

Cervical Myelopathy



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Cervical Myelopathy: Spinal cord dysfunction due to narrowing of the spinal canal and compression of the cord.

Risk factors:

- Cervical spondylosis (most common)
- Cervical rheumatoid arthritis
- Congenital spinal canal stenosis
- Spinal tumours/infections
- Whiplash injury

Pathophysiology (in cervical spondylosis):

- Degenerative changes which develop with age, including ligamentum flavum hypertrophy, facet joint hypertrophy, disc protrusion & osteophyte formation
- A single or combination of these alterations contribute to an overall reduction in the cervical canal diameter which may result in cord compression
- Myelopathic symptoms are due to compression of long tracts in the spinal cord
- Normal diameter of cervical spinal canal = 17-18mm → average diameter of the cervical spinal cord is 10mm → If the diameter of the spinal canal falls below 12-14mm = myelopathic symptoms
- Normally, signals in the long tracts suppress spinal reflexes → prevents hyperreflexia
- Long tract damage leads to loss of spinal reflex inhibition → positive Hoffman's or Babinski sign
- If cord compression is severe → sphincter dysfunction & quadriplegia

Presentation

Upper cervical myelopathy:

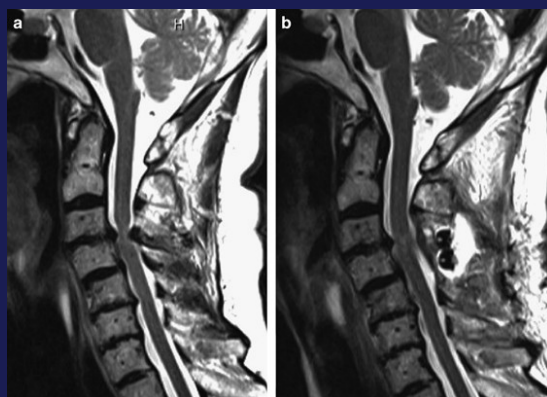
- Loss of manual dexterity eg. writing
- **Dysdiadochokinesia** - impaired ability to perform rapidly alternating movements
- Non-specific alteration in arm strength & sensation

Lower cervical myelopathy:

- Spasticity +/- clonus
- Loss of lower limb proprioception
- Sensation of lower limb heaviness & reduced exercise tolerance
- **Gait disturbance** & multiple falls

Diagnosis

- Lower limb weakness
- Weak grip strength
- Positive **Romberg test**
- Loss of sense of proprioception, light touch, pain or vibration
- Difficulty performing tandem gait
- Positive **Lhermitte sign** - cervical flexion causes electric shock-like sensations that radiate down the spine and into the extremities
- X-Ray - shows degenerative changes with cord compression
- MRI - shows degree of spinal cord and nerve root compression



Management

- **Strengthening exercise** - cervical stabilisation exercise with flexion bias & dynamic upper/lower limb exercises
- **Balance training** exercises with focus on challenging proprioceptive system
- Static and dynamic cervico-thoracic **postural correction**
- **Proprioceptive neuromuscular facilitation (PNF)** - cervical flexion and extension pattern may improve cervical range of motion & decrease upper limb paresthesia
- **Medication** - NSAIDs or gabapentin
- **Surgery** - surgical decompression, restoration of lordosis, stabilisation

Want to learn more?

With AcePhysio the learning journey doesn't stop here! Take a look at our further reading recommendations below to become an expert in Cervical Myelopathy:

1. Fehlings MG, Tetreault LA, Riew KD, et al. A clinical practice guideline for the management of patients with degenerative cervical myelopathy: recommendations for patients with mild, moderate, and severe disease and nonmyelopathic patients with evidence of cord compression. *Global Spine J* 2017;7(Suppl):70S-83S
2. Almeida GP, Carneiro KK, Marques AP. Manual therapy and therapeutic exercise in patient with symptomatic cervical spondylotic myelopathy: A case report. *Journal of bodywork and movement therapies*. 2013 Oct 1;17(4):504-9