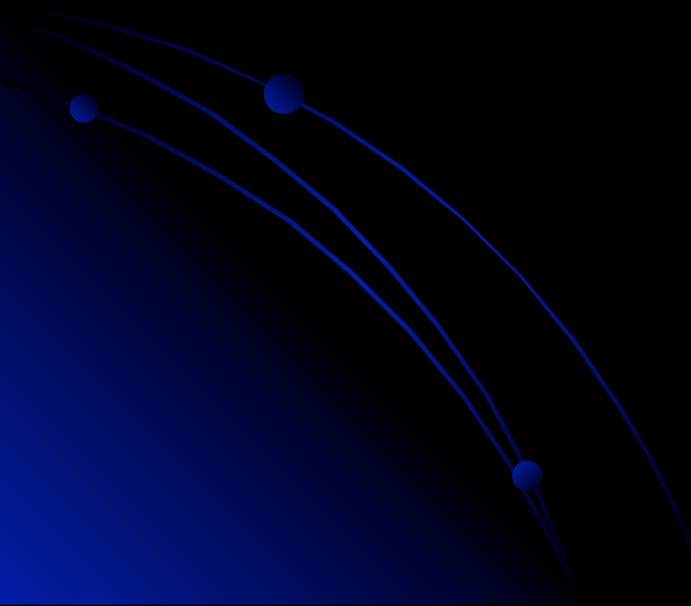
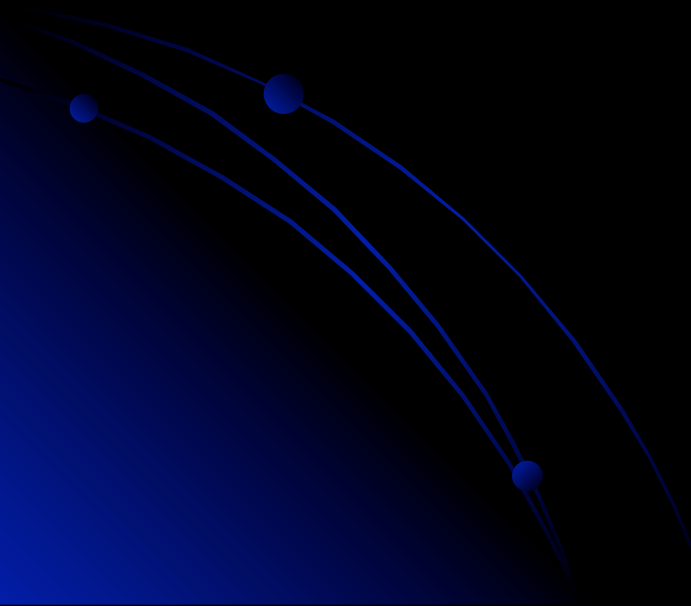


CERVICAL SPONDYLOSIS & CERVICAL DISC DISEASE



Cervical spondylosis

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



Pathophysiology

- Deseccation 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

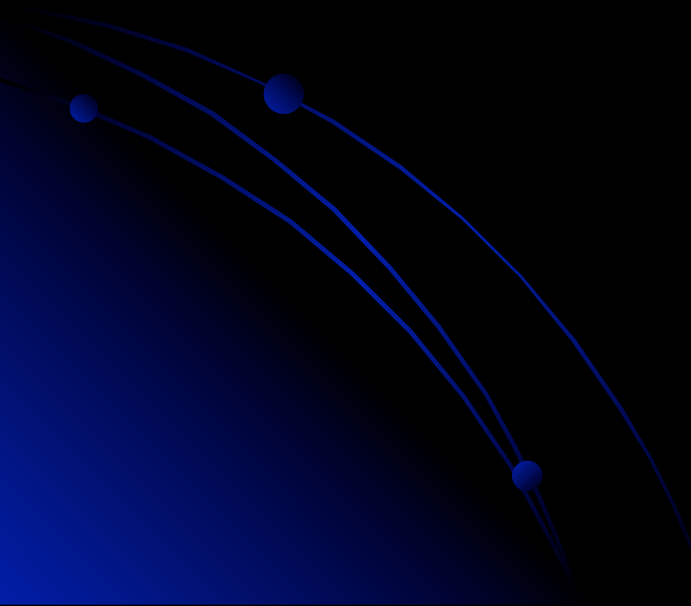
- Congenital spinal canal stenosis
- Disc herniation
- Vertebral body osteophytes
- Hypertrophied ligamentum flavum
- Ossified posterior longitudinal ligament

