CERVICAL SPONDYLOSIS

Pathogenesis

The canal diameter is reduced by

1. Osteophytes, thickened ligamentum flavum, protruded disc
2. Hyperextension of the spine reduces the canal diameter by shingling effect of lamina and buckling of Ligamentum flavum
3. Retrolisthesis with extension
4. Hypermobility in the level above degenerated disc can cause myelopathy
5. Vascular compromise in spondylosis may cause myelopathy

Disc is innervated by sinu-vertebral nerve formed from ventral nerve root and sympathetic plexus. This nerve turns back at intervertebral foramen and supplies: annulus fibrosus, posterior longitudinal ligament, and periosteum of the vertebra

Clinical

1. Axial Pain patterns proved during discography at each level

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<tbody>
<tr>
<td>A</td>
<td>Level between</td>
<td>C2-3</td>
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<tr>
<td>B</td>
<td>“</td>
<td>C3-4</td>
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<tr>
<td>C</td>
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<td>C4-5</td>
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<td>D</td>
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<td>C5-6</td>
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<tr>
<td>E</td>
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<td>C6-7</td>
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Look for trigger points. Pain is more on extending the neck.
2. Red flags: Night pain
   Persistent pain > 3months
   Any associated primary tumour
   Weight loss and sweat

3. Referred or radicular pain
   C6 to the thumb,
   C7 to the middle finger
   C8 to the little finger

C6 nerve root exist between C5-C6 vertebra. At cervical spine, both disc herniation and stenosis affect the exit root [In the lumbar region, transit root is involved in disc herniation]

If more than one nerve root involvement: rule out myelopathy
Sometimes, the pain can be referred to heart lungs and TMJ joint from Cervical spondylosis

4. Spurling’s manoeuvre: Extension and lateral rotation to the side of pain [refer clinical examination]

**Differential diagnosis for radiculopathy**

Peripheral entrapment syndrome
Rotator cuff syndrome
Brachial plexitis and herpes
Spinal tumours
Cardiac ischemia

**Investigations**

X rays AP, Lateral, Flexion-extension lateral
MRI is gold standard
Myelopathy

Types
1. Transverse lesion syndrome: Corticospinal tract, Spinothalamic tract, Post Cord syndrome
2. Motor system syndrome: Cortico-spinal tract and Anterior horn cell
3. Central cord syndrome: Upper extremity involvement is more than lower extremity
4. Brown Sequard syndrome
5. Brachialgia and cord syndrome.

Clinical

Neck pain is seen in 50%
Clumsiness of hand and lower limbs
Worsening hand writing
Difficulty in balance
Gait abnormality
Able to walk only with assistance
Patient will have upper motor lesion findings in the lower limbs
Lhermitte sign is positive in 25%
Radicular symptoms is seen in 35%
Sphincter disturbance in 40%

Myelopathy hand
- Diffuse numbness of the hand
- Marked wasting

Lhermitte sign: shock like sensation in the torso and limbs resulting from quick flexion or extension of the neck

Finger escape sign: Forearm in pronation, palm facing down. When the patient is asked to fully extend the digits, the ulnar finger drift to flexion and abduction

Grip and release test: Decrease ability to rapidly open and close the fist
**Atypical cervical spondylosis**

1. Cervical angina: Mimics coronary disease; Chest or breast pain
2. Proliferative osteophytes causing dysphagia
4. Sympathetic chain involvement: Dizziness, blurring of vision, tinnitus and retro-ocular or Jaw pain

**Differential diagnosis**

Cervical Myelopathy, Peripheral neuropathy, MND, Multiple sclerosis, CVA, Syringomyelia

**Treatment**

1. Nonoperative: NSAID, Moist heat, Physiotherapy
2. Surgical
   - Anterior decompression
   - Anterior carpectomy
   - Posterior decompression
   - Posterior Laminotomy