

Cervical and Upper Limb Pain

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Oaks Hospital

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Neck Pain





Aim

Confidence in managing spinal problems in
primary care

Aims

- Indications for Referral
- “Red Flag Signs”
- Indications for Surgery

Cervical Degenerative Disease

- Axial neck pain – non-specific
- Nerve root compression and radiculopathy
- Spinal cord compression- myelopathy

Demographics Neck Pain

- 50% adults
- 95% simple mechanical pain
- 5% underlying disease/ neuro impairment
- Large cause of loss of disability adjusted life years
- Cost up to £1 billion Whiplash Claims and lost production per year

Neck Pain Guidelines

- NICE Guidelines - 2018
 - Non-specific neck pain
 - Neck pain – cervical radiculopathy/myelopathy
- Rheumatology
 - Ref: Neck pain management in primary care Series 6 Spring 2011

Risk Factors

- Age
- Gender
- Smoking
- Lack Physical Activities
- Poor Posture
- Anxiety/ Depression
- Psychological Health
- Workers / Occupational

Non-Specific Neck Pain

The background of the slide is a dark blue MRI scan of a cervical vertebra, showing the bony structures and the intervertebral discs in a cross-sectional view.

- Acute torticollis
- Cervical Spondylosis
- Radiculopathy (pain radiating down arm)
- Whiplash Associated Disorder
- Headaches (cervicogenic)

Mechanical Neck Pain



Differential Diagnosis - Mechanical

- Cervical strain
- Degenerative (disc, facet)
- Herniated disc
- Spinal stenosis / radiculopathy/ myelopathy
- Trauma - Fracture / Whiplash
- Congenital deformity
- Thoracic outlet syndrome

Demographics Radiculopathy

- Male – 107 in 100,000
- Female – 64 in 100,000
- Average age 50-54 years
- 88% improve within 4 weeks

Assessing Neck Pain

- Exclude non-musculoskeletal causes
- **Assess red flags**
- Assess range of motion
- Perform neurological examination
- Identify risk factors
- Identify psychological factors

Red Flags/Urgent Review



Red Flags

- New symptoms below 20yrs or above 55yrs
- Constant, progressive, non-mechanical pain
- Neurological symptoms
 - Gait disturbance
 - Clumsy or weak hands
 - Lhermitte's sign
 - Bladder/bowel/sexual disturbance

Differential Diagnosis - Nonmechanical

- Neoplasia
 - Multiple myeloma
 - Metastatic CA
 - Lymphoma , leukaemia
- Infection
 - Osteomyelitis
 - Septic discitis
 - Abscess
- Inflammatory arthritis
- Neurological – MS,MND

Suspicion of tumour or infection

- PMH cancer
- Unexplained weight loss
- Symptoms suggestive of malignancy
- Unwell/ feverish
- Raised inflammatory markers
- Age <20yrs or age >55yrs
- Cervical pain, persistent non-mechanical
- Possible immunosuppression

“Red Flags”

- **Neurologic deficit** (myelopathy or radiculopathy or both)
- **Suspected tumour or metastatic disease** (**History of malignancy**)
- **Suspected fracture** (significant trauma, steroid use, osteoporosis)
- **Suspected vertebral infection** (fever, immunocompromised, raised lab values)

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Investigations

- Urine – Bence Jones Proteins
- Blood – Electrophoresis, Clotting, U&E's, FBC, LFT's, Rheumatoid Screen, ESR, CRP
- Radiology
 - X - ray
 - CT chest (lung mets)
 - MRI whole spine
 - USS – abdomen (visceral mets)
 - Bone scan
 - Biopsy

Metastasis to spine

- Metastasis 40 times more common than 1^o
- Usually arterial haematogenous spread
- Most common tumour of spine in child
 - Leukaemia (child); neuroblastoma (infant)
- Most common tumour of spine in adult
 - Breast / lung (thoracic) and prostate (lumbar); any tumour

Spine - Infection



The background of the slide is a dark blue, monochromatic image. It features a dynamic splash of water at the top, with several droplets and a large, central plume of water. Below the splash, a large, circular ripple pattern is visible, resembling a stone dropped into a pond. The overall aesthetic is clean and professional, with a focus on fluid motion and light reflection.