Dynamic Factors

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


Clinical Presentation

- Neck pain
- Cervical Radiculopathy
- Cervical Myelopathy



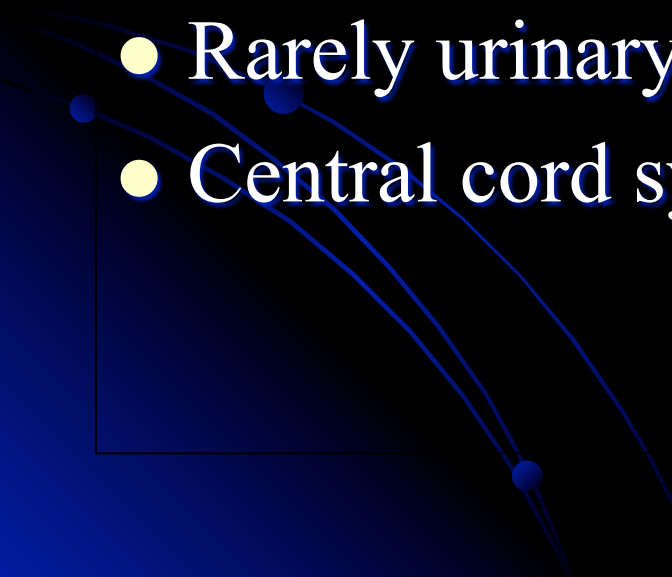
Signs and Symptoms

Radiculopathy

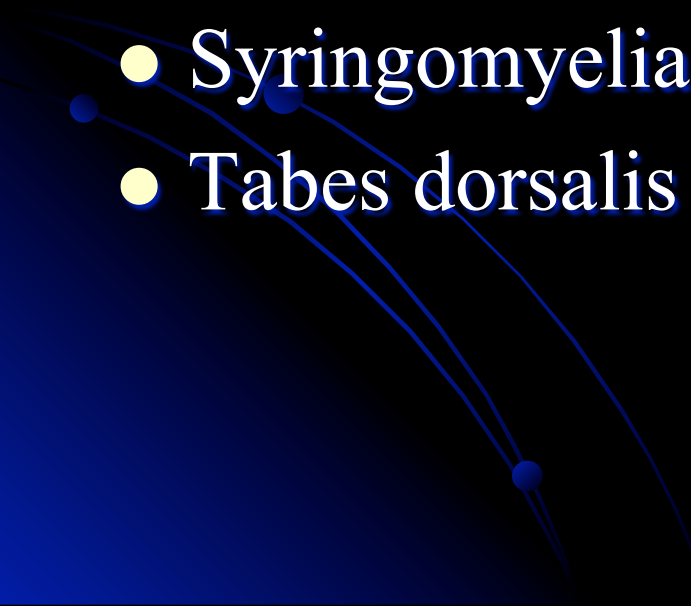
- Radicular pain
 - Weakness limited to particular myotome
 - Sensory loss
 - Absent or decreased DTR
- 

Signs and Symptoms

Myelopathy

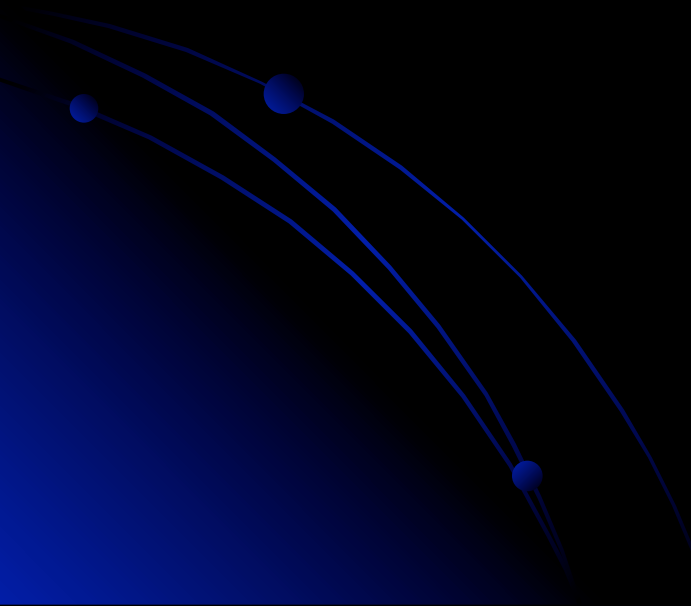
- Weakness and stiffness of legs, gait abnormality
 - Numb or clumsy hand
 - Rarely urinary incontinence
 - Central cord syndrome
- 

