CERVICAL SPONDYLOSIS & CERVICAL DISC DISEASE

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Cervical spondylosis

- Cervical osteophytosis
- Most common progressive disease in the aging cervical spine
- Seen in 95% of the people by 65 years

Pathophysiology

- Dessication of the disc material and loss of disc height
- Greater stress on the articular cartilage, vertebral end plates and facet joints
- Loss of normal cervical lordosis and Formation of osteophytes
- Narrowing of neural foramina and spinal canal
- Secondary vascular and compressive phenomenon

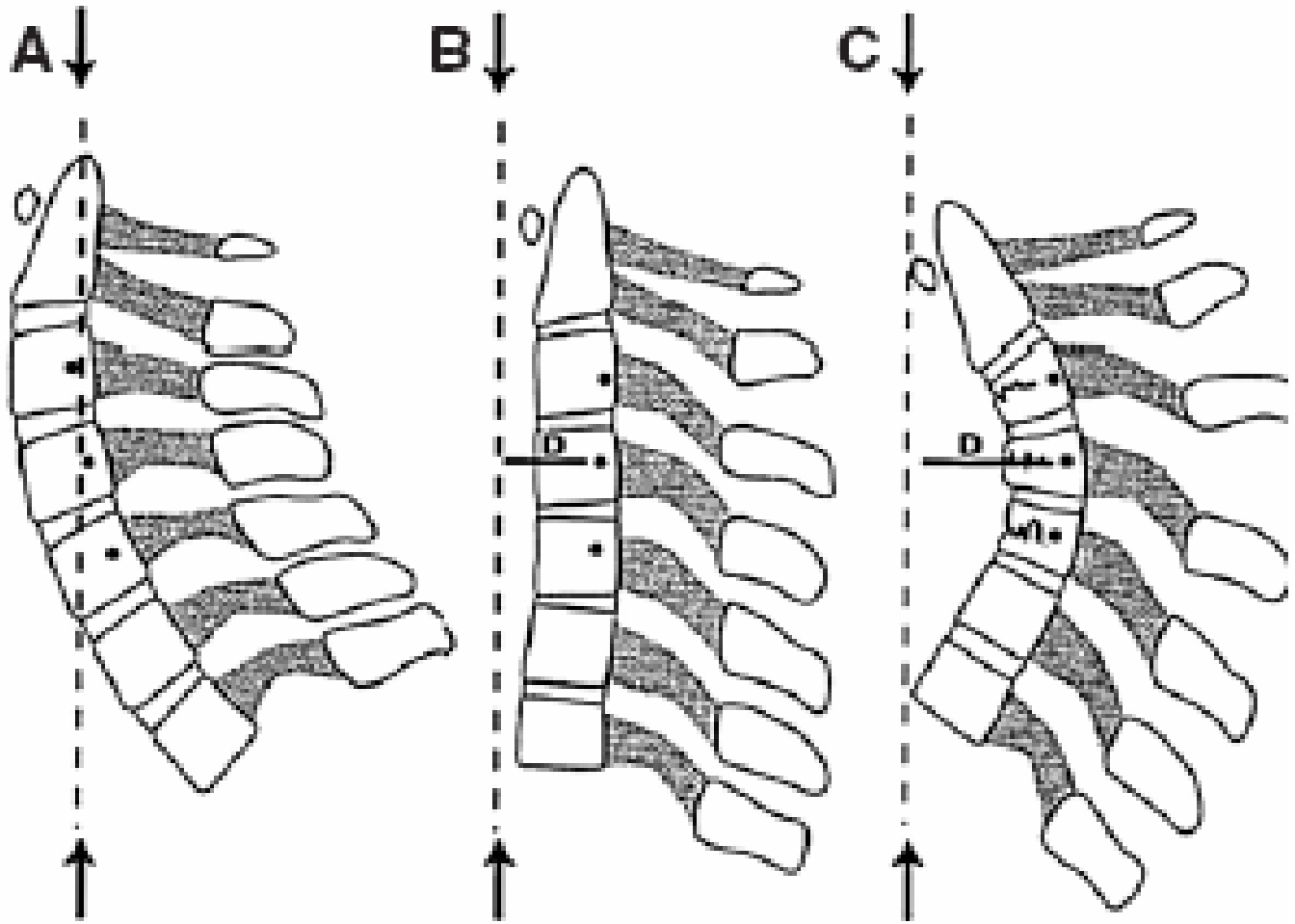
Mechanical factors

Static Factors

- Congenital spinal canal stenosis
- Disc herniation