Clinical Assessment

INSPECTION



- Affect
- Posture /Alignment
- Gait – wide based
- Skin
- Muscle wasting

PALPATION

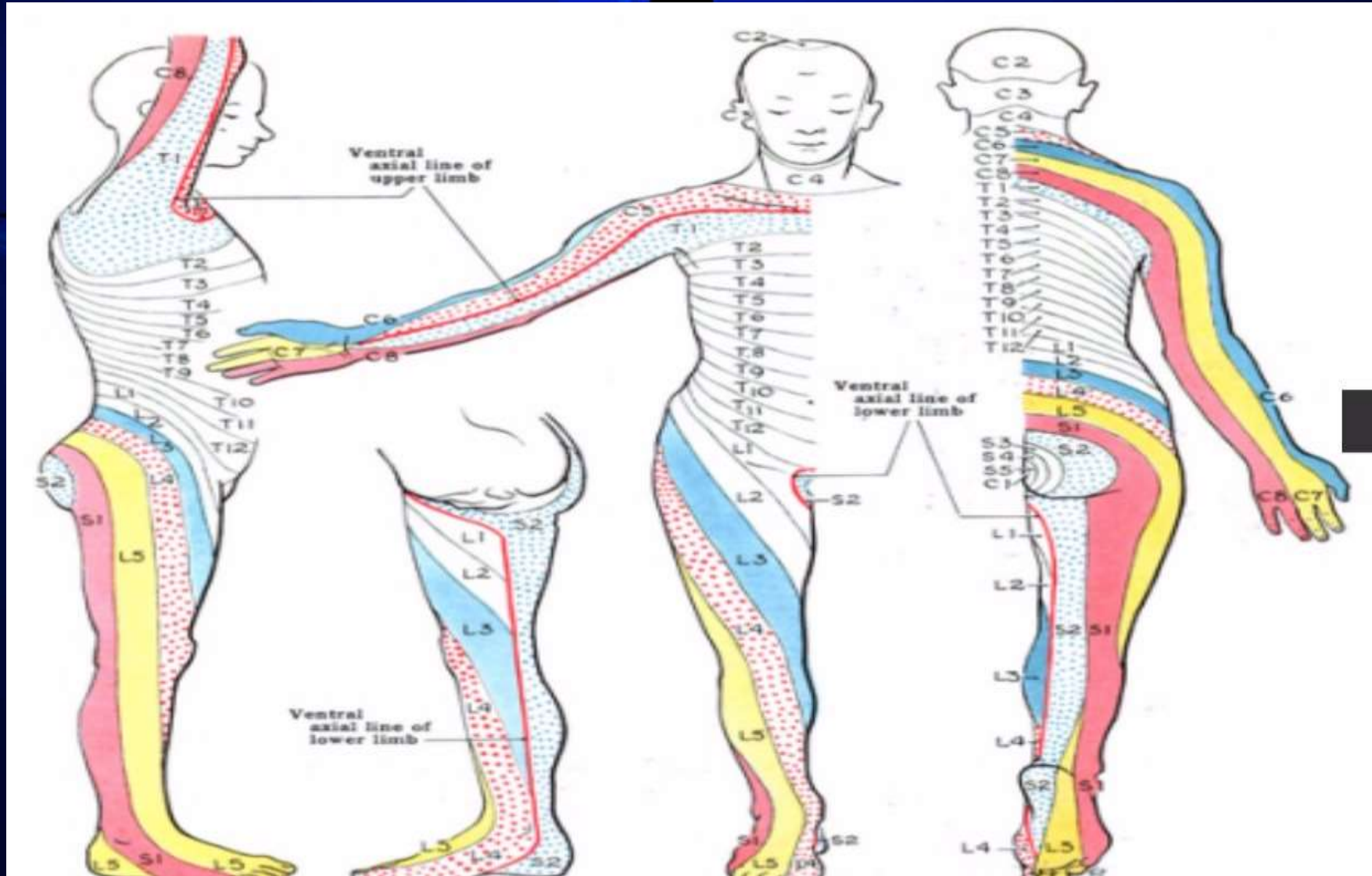


PALPATION



- Centre line/spinous processes – Pain suggests vertebral body pathology
- Lateral to the centre/paraspinal regions – Pain suggests muscle strain of the paraspinal muscles

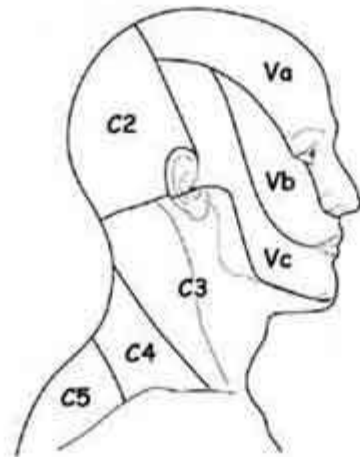
SENSATION



Dermatomal Distribution

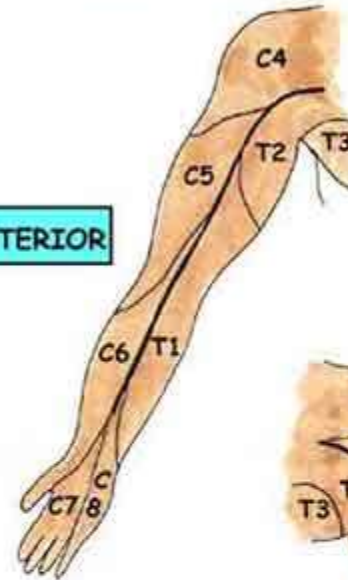
DERMATOMES & NAMED SKIN NERVES

See under head and neck nerves, somatic, cervical plexus and also under the individual branches of the trigeminal nerve in the cranial nerve section of nerves. See also in nerve section of Instant Anatomy

