Myelopathy

Spinal cord disease

Patterns of spinal cord disease

- Central cord syndrome
- Complete cord syndrome
- Anterior two-third syndrome
- Brown- Sequard (hemicord) syndrome
- Intramedullary and extramedullary syndrome

Causes

Compressive

- Epidural, intradural, or intramedullary neoplasm
- Epidural abscess
- Epidural hemorrhage
- Cervical spondylosis
- Herniated disc
- Trauma

Causes

Non compressive

Inflammatory

- Transverse myelitis
- Multiple sclerosis
- Vasculitis

Vascular

- Ischemia
- AVM

Metabolic

- Subacute combined degeneration

Infections

- H simplex 2
- Bacterial
- Parasitic

Developmental

- Syringomyelia

Degenerative

Causes

Infections

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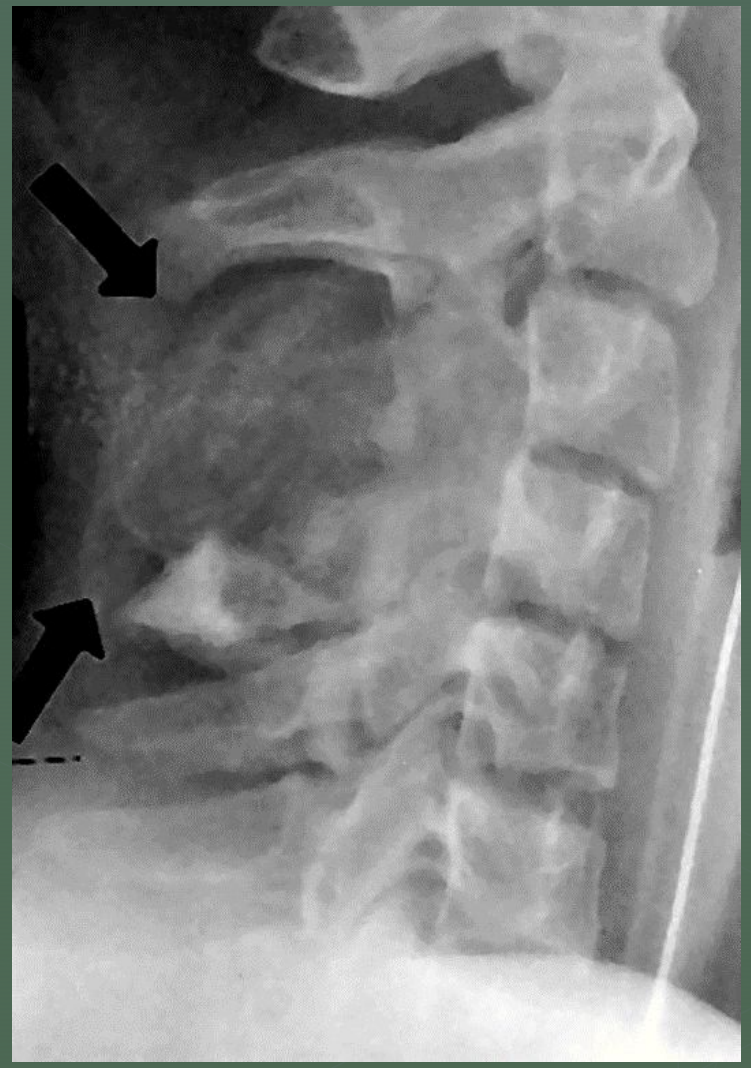
Metabolic