- Vertebral body osteophytes
- Hypertrophied ligamentum flavum
- Ossified posterior longitudinal ligament

Dynamic Factors

- Abnormal stresses over spinal column and cord during normal and abnormal movements and loads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Clinical Presentation

- Neck pain
- Cervical Radiculopathy
- Cervical Myelopathy

Signs and Symptoms

Radiculopathy

- Radicular pain
- Weakness limited to particular myotome
- Sensory loss
- Absent or decreased DTR

Signs and Symptoms

Myelopathy

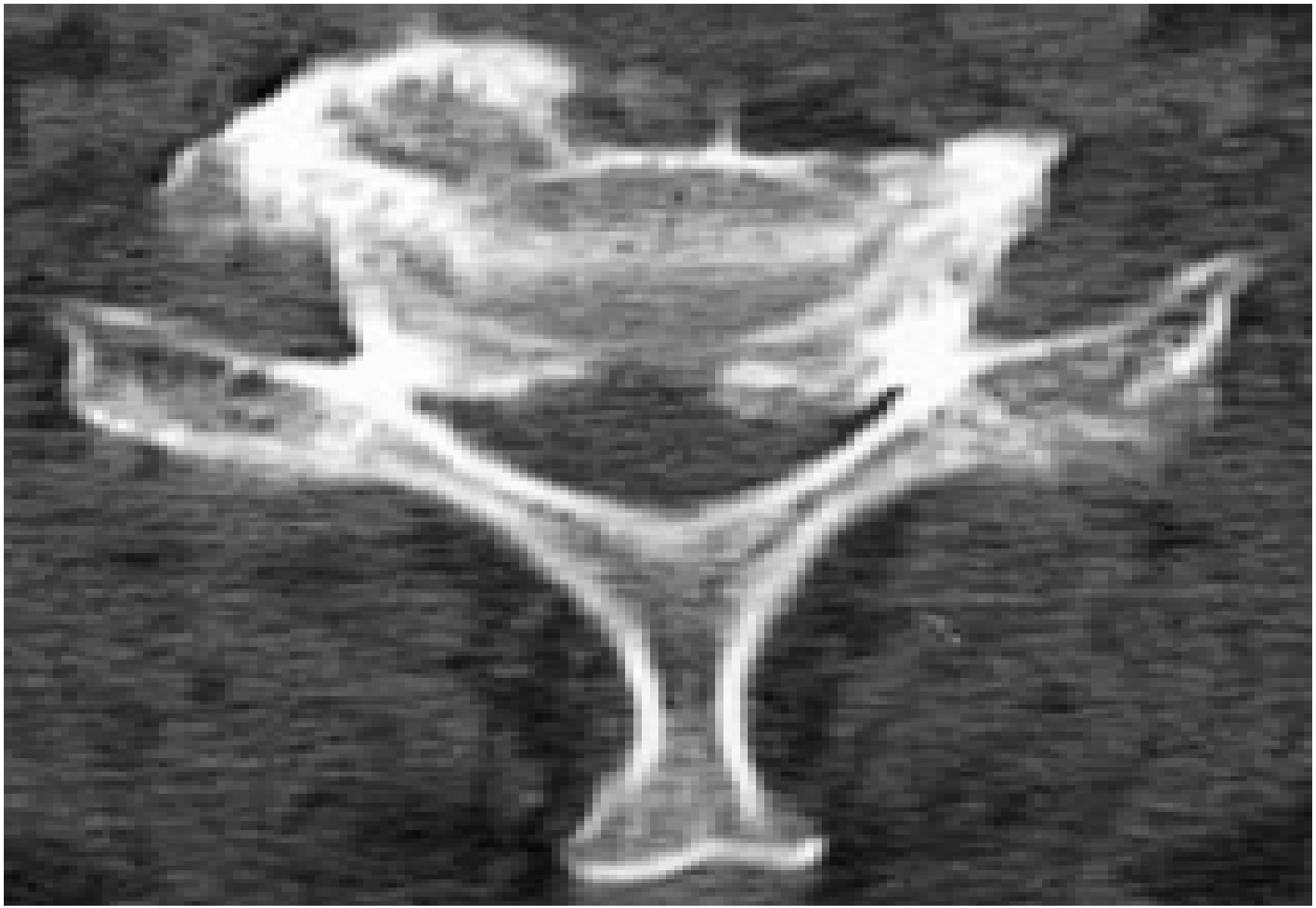
- Weakness and stiffness of legs, gait abnormality
- Numb or clumsy hand
- Rarely urinary incontinence
- Central cord syndrome

