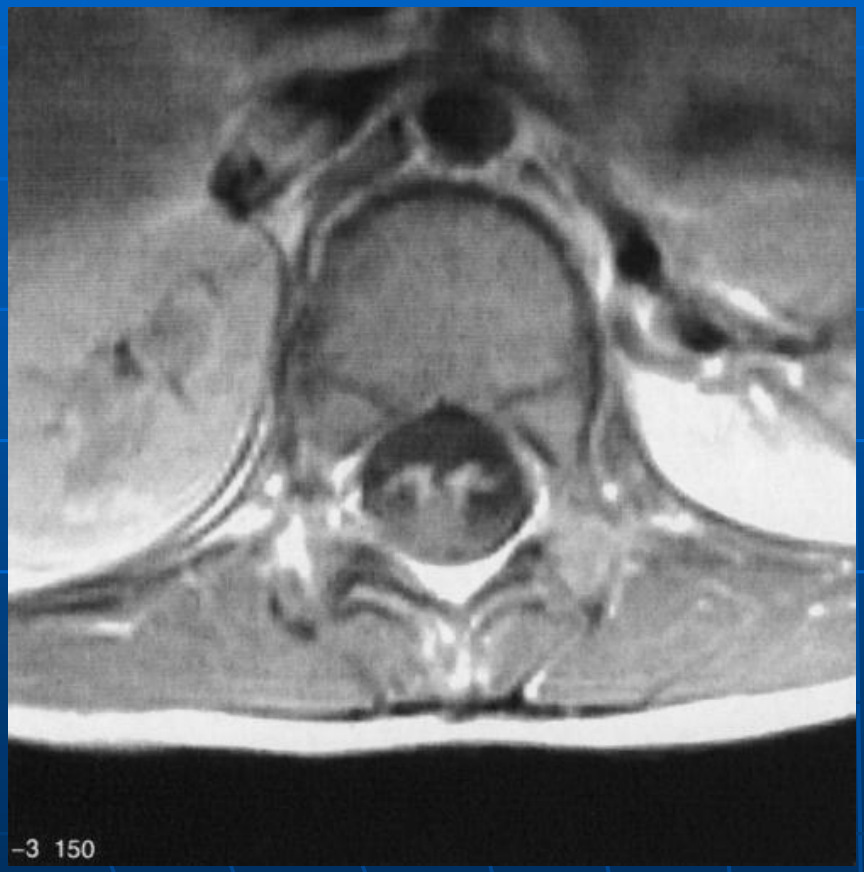
Guillain-Barre syndrome

- Acute inflammatory demyelinating polyradiculoneuropathy (AIDP)
- Autoimmune postinfectious or postvaccinial acute inflammatory demyelination of peripheral nerves, nerve roots, cranial nerves
- Antecedent event or "trigger" in 70% of GBS cases
  - Usually follows recent viral illness
- *Campylobacter jejuni* infection can be trigger
- Classically presents with "ascending paralysis"
  - Ascent up to brainstem may involve cranial nerves
  - Respiratory paralysis requiring ventilator in severe cases
- Sensory loss common but less severe

MRI

- **T2WI**
  - Should see normal conus
  - May see slight prominence of root size
- **T1WI C+**
  - Avid enhancement of cauda equina
    - Roots may be slightly thickened, not nodular
  - Axial images show preferential contrast accentuation of ventral roots in cauda
  - Pial surface of distal cord and conus enhances variably



Reveals enhancement and thickening of the nerve roots.

Axial T1WI C+ MR reveals intense enhancement of the ventral cauda equina (white solid arrow). CSF analysis in early stages is helpful to assess chemistry, protein levels, and infectious process.

Sagittal T1WI C+ FS MR depicts thin pial enhancement along the pial surface of the midcervical cord (white curved arrow). This patient had < 4 weeks of weakness, muscle pain, and areflexia involving her distal > proximal extremities. She had no abnormal sensation changes. CSF analysis revealed ↑ protein with 2 white blood cells.

Sagittal T2WI MR in a GBS patient reveals thickened cauda equina (white solid arrow). The conus has a normal morphology and exhibits normal signal intensities. Elevated antiganglioside antibody titer confirmed Guillain-Barré syndrome.

Enhancing (smooth Nerve Roots)

- Guillain-Barre syndrome
- CMV
- *Chronic Inflammatory Demyelinating Polyradiculoneuropathy*