- Subacute combined degeneration

Degenerative

Investigations

- *Spine x-ray*
- MRI
- CSF



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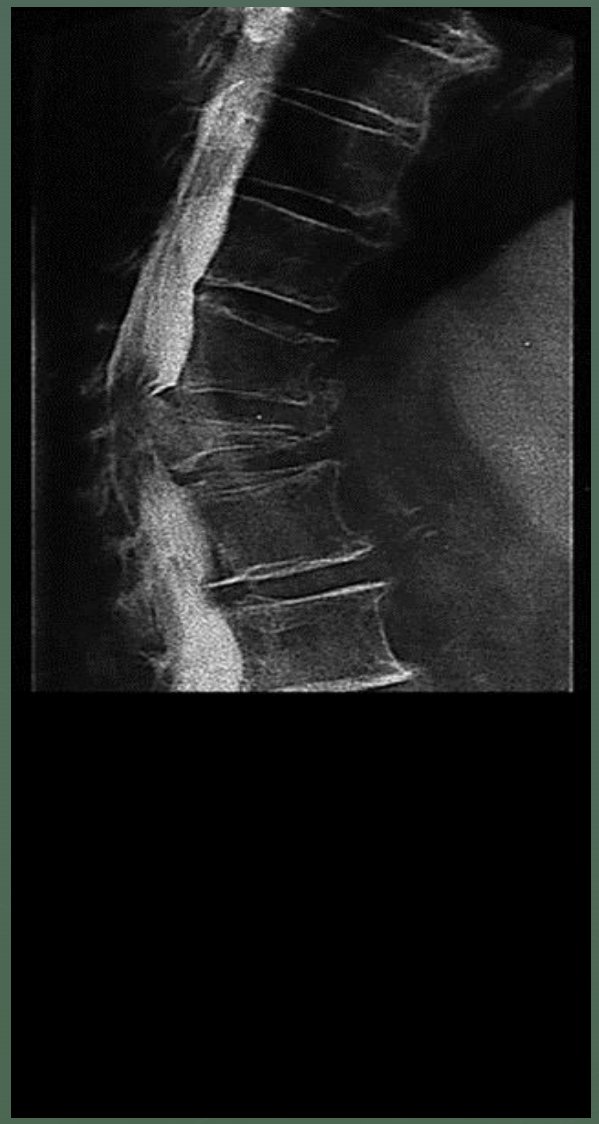

Investigations

- Spine x-ray & CXR
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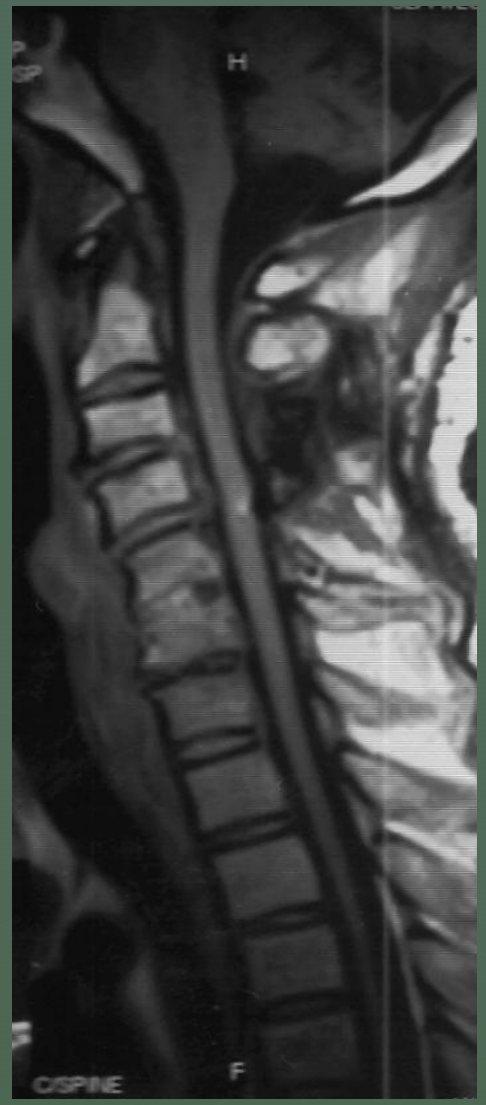

