BACK, by Popular Demand

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THIS IS MODERN MEDICINE

Cervical Radiculopathy

- Referred pain in the arm in relation to cervical nerve root compromise. Brachalgia.
- Disc or osteophyte
- Intrinsic or extrinsic tumours, infections and trauma.
- Most common level is C5/C6, C6/C7 and C4/C5 either singly or in combination
- Neck pain, Shoulder pain, Occipital headaches, Interscapular pain, Anterior chest pain, and paraesthesia in the hands
- Soft or hard disc

History of Spinal Patient

- Consider yourself as a spinal physician only 10% pts require surgical intervention
- Pain diagrams
- Diabetes, peripheral vascular disease, inflammatory arthropathies, neoplastic disease, trauma, psychiatric disorders and compensation.
- Nerve entrapment syndromes example carpal tunnel
- Double crush

Approach

- Spinal pain with or without radiation
- Nature of pain
- Neurological deficit
- Type of deficit
- Presence of systemic symptoms and signs

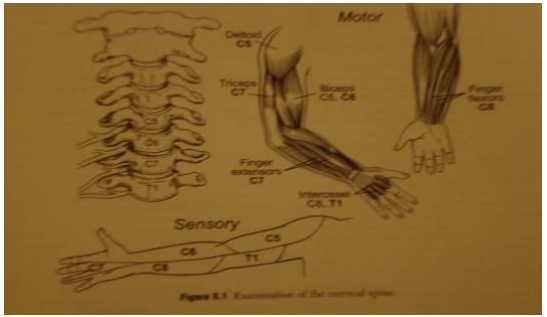
Gait Abnormalities

- Wide based unsteady gait for myelopathy
- Cerebellar disease- Close the patients eyes
- Scissors gait
- Shuffling gait

Range of Motion Testing and Palpation

- Palpation for posterior tension band and bony tenderness and ROM
- Facial numbness, vertigo and visual symptoms with motion indicate vertebral artery involvement.
- Extension and rotation of the head can cause nerve root compromise ie Spurlings test
- Hawkins test and inability to rotate the arm
- Flexion causes cord compression ie L'hermitte's sign

Clinical Examination for Cervical Radiculopathy



DISC HERNIATION	AFFECTED ROOT	MOTOR TEST	SENSORY TEST	REFLEX
C4/C5	C5	Shoulder abd	Lateral deltoid	Biceps
C5/C6	C6	Elbow Flex Wrist ext	Lateral forearm Thumb	Supinator and biceps
C6/C7	C7	Elbow Ext Finger Ext	Middle finger	Triceps
C7/T1	C8	Finger Flex Hand intrinsics	Little Finger	_____
T1/T2	T1	Hand intrinsics	Medial arm	_____

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Clinical Examination for Lumbar Radiculopathy

	Motor	**Sensory**	**Reflex**
L2	Hip flexor	Ant thigh	
L3	Knee ext	Above knee	Knee jerk
L4	Foot dorsi	Med calf	
L5	Big toe dorsi	Lat calf	
S1	Plantar flex	Lat calf	Ankle jerk

Migraine vs Cervicogenic Headaches

A chronic neurological condition

An attack is characterised by moderate to severe headache (usually behind one eye) with associated nausea or vomiting lasting for four to 72 hours. The patient will usually complain of a heightened sensitivity to light, sound or smells and very often will have to lie down in a quiet darkened room until the symptoms are relieved.

The two most common forms of migraine are:

- migraine without aura (affecting approximately 80% of sufferers)
- migraine with aura (affecting approximately 20% of sufferers)

Migraine vs Cervicogenic Headaches

Headache accompanied by neck pain and stiffness.

Certain neck movements can provoke cervicogenic headaches.

In most cases, cervicogenic headaches develop on one side of the head, starting from the back of the head and neck and radiating toward the front.

Some other symptoms of a cervicogenic headache include:

- a reduced range of motion in the neck
- pain on one side of the face or head
- pain and stiffness of the neck
- pain around the eyes
- pain in the neck, shoulder, or arm on one side
- head pain that is triggered by certain neck movements or positions
- sensitivity to light and noise
- nausea
- blurred vision

Benign Spinal Masqueraders

- Thoracic outlet syndrome - C8/ T1 radiculopathy
- Suprascapular nerve compression- C5 radiculopathy
- Carpal tunnel syndrome- C6 radiculopthy
- Ulnar nerve compression- C8/ T1 radiculopthy
- Radial nerve compression- C7 radiculopthy

Brachial Neuritis (Parsonage-Turner Syndrome)

- Brachial neuritis is a term used to describe an inflammation of the brachial plexus that causes sudden-onset shoulder and arm pain, followed by weakness and/or numbness.

- Diabetic neuropathy.
- Distal sensory neuropathy
- Proximal motor neuropathy
- Truncal neuropathy
- Compression neuropathy

Other Spinal Masqueraders

- Vascular lesions ie ischaemia and AVMs
- Multiple sclerosis
- Transverse myelitis
- Motor neuron disease
- Subacute combined degeneration of the cord
- Guillain- Barre syndrome
- Cancer ie paraneoplastic syndromes

Spinal AVMs

- Chronic progressive radiculopathy or myelopathy.
- Can present with haemarrhage.
- Slow progression of gait symptoms.
- Fiox - Alajouanine syndrome.
- MRI and spinal angiogarphy.
- Endovascular or surgical treatment

Multiple Sclerosis

- CNS Dysfunction
- 2 or more sites of CNS involvement.
- White matter involvement
- Chronic or relapsing/ remitting course
- Age of onset between 10 and 50
- No better explanation of symptoms

Transverse Myelitis

- Acute TM is Autoimmune or necrotising.
- Viral prodrome with neurological deficit.
- Necrotising TM is associated with paralysis and sphincter problems over hours or days
- EMG
- CSF studies

Motor Neuron Disease

- Weakness and atrophy of the hands
- Spasticity and hyperreflexia of the lower limbs
- Voluntary eye muscles and sphincters are spared
- Dysarthria and dysphagia
- Has to be differentiated from cervical myelopathy

Guillain Barre Syndrome

- Acute onset of peripheral nerve dysfunction with proximal muscle invovement.
- History of toxin exposure.

Pathophysiology of Cervical Myelopathy

Combination of upper and lower motor neuron signs in a patient with a narrowed cervical spinal canal.

High signal – ischaemia, contusion or demyelination

Spinal cord compression during physiological range of motion ie dynamic stenosis leading to static stenosis

Sagittal canal diameter less than 12 mm is strongly associated with myelopathy and more than 16 mm is low risk

ARNOLD JG Jr.
The clinical manifestations of spondylochondrosis (spondylosis) of the cervical spine.
Ann Surg. 1955 Jun;141(6):872-89. No abstract available.

WOLF BS, KHILNANI M, MALIS L.
The sagittal diameter of the bony cervical spinal canal and its significance in cervical spondylosis.
J Mt Sinai Hosp N Y. 1956 May-Jun;23(3):283-92. No abstract available.

Surgical decompression does not consistently alter the course of CSM

Ebersold MJ, Pare MC, Quast LM.

Surgical treatment for cervical spondylitic myelopathy.
J Neurosurg. 1995 May;82(5):745-51.

Cervical Spondylotic Myelopathy