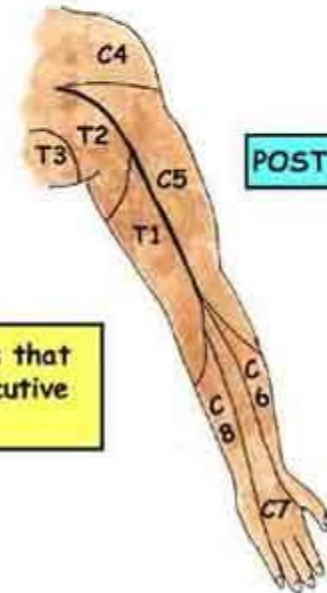


UPPER LIMB DERMATOMES

ANTERIOR

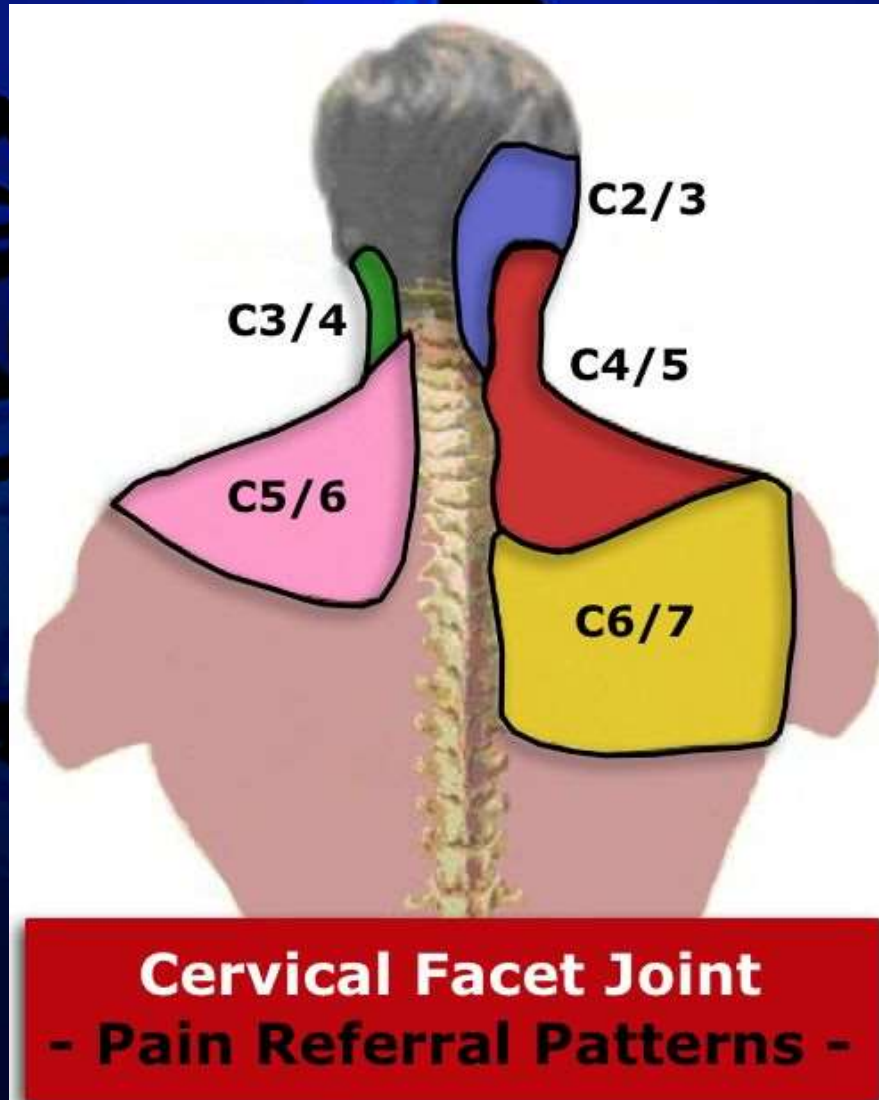


POSTERIOR



Note the axial lines that separate non consecutive dermatomes

Facet Joint Pain / Referred Pain



Motor Dysfunction

- Compression of a specific nerve root
 - C5 – Deltoid , biceps
 - C6 – Wrist extensors
 - C7 – Triceps
 - C8 – Finger flexors
 - T1 – Interossei

Lower motor neuronal dysfunction:

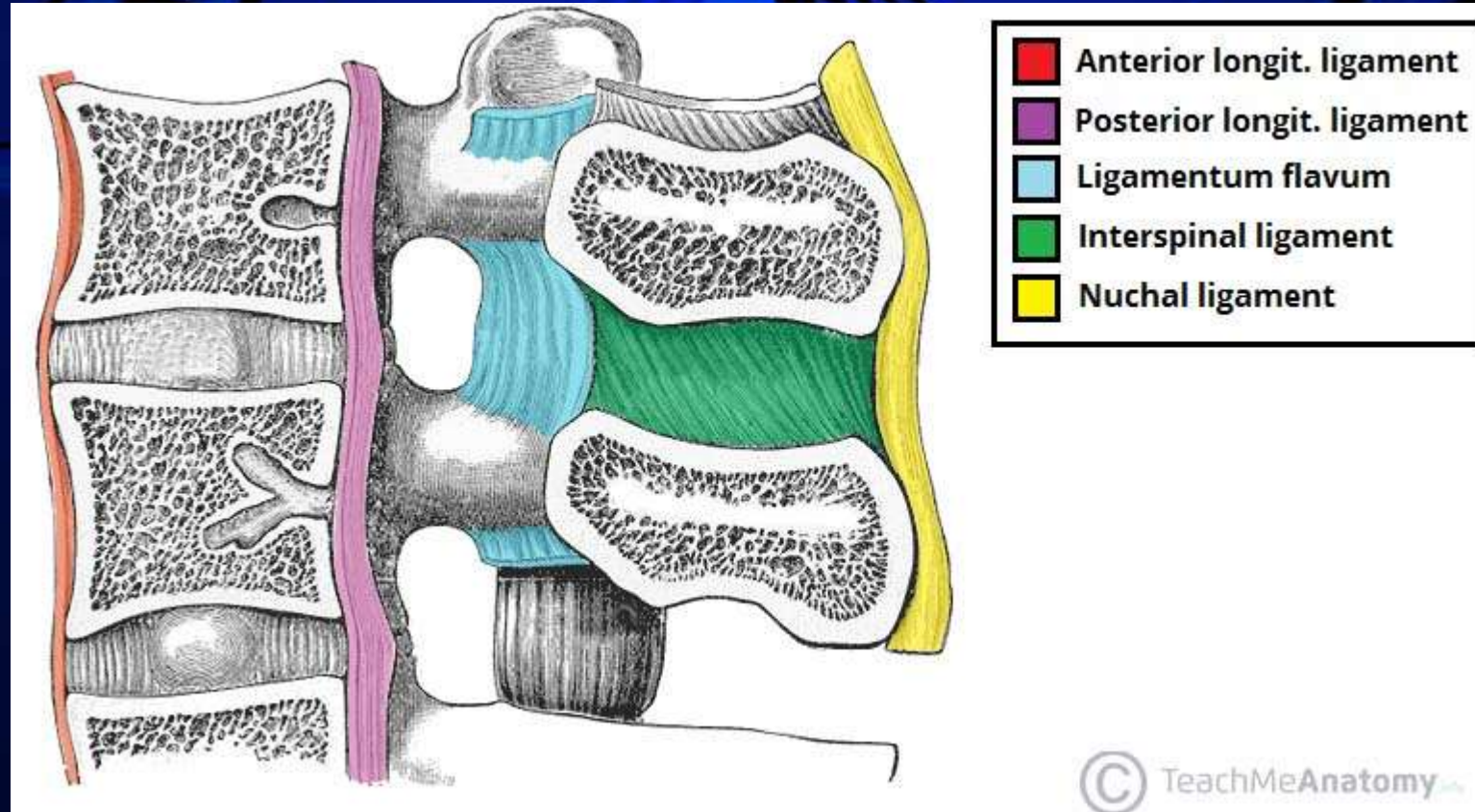
- Decreased tone
- Atrophy
- Hyporeflexia

Essential Referral Information



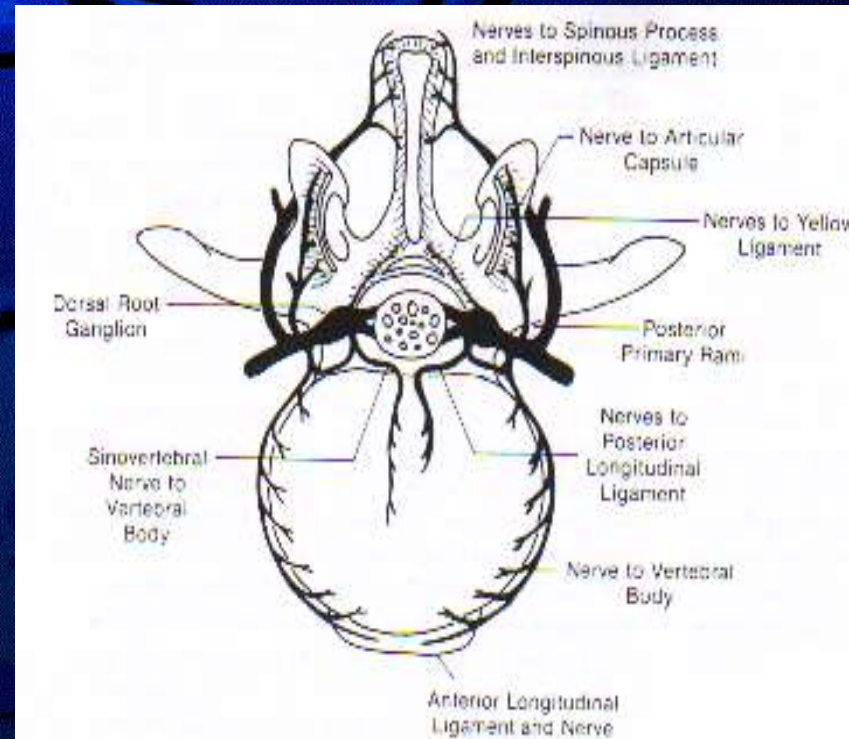
- Medical history and medication
- Past history of back pain
- Current pain pharmacology - analgesics
- Social and work impact