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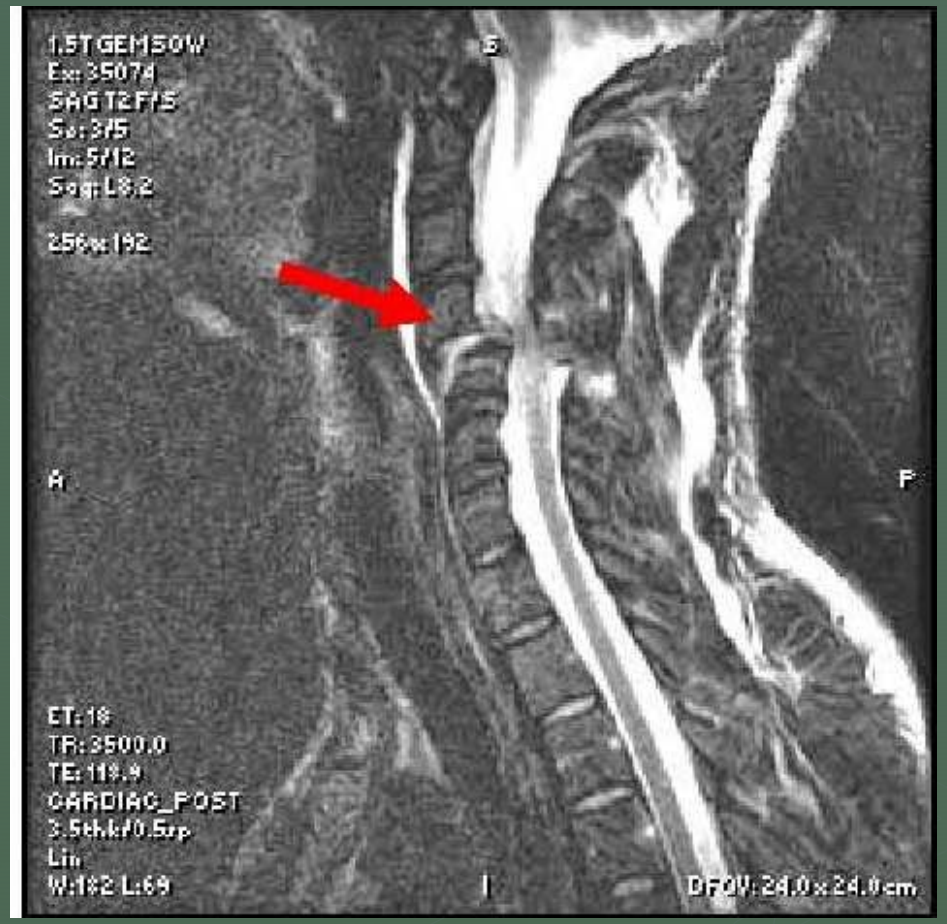


Compression of the spinal cord

- Commonest spinal cord emergency
- It is reversible in the early stage
- Clinically presented as a cute / chronic extramedullary or Brown – sequard syndrome

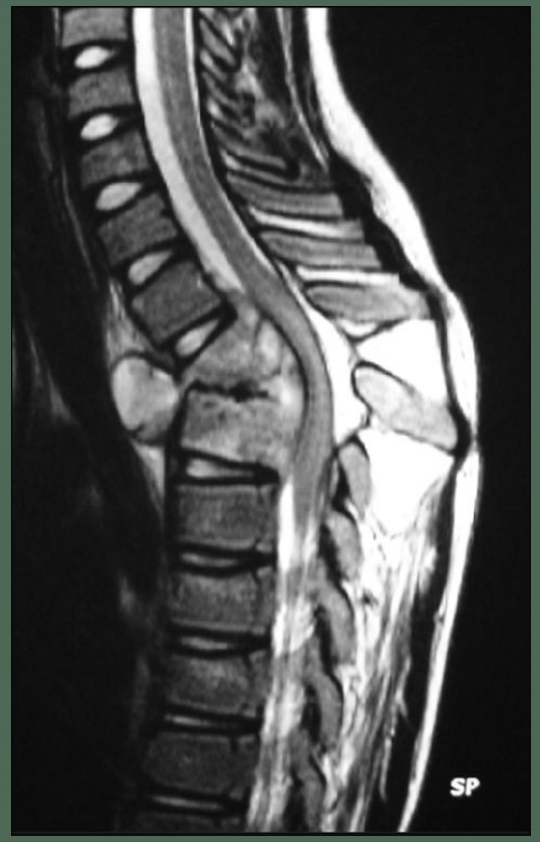
Compression of the spinal cord

Vertebral (80%)