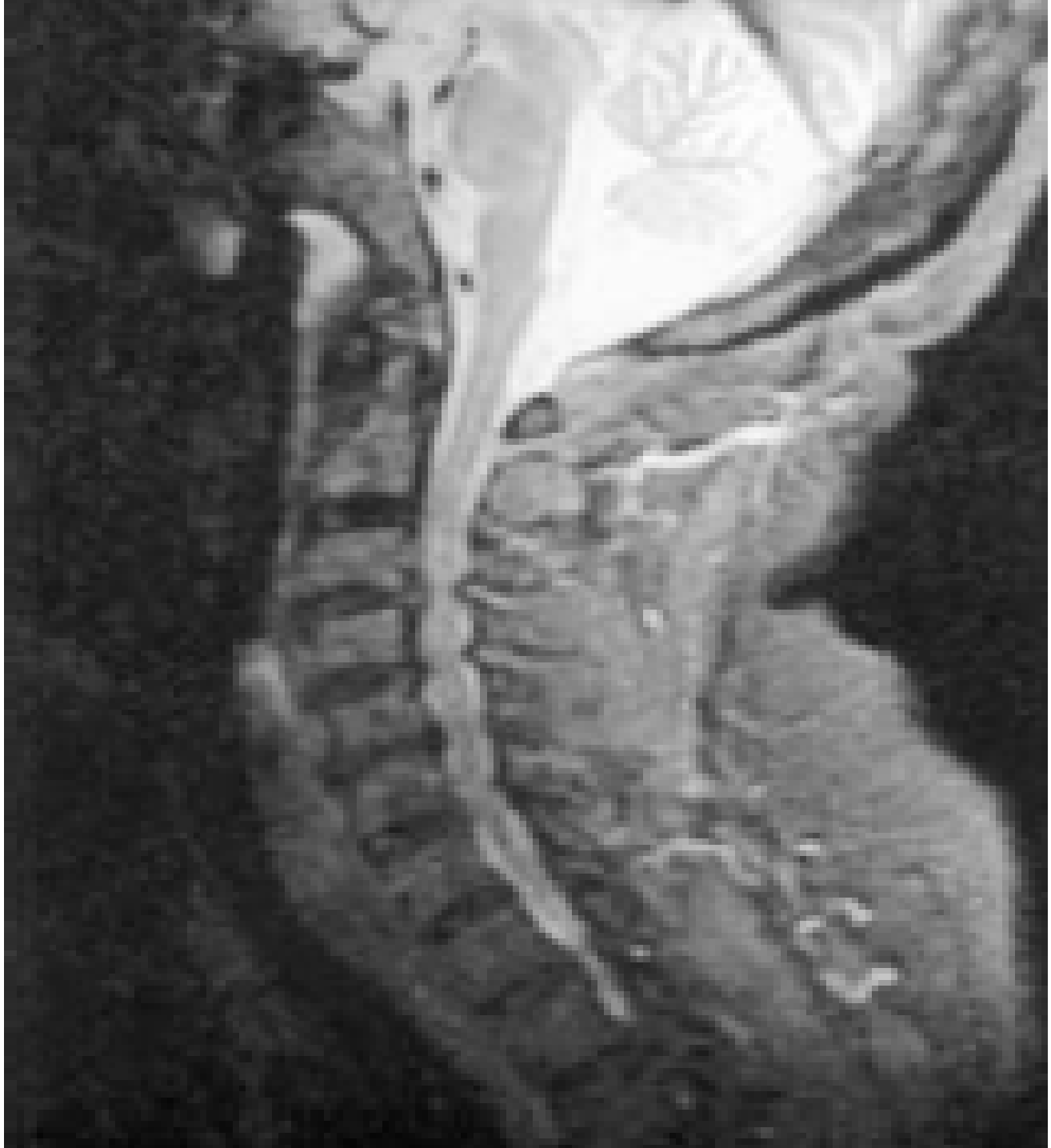
Differential Diagnosis

- Amyotropic lateral Sclerosis
- Multiple Sclerosis
- Subacute combined degeneration of cord
- Tumours
- Syringomyelia
- Tabes dorsalis

Radiographic Studies

- X- Ray
- CT and CT myelography
- MRI
- Electrophysiologic Studies





Medical Management

- NSAID's
- Opoid Analgesics
- Muscle Relaxants
- Antidepressants
- Anticonvulsants
- Cervical epidural steroid injection

Nonpharmacological Nonoperative therapy

- Cervical collar
- Cervical Traction
- Physical Therapy
  - Active isometric exercises
  - Thermotherpy
  - Chiropractic manipulation
  - Ultrasound
  - TENS

Approach to a patient with neck pain

- NSAID's
- Isometric Neck Exercises
- Physical therapy

- Surgery - Fusion

Approach to a patient with cervical radiculopathy

- Initially conservative management
- Surgery- ventral or dorsal
- Ventral- ACDF
- Dorsal- Laminoforminotomy