Differential Diagnosis

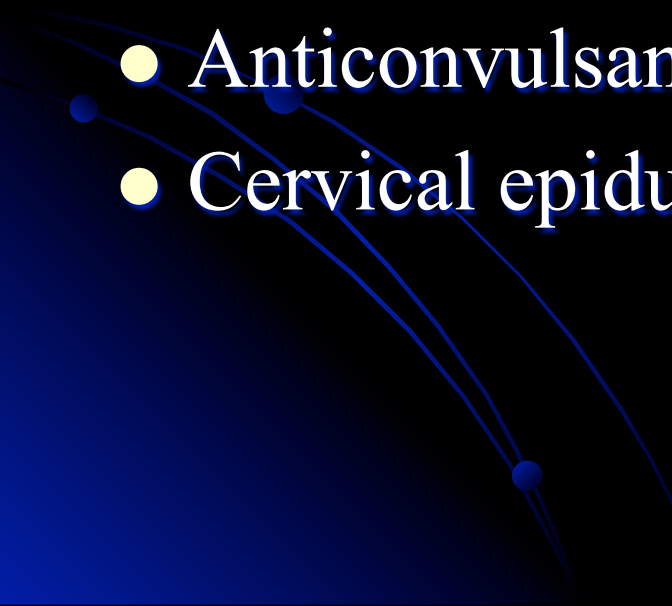
- Amyotrophic lateral Sclerosis
 - Multiple Sclerosis
 - Subacute combined degeneration of cord
 - Tumours
 - Syringomyelia
 - Tabes dorsalis
- 

Radiographic Studies


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



Medical Management

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

Nonpharmacological Nonoperative therapy

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

Approach to a patient with neck pain

- NSAID's
- Isometric Neck Exercises
- Physical therapy

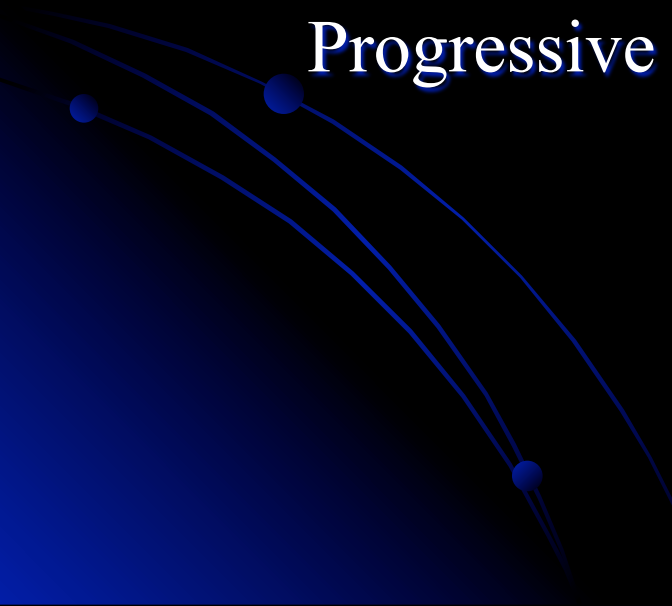
- Surgery - Fusion



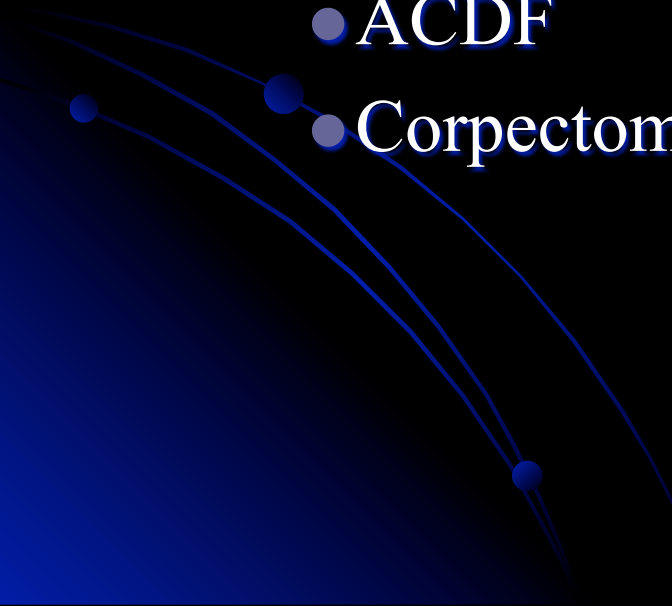
Approach to a patient with cervical radiculopathy