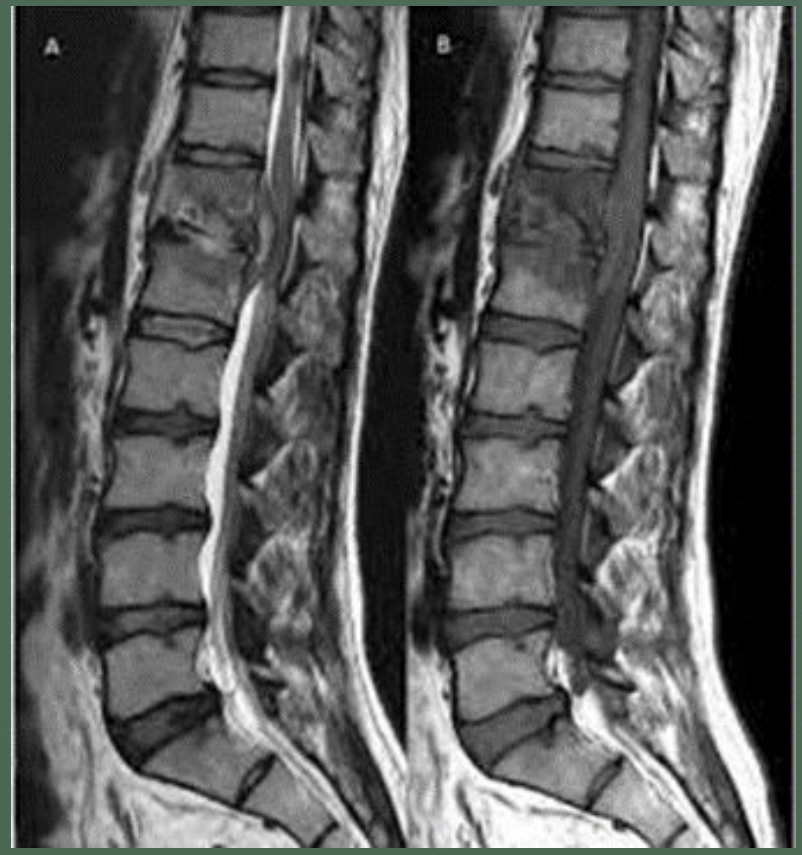
- Trauma
- Intervertebral disc metastasis (breast, prostate, bronchus)
- Myeloma
- TB

Compression of the spinal cord

metastasis



TB



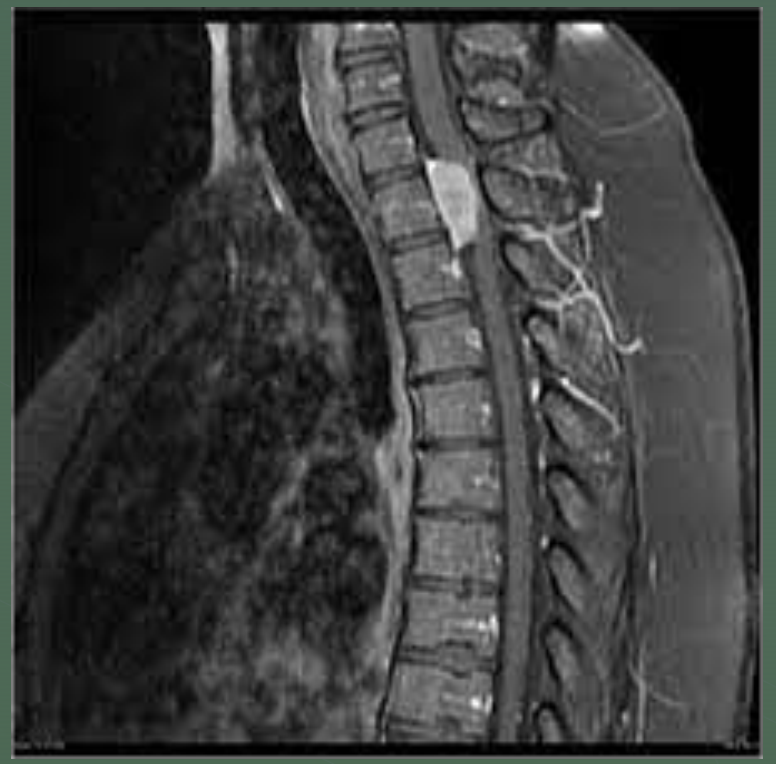
Compression of the spinal cord

Meninges (15%)

- Tumor

  (Meningioma, neurofibroma ependymoma, metastasis, lymphoma leukemia)