Approach to a patient with CSM

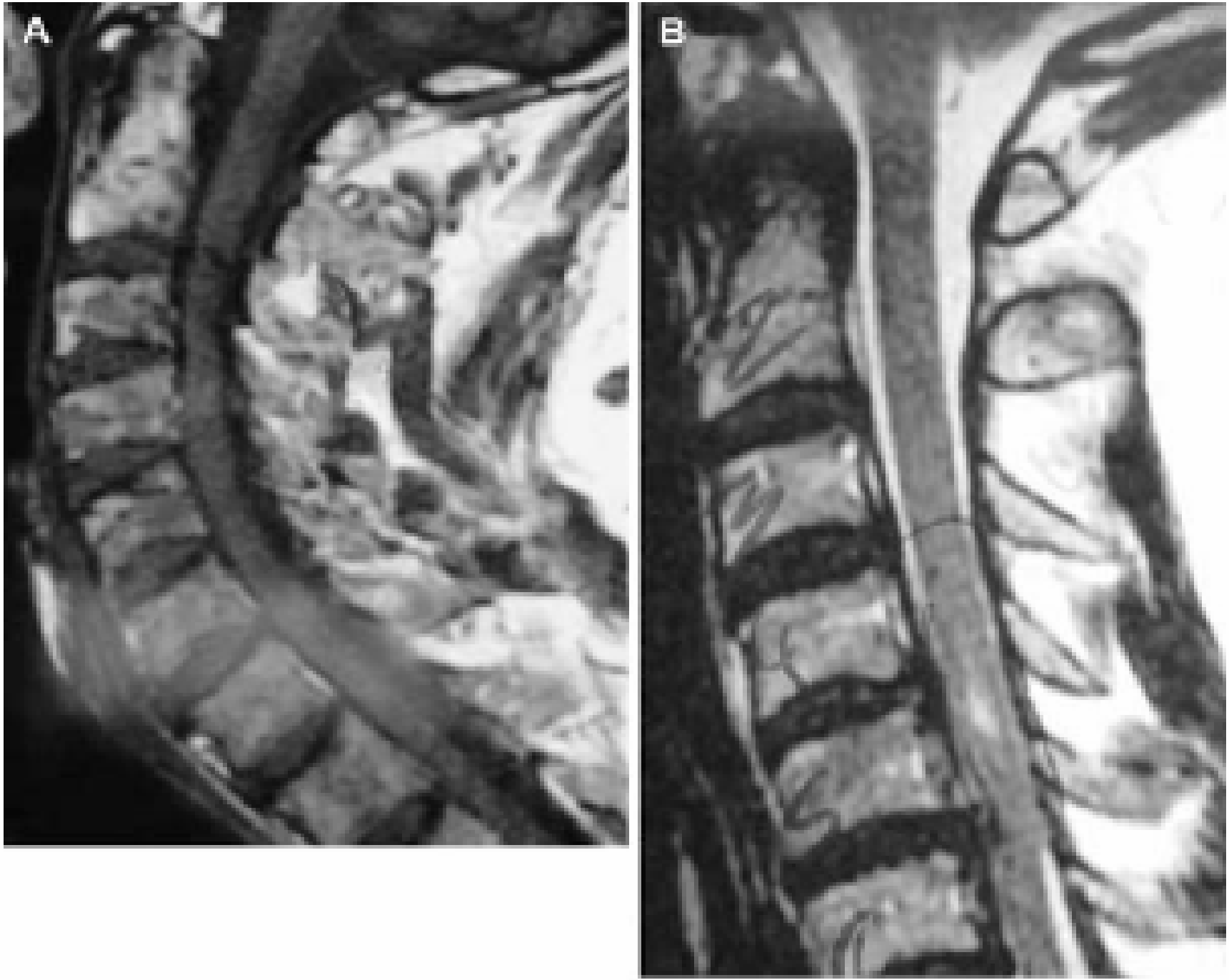
- Nonsurgical Treatement-
  patient is medically frail
  Mild Static disease
- Surgical Treatment
  Progressive Disease

Surgical options

- Dorsal decompression
  - Laminectomy
  - laminoplasty
- Ventral decompression
  - ACDF
  - Corpectomy and Fixation

