



Dr. Cyriac- Degenerative Cervical Myelopathy

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Case: 68 yo M who presents to clinic with a 5 year progression of neck pain and clumsiness of his hands

Epidemiology/Pathophysiology

- ❖ Leading cause of spinal cord dysfunction
- ❖ Causes include spinal canal stenosis (primary or secondary), disc bulging, osteophyte formation, ligament hypertrophy and calcification. Trauma, tumor and abscesses are also causes that may be considered
- ❖ **Degenerative changes cause reduction of the cross sectional area of the spinal canal and compression of the spinal cord. Can also be caused or worsened by traumatic injury to the spinal cord (central cord syndrome).**
- ❖ Believed that this compression cause chronic ischemia, neuroinflammation, and cell death to the spinal cord which may cause long term damage

History/Physical

- ❖ **Common presenting symptoms: Neck pain, weakness or numbness in the upper limbs, clumsiness, weakness or numbness in the lower limbs, gait imbalance**
- ❖ Look for hyper-reflexia, clonus, **positive Hoffman sign**, upgoing plantar response, lower limb spasticity, **hand intrinsic atrophy**, and broad based **unstable gait on physical exam**
- ❖ Diagnosis requires agreement between clinical and imaging findings



Imaging

- ❖ **MRI is the modality of choice to assess for cervical myelopathy**
 - **Able to evaluate degenerative changes, decrease in the diameter of the spinal canal, identify compression of the spinal cord, and also detect signal intensity changes within the spinal cord.**
 - CT imaging is useful when MRI is contraindicated
- **C-Spine Xray**
 - Often see degenerative changes of the vertebrae (spurring, osteophytes, etc), spondylolisthesis. Can also evaluate for spinal alignment and stability as well.

Classification

Table 1 | The modified Japanese Orthopaedic Association scale

Type of dysfunction	Level of dysfunction	Score
Motor dysfunction, upper extremity	Inability to move hands	0
	Inability to eat with a spoon, but able to move hands	1
	Inability to button shirt, but able to eat with a spoon	2
	Able to button shirt with great difficulty	3
	Able to button shirt with slight difficulty	4
	No dysfunction	5
Motor dysfunction, lower extremity	Complete loss of motor and sensory function	0
	Sensory preservation without ability to move legs	1
	Able to move legs, but unable to walk	2
	Able to walk on flat floor with a walking aid (cane or crutch)	3
	Able to walk up and/or down stairs with handrail	4
	Moderate-to-significant lack of stability, but able to walk up and/or down stairs without handrail	5
	Mild lack of stability, but walks with smooth reciprocation unaided	6
	No dysfunction	7
Sensory dysfunction, upper extremity	Complete loss of hand sensation	0
	Severe sensory loss or pain	1
	Mild sensory loss	2
	No sensory loss	3
Sphincter dysfunction	Inability to micturate voluntarily	0
	Marked difficulty with micturition	1
	Mild-to-moderate difficulty with micturition	2
	Normal micturition	3



Treatment

- ❖ The disease course is highly variable, but a **substantial number of individuals experience a progress, stepwise decline in neurologic function**

- ❖ **Non-Operative Management**
 - Cervical traction, bracing, analgesics, physical therapy, bedrest, and avoidance from contact sports and falls
 - **Low efficacy of non-operative management**
 - **Studies show up to 54% of patients who trial non-operative management require surgical intervention within 29-74 months**

- ❖ **Operative Management**
 - **Goal of operation is to alleviate compression on the cervical spine while maintaining stability of the spinal column**
 - Anterior, posterior, or combined approaches can be used
 - Posterior approaches preferred for multilevel compression from dorsal pathology
 - Anterior approaches addressing predominantly ventral compressive pathology and for restoring lordosis
 - Anterior surgeries include anterior cervical corpectomy and fusion; combined discectomy-corpectomy
 - Posterior surgical procedures usually laminectomy with instrumented fusion and laminoplasty

Nailed It Ortho podcast episode 5

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References:

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