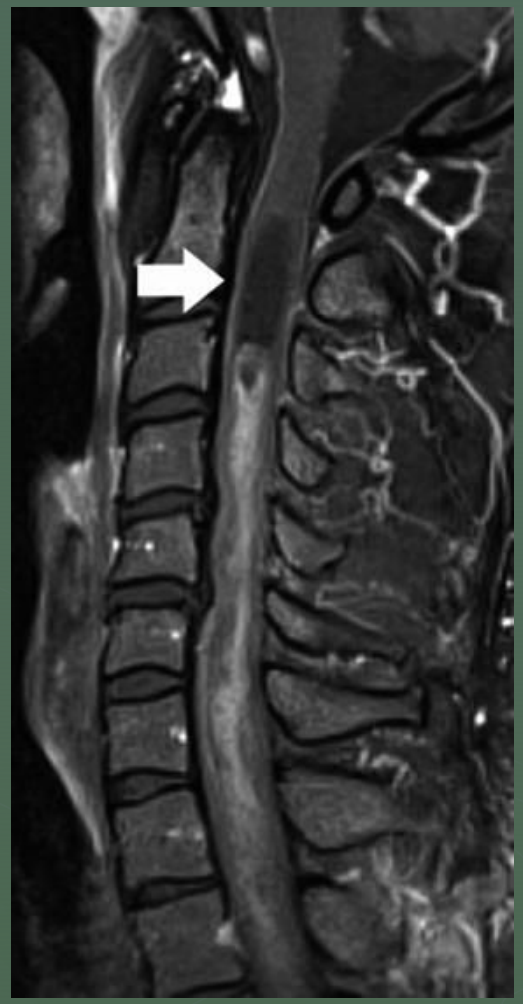
- Epidural abscess



Compression of the spinal cord

Tumors of spinal cord (5%)

- Glioma
- Ependymoma
- Metastasis



Compression of the spinal cord

Management

- Surgical decompression
- Radiotherapy

NONCOMPRESSIVE CAUSES OF ACUTE MYELOPATHIES

The groups of disorders that present as acute myelopathy are:

- Demyelination
- Infections
- Inflammatory disorders
- Vascular
- Neoplastic and paraneoplastic

Transverse myelitis

Inflammation of the spinal cord with an incidence of 1 severe case and 8 mild cases / million / year

- Acute or subacute monophasic
- 40% antecedent infection or vaccination

2. Idiopathic
3. Demyelination (Multiple sclerosis & NMO)
4. Infections (viral & bacterial)
5. Vasculitis (SLE, Sjogren's syndrome, scleroderma, mixed connective tissue disorder, Behc,et's disease, and sarcoidosis)

Transverse myelitis

Clinical features

- Local neck or back pain
- Few days progressive asymmetric
  1. Paresthesia / Sensory loss
  2. Motor weakness
  3. Urgent urination / Urine retention

Specific features

- Neuromyelitis optica

should be considered in a patients presenting with acute (progress over hours) complete transverse myelitis

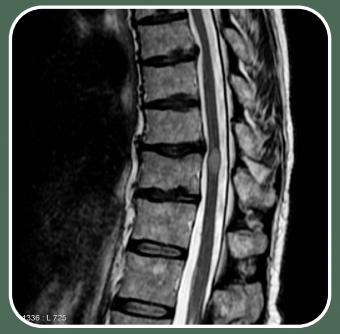
- Multiple sclerosis

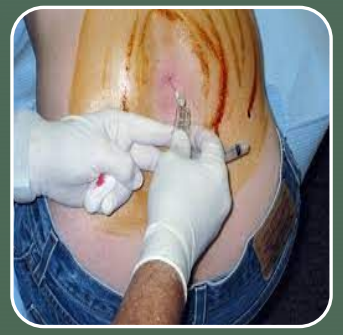
typically asymmetric myelopathy with Lhermitte's sign (paresthesias spreading down the spine, often into the legs, on neck movement)

Infectious Myelopathy

- Fever, Confusion, Meningismus
- Rash
- Concurrent systemic infection
- Immunocompromised state
- Recurrent genital infection
- Lymphadenopathy
- Residence in area endemic for parasitic infections