Cervical spondylosis: Ventral or Dorsal surgery

- Location of the lesion
- Specific disease pathology
- Number of vertebral levels
- Age at surgery
- Curvature of the spine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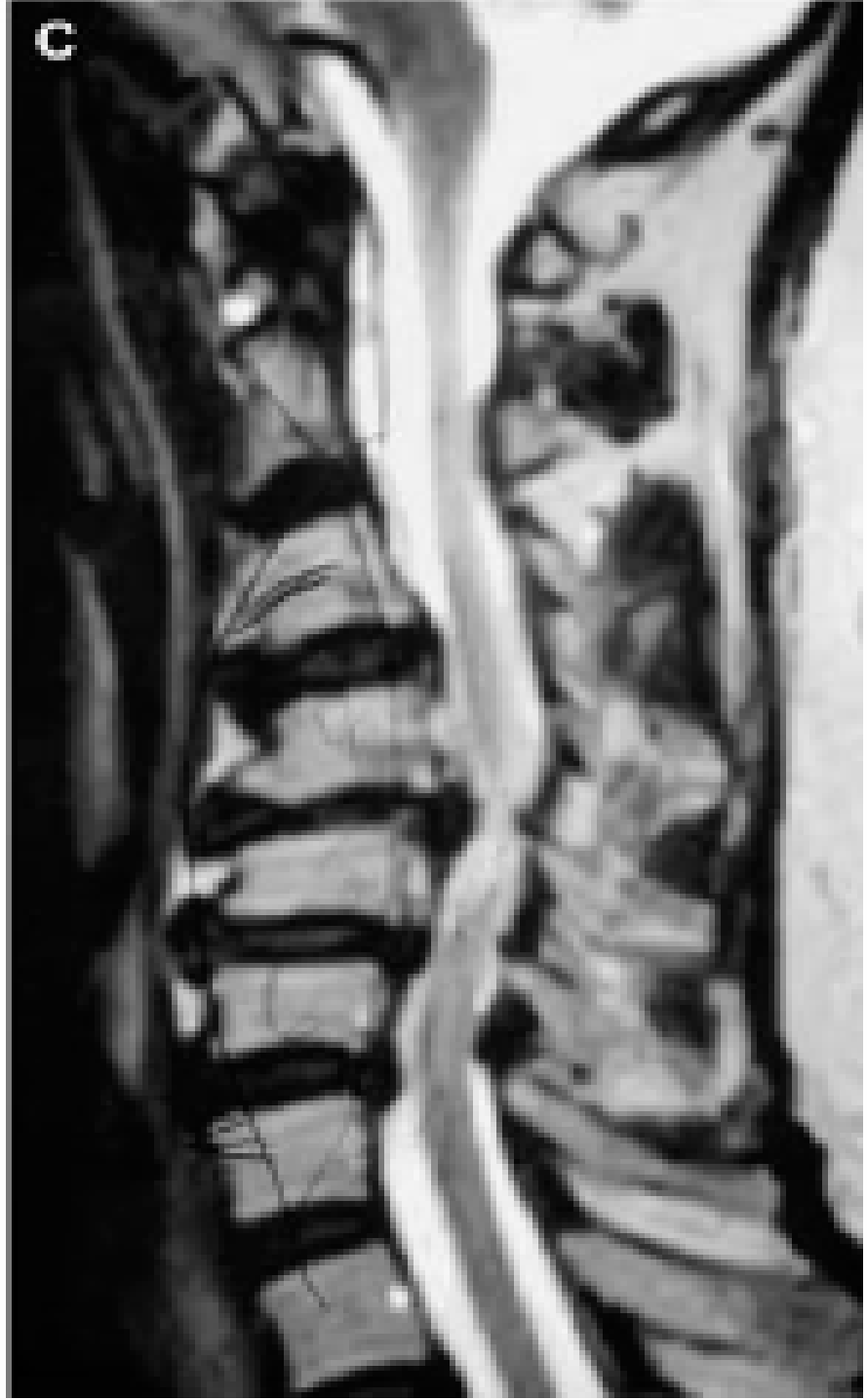
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Complication of Laminectomy

- PostLaminectomy Kyphosis
- Instability
- Postlaminectomy membrane

Ventral procedures for Cervical Spondylosis

- Indications

  Anterior compression by degenerated disc, OPLL, degenerated vertebral body

  ≤3 level disease

Procedures

- ACDF with or without fusion
- ACDF with cervical plating
- Corpectomy with fusion

ACDF

Indications

- Degeneration limited to disc
- Cervical spondylosis with radiculopathy

Techniques

- Smith-Robinson
- Cloward
- Bloom and Raney

Bryan Cervical Disc Prosthesis

- Polyurethane wrapped low friction, water resistant elastic nucleus located between and articulating with two titanium alloy surfaces.

Cervical corpectomy

Aims:

- Ventral decompression
- Interbody fusion
- Plate osteosynthesis

ACDF with Vs without Plating

- Several RCT's demonstrated no improved clinical outcome in patient with ACDF with or without plating in patient with single level disease
- In multilevel procedures and unstable spine, there is increased stability and decreased graft migration following instrumentation

Autograft vs Allograft

- Clinical efficacy
- Graft harvest morbidity
- Cost and availability

Thank you