Cervical Anatomy

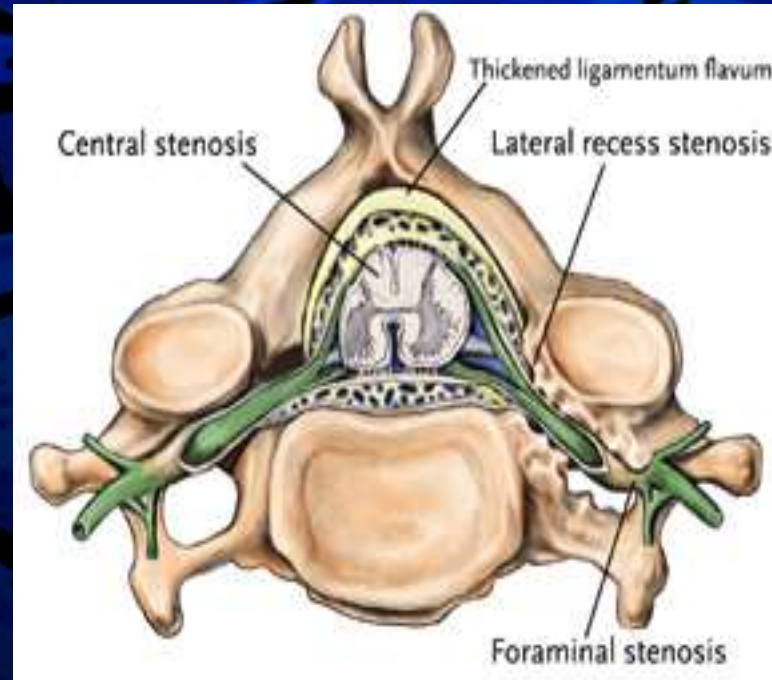


PAIN GENERATORS

- Intervertebral discs
- Ant / posterior longitudinal ligaments
- Facet joints
- Nerve roots



Degenerative Changes – location



Disc Herniation



Herniated Disc





Consequences

Radiculopathies

Radiculo-myelopathies

Myelopathies

Radiculopathy

A sagittal MRI scan of a lumbar vertebra. The image shows the vertebral body, intervertebral discs, and the spinal canal. A prominent disc herniation is visible, extending posteriorly and compressing the spinal nerve root. The surrounding soft tissue structures, including the ligaments and muscles, are also visible.