Transverse myelitis





Myelopathy
- Acute
- Subacute

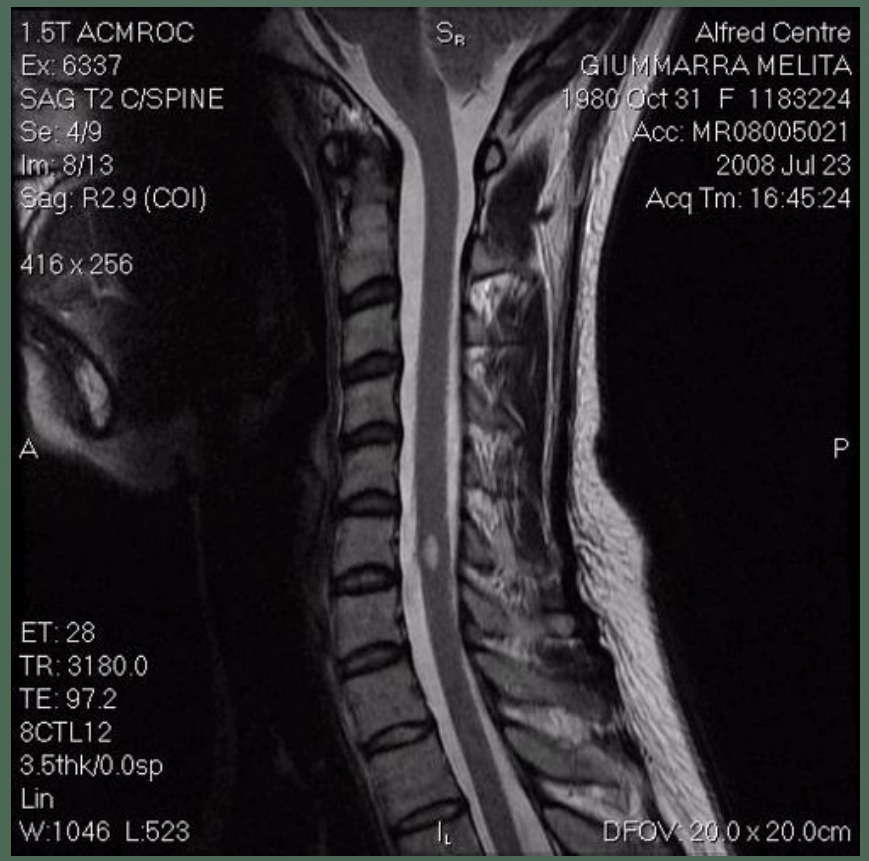
MRI
- Compressive
- Non-compressive

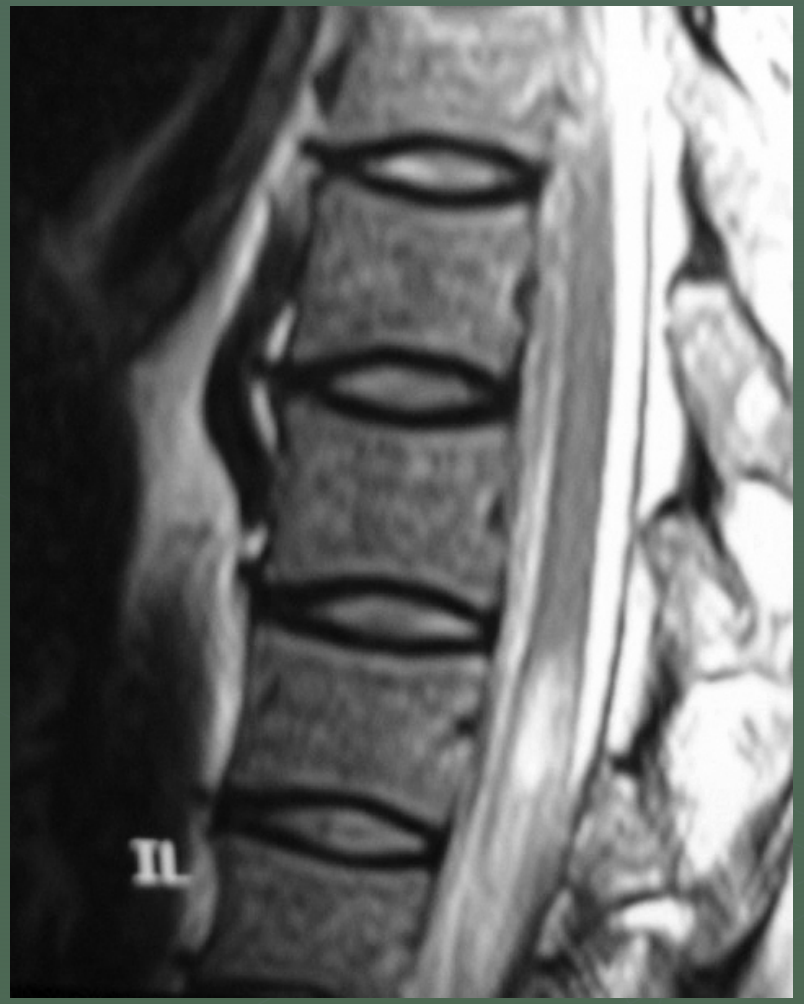
CSF
inflammatory
- Infections
- Demyelination

Serology
PCR
Stains & cultures
oligoclonal bands

Transverse myelitis

- MRI

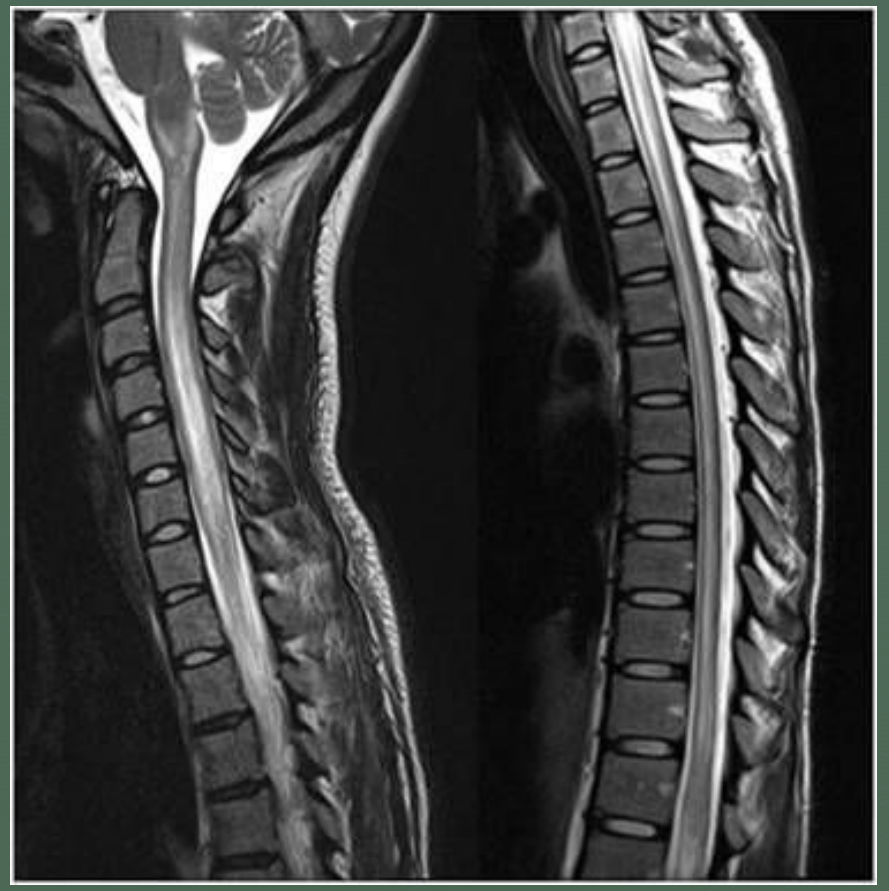




Transverse myelitis

Neuromyelitis optica

- Long cord lesion >3 segments; cord swelling and gadolinium enhancement in acute lesions
- Posative aquaporin-4



Transverse myelitis

CSF

- Lymphocytic pleocytosis several hundred / MicroL
- Protein normal or elevated
- Sugar low in infections

Oligoclonal band

- Multiple sclerosis, Neuromyelitis optica & Subacute sclerosing panencephalitis
- Guillain–Barré syndrome
- Vasculitis
- Syphilis & Lyme disease
- Subarachnoid hemorrhage
- Multiple myeloma

Serology

- Herpes simplex virus
- Varicella-zoster virus
- HIV
- Human T-lymphotrophic virus type 1
- Syphilis
- Hepatitis A, B, C
- Mycoplasma

Criteria for Idiopathic Acute Transverse Myelitis

- Sensory, motor, or autonomic dysfunction attributable to the spinal cord
- Bilateral signs and/or symptoms (though not necessarily symmetric)
- Clearly defined sensory level
- Exclusion of extra-axial compressive etiology by neuroimaging MRI
- Inflammation within the spinal cord demonstrated by CSF pleocytosis or elevated IgG index or gadolinium enhancement