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

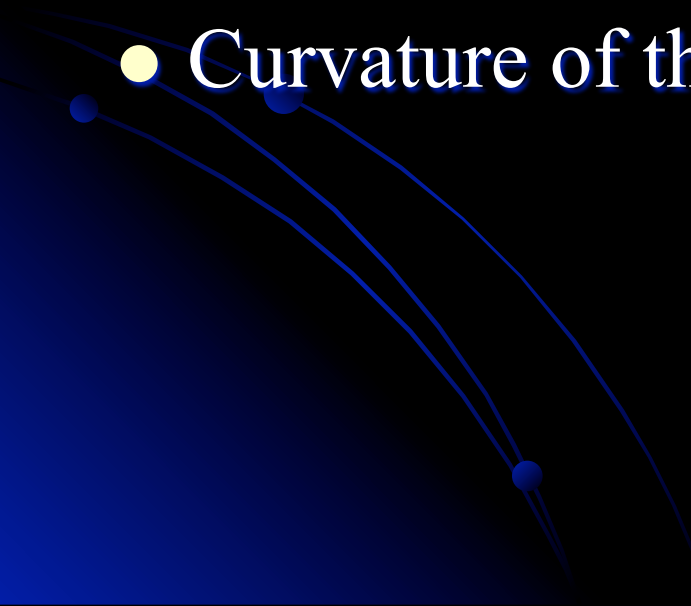
Approach to a patient with CSM

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

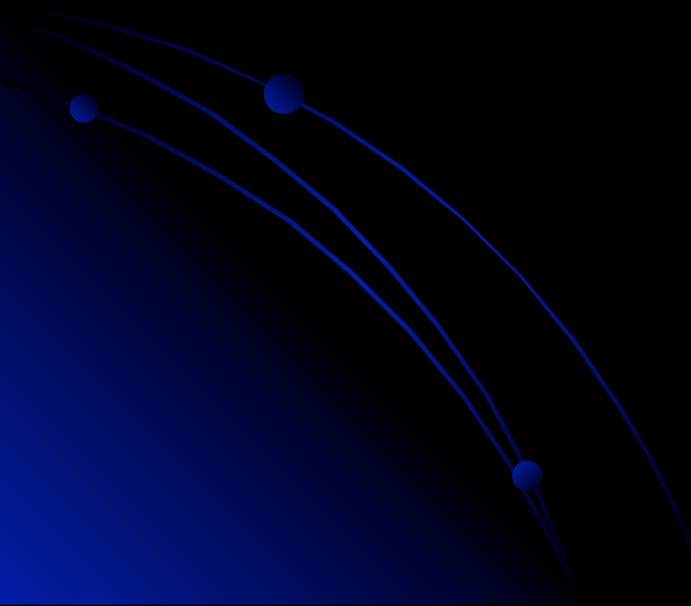
Surgical options

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

Cervical spondylosis: Ventral or Dorsal surgery

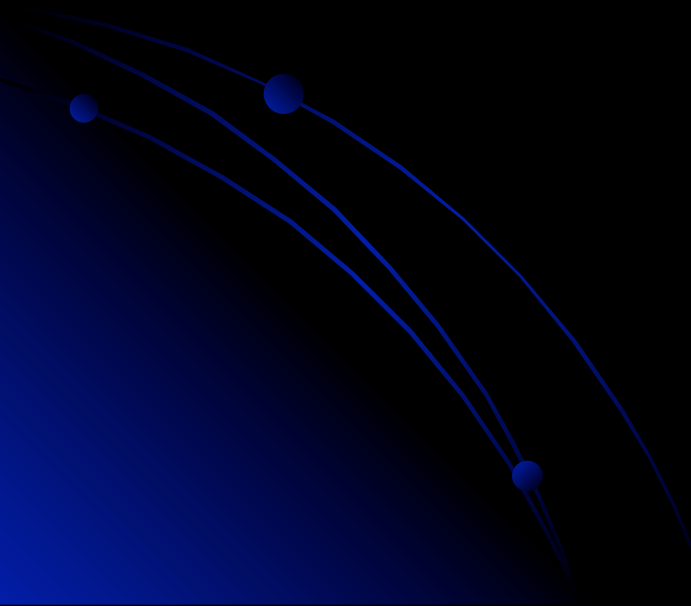
- Location of the lesion
 - Specific disease pathology
 - Number of vertebral levels
 - Age at surgery
 - Curvature of the spine
- 

Laminectomy: Operative technique

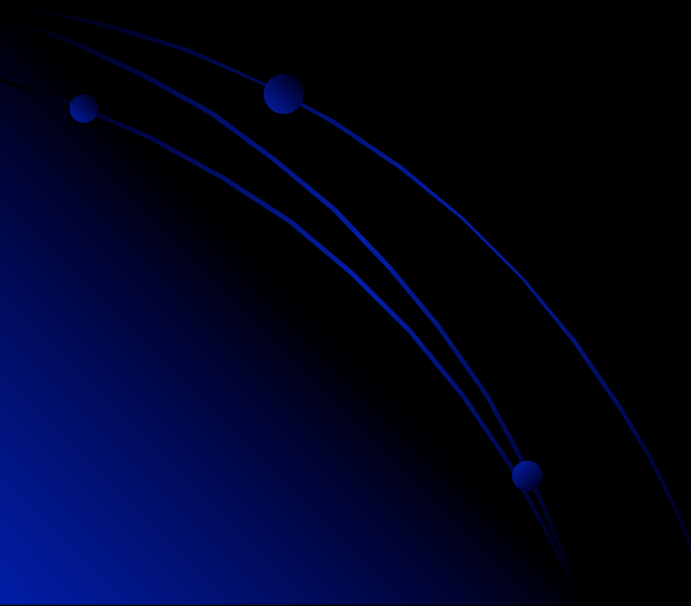


Complication of Laminectomy

- Post Laminectomy Kyphosis
- Instability
- Post laminectomy membrane



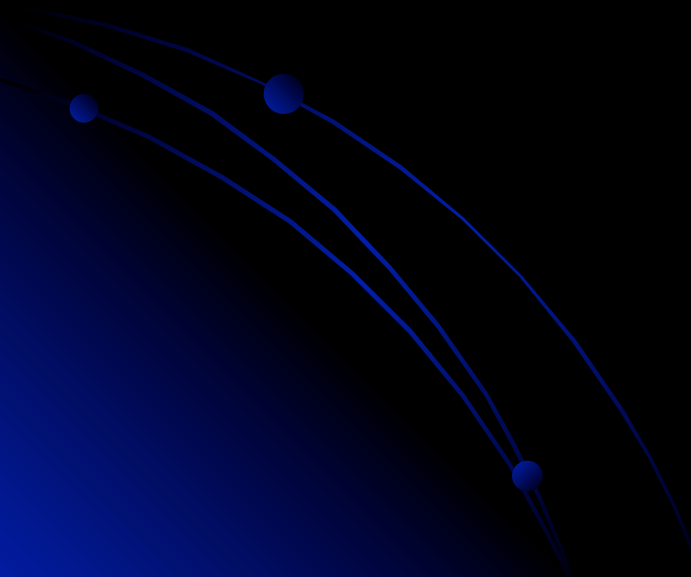
Laminoplasty: operative technique



Ventral procedures for Cervical Spondylosis

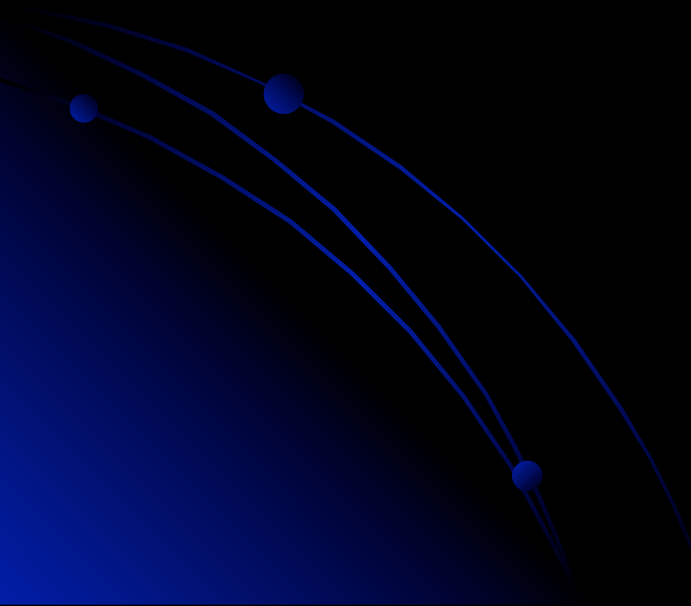
- **Indications**

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

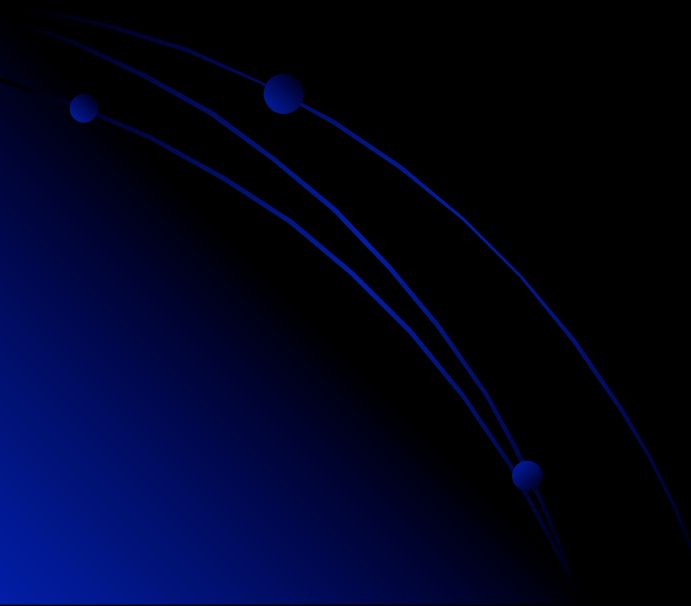
- Degeneration limited to disc
- Cervical spondylosis with radiculopathy

Techniques

- Smith-Robinson
- Cloward
- Bloom and Raney

Bryan Cervical Disc Prosthesis

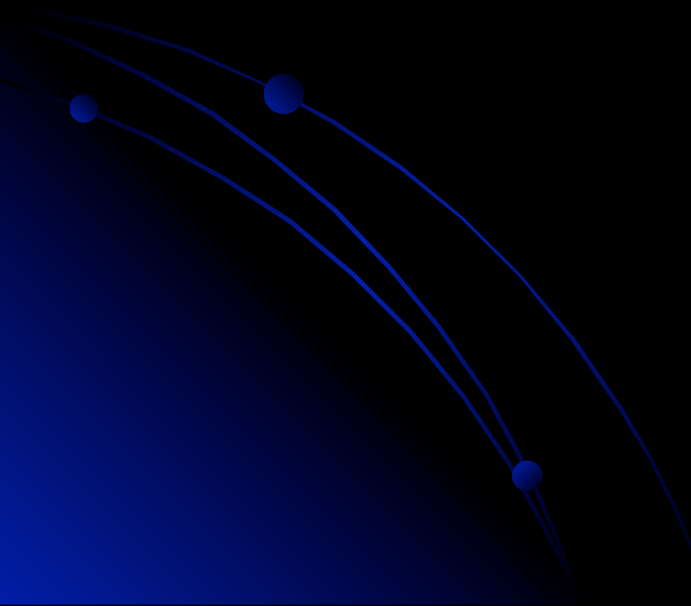
- Polyurethane wrapped low friction, water resistant elastic nucleus located between and articulating with two titanium alloy surfaces.



Cervical corpectomy

Aims:

- Ventral decompression
- Interbody fusion
- Plate osteosynthesis

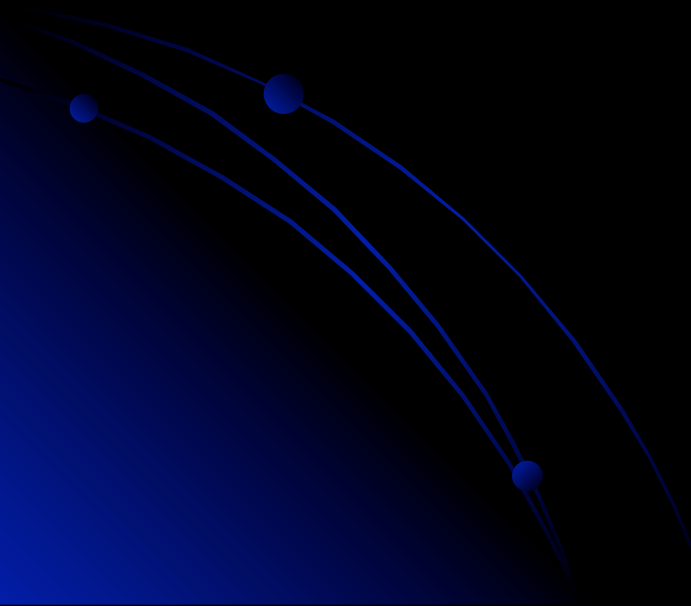


ACDF with Vs without Plating

- 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