- Degeneration
 - Uncovertebral joint
 - Facet joint

Radiculopathy & Myelopathy

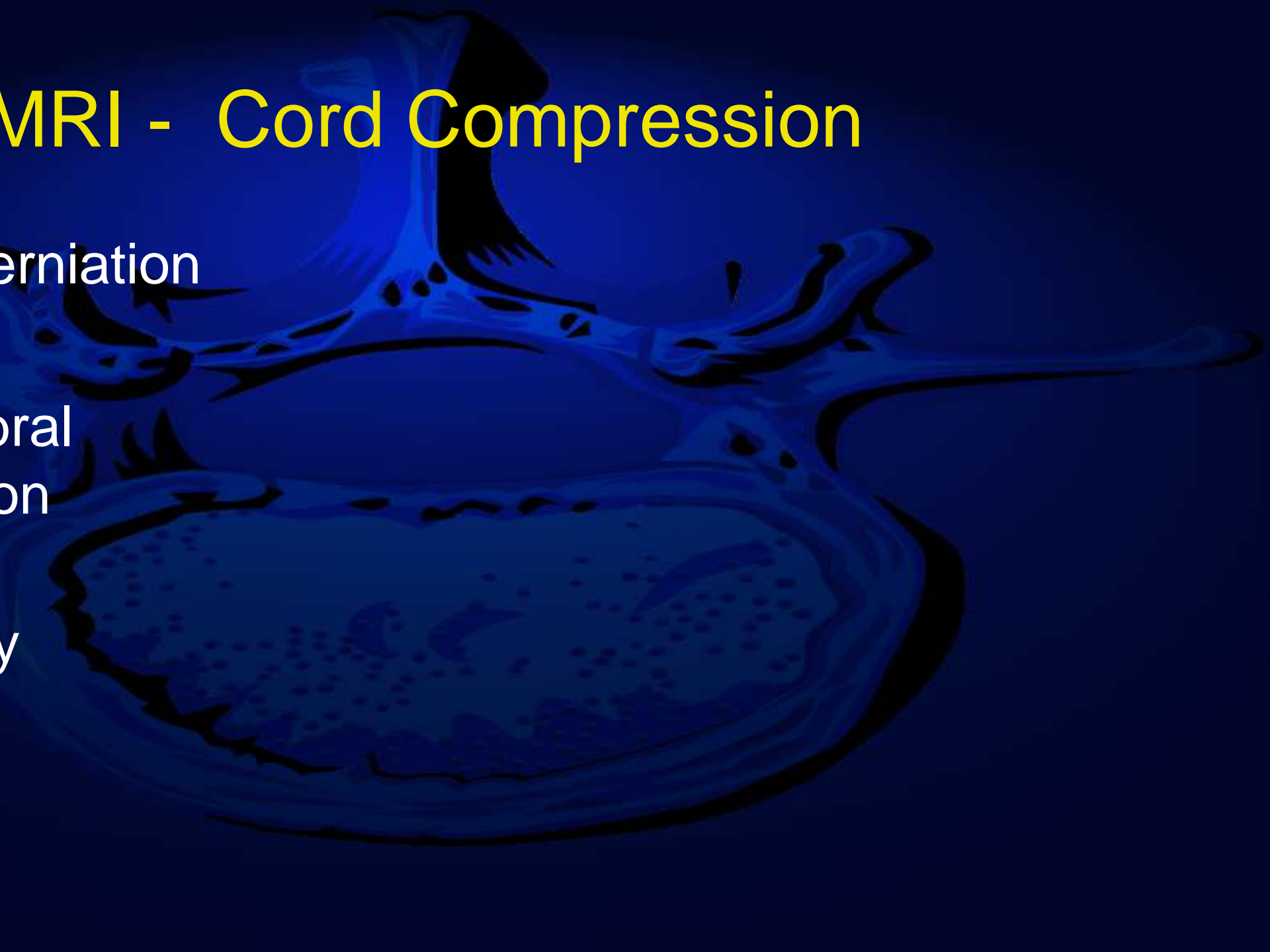


Myelopathy – clinical signs

- Upper extremity motor weakness > than lower
- Ataxia – broad based , shuffling gait
- Little finger abduction – “finger escape sign”
- Level of the lesion- Lower motor neuron dysfunction
- Below lesion – Upper motor neuron dysfunction
 - Babinski`s sign
 - Hoffmann`s sign
 - Clonus

MRI - Cord Compression

- Soft disc herniation
- Hard disc
- Uncovertebral degeneration
- Ligament hypertrophy