Treatment

- Methylprednisolone

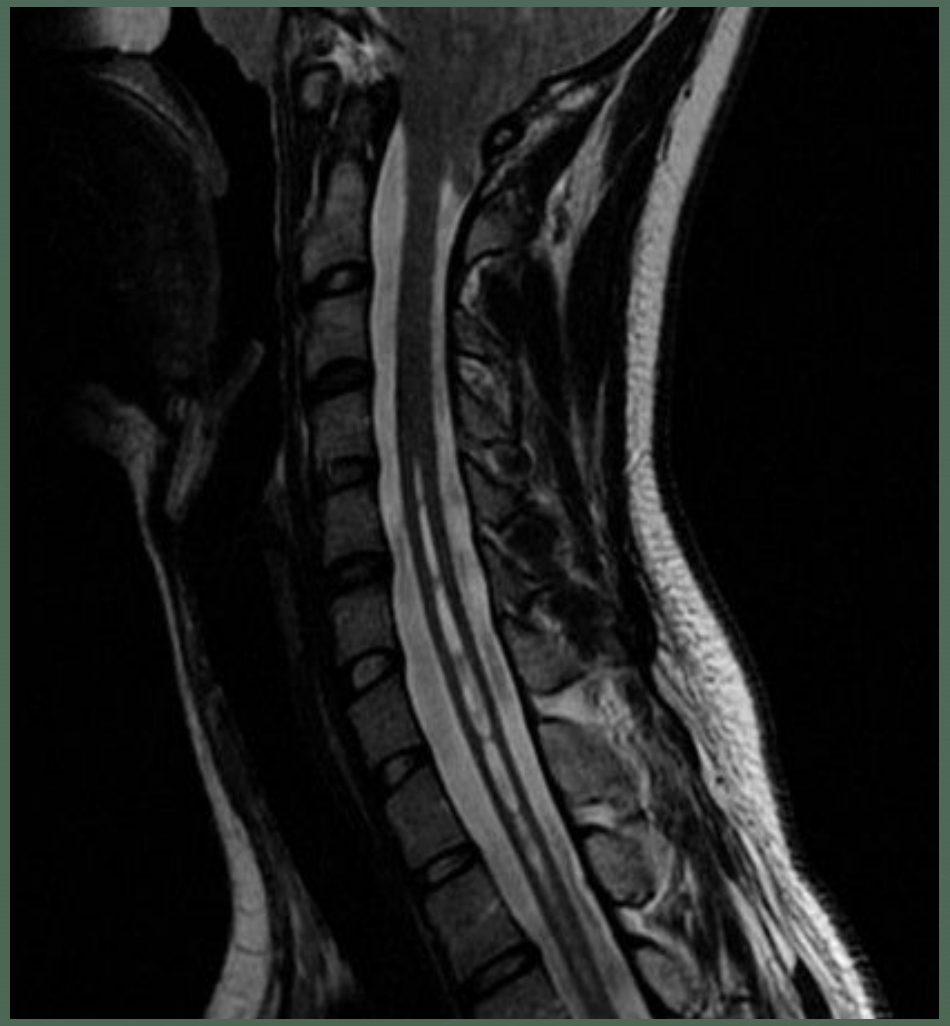
given in a dose of 1 g daily for 3 to 7 days, "is typically the first treatment offered to hasten recovery, reduce disease activity, and restore neurology function.

- Prednisolone
- Plasmapheresis VS immunoglobulin

Syringomyelia

Fluid –filled cavity near the center of spinal cord due to CSF flow obstruction

- Congenital (Chiari type I malformation)
- Acquired (trauma, meningitis, tumor hemorrhage or arachnoiditis)



Syringomyelia

- Age 20 – 40
- Slowly progressive neck & shoulder pain
- Central cord syndrome
  1. Pain & temperature sensory loss in the upper limbs as hemicape
  2. LMN signs in the UL & UMN in the LL
  3. Atrophic lesions (painless ulcers) in the UL

Syringomyelia

Associated anomalies

- Kyphoscoliosis
- Pes cavus
- Spina bifida
- syringobulbia

Management Surgical decompression

Vascular Disorders

- Anterior spinal artery occlusion can lead to spinal cord infarction mimicking myelitis develop acutely over minutes (Anterior two-third syndrome)
- However, arteriovenous fistulas (AVFs) usually progress slowly due to gradual ischemia or compression

Causes

- Hypotension
- Embolic source
- Vasculitis
- Prothrombotic states
- Aortic surgery or Spinal angiography
- Aortic/vertebral dissection