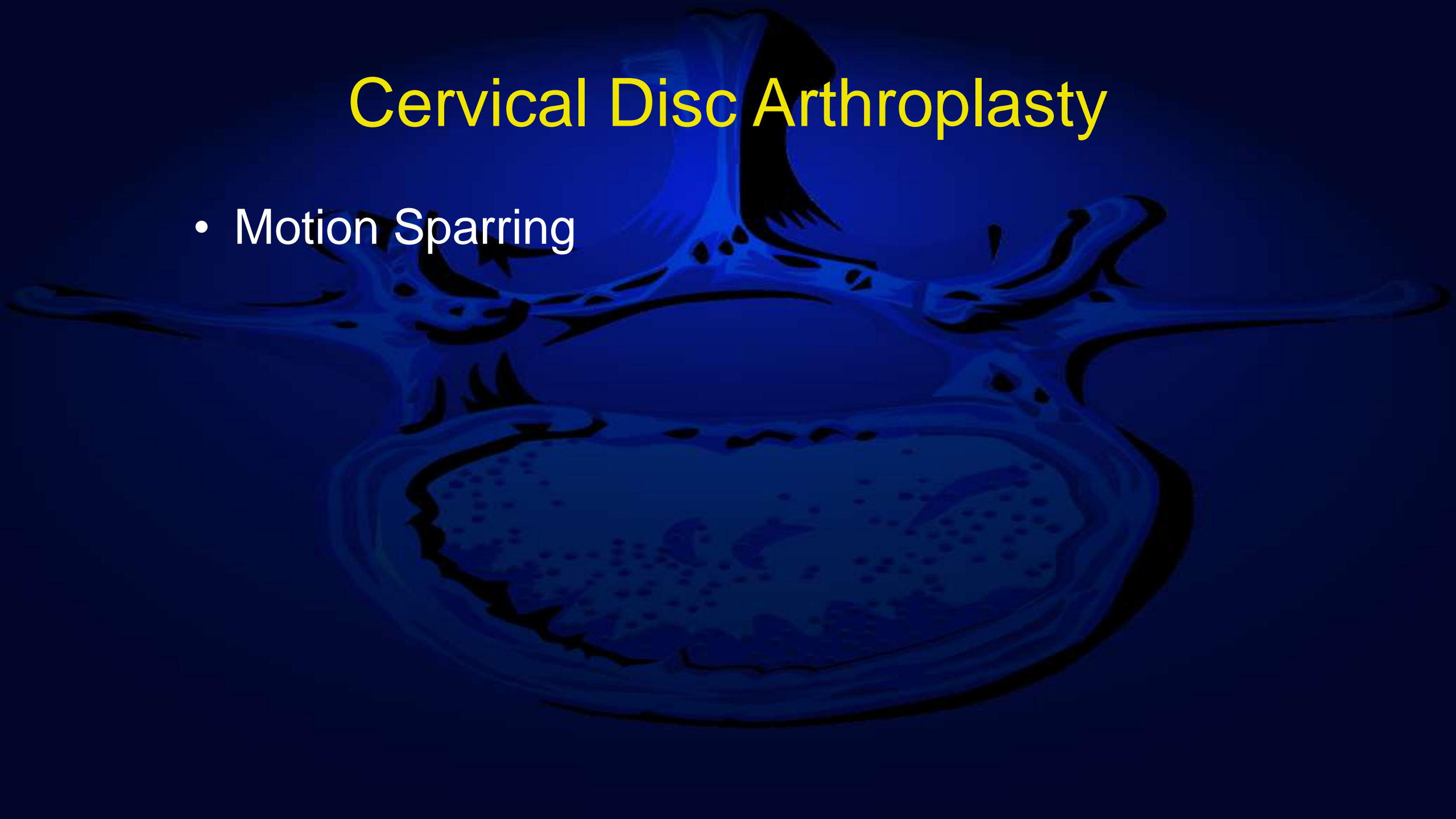


Surgical Intervention

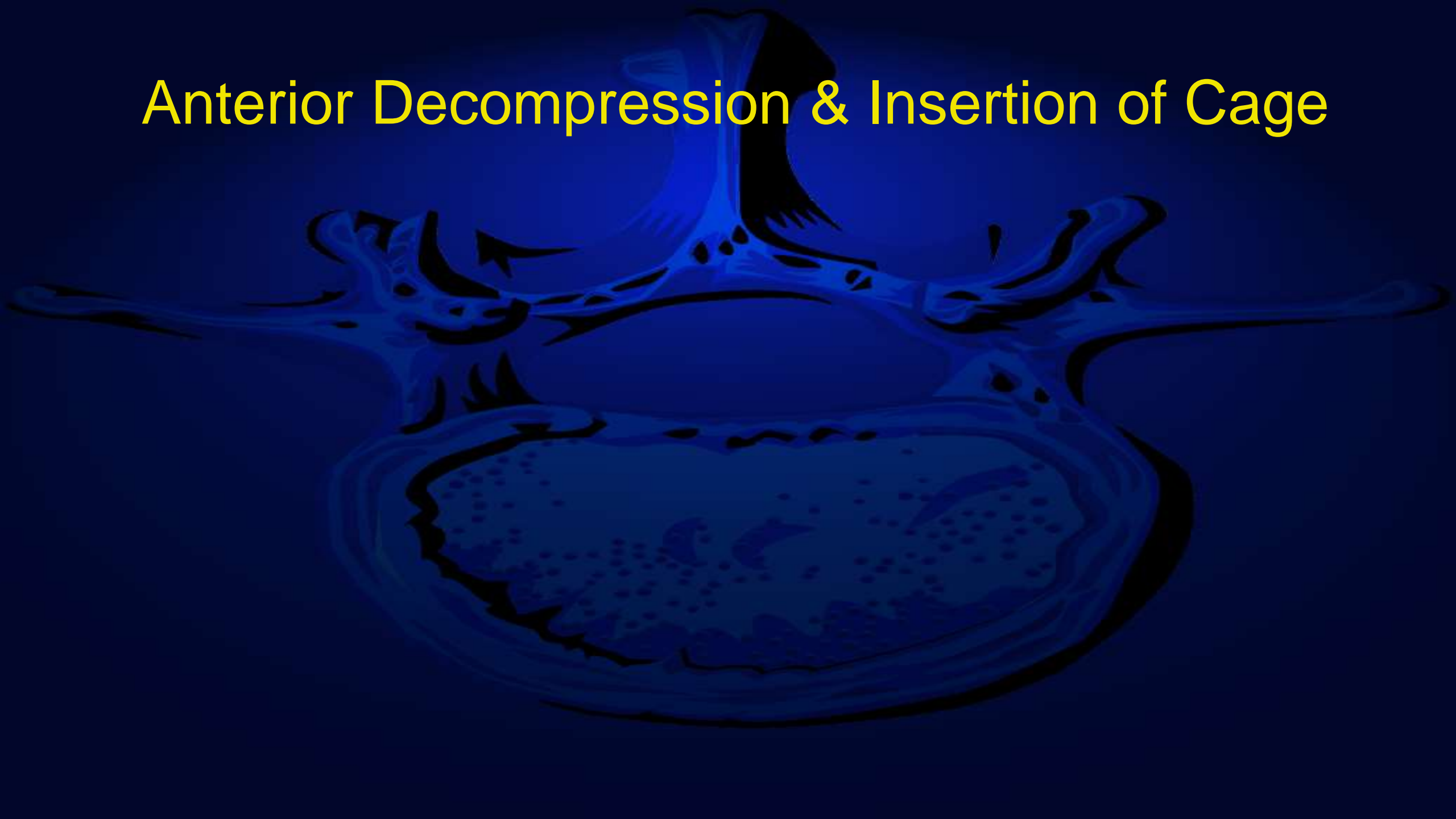


Cervical Disc Arthroplasty

- Motion Sparring



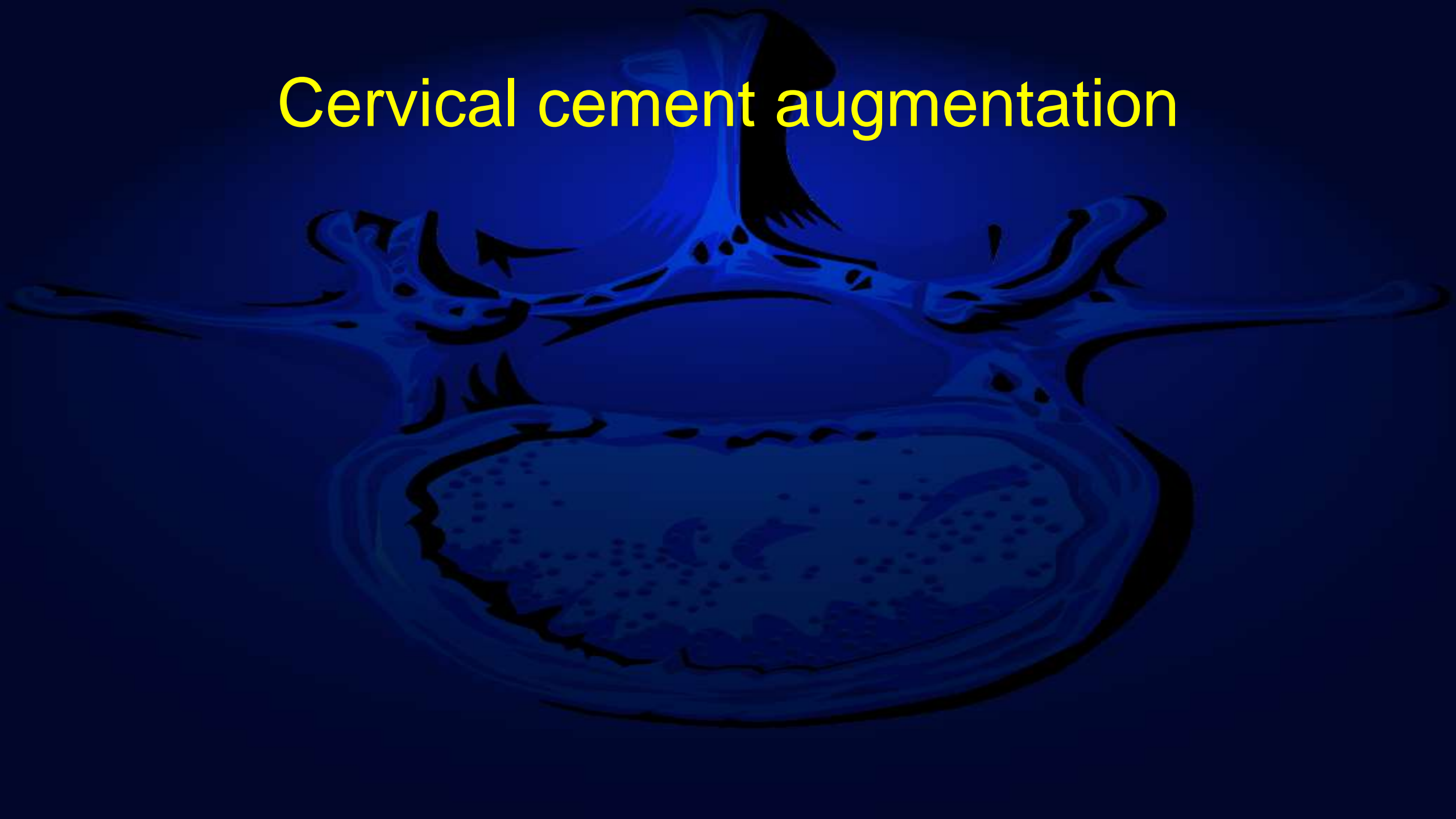
Anterior Decompression & Insertion of Cage



Posterior Decompression:
Laminectomy / laminoplasty



Cervical cement augmentation



A blue-tinted image of a water splash, with the word "Summary" written in yellow text in the center. The splash is captured in a dynamic, mid-air moment, with water droplets and ripples visible. The background is a solid dark blue.

Summary

Summary - Neck Pain

- Very common
- Related to poor posture
- Serious structural injury/ instability is unlikely
- **SELF MANAGEMENT IS THE KEY**
- Remain active/ avoid immobilisation
- Clinical management is important
- Don't X-ray for non-specific neck pain

Summary - "Red Flags"

- **Neurologic deficit** (myelopathy or radiculopathy or both)
- **Suspected tumour or metastatic disease (History of malignancy)**
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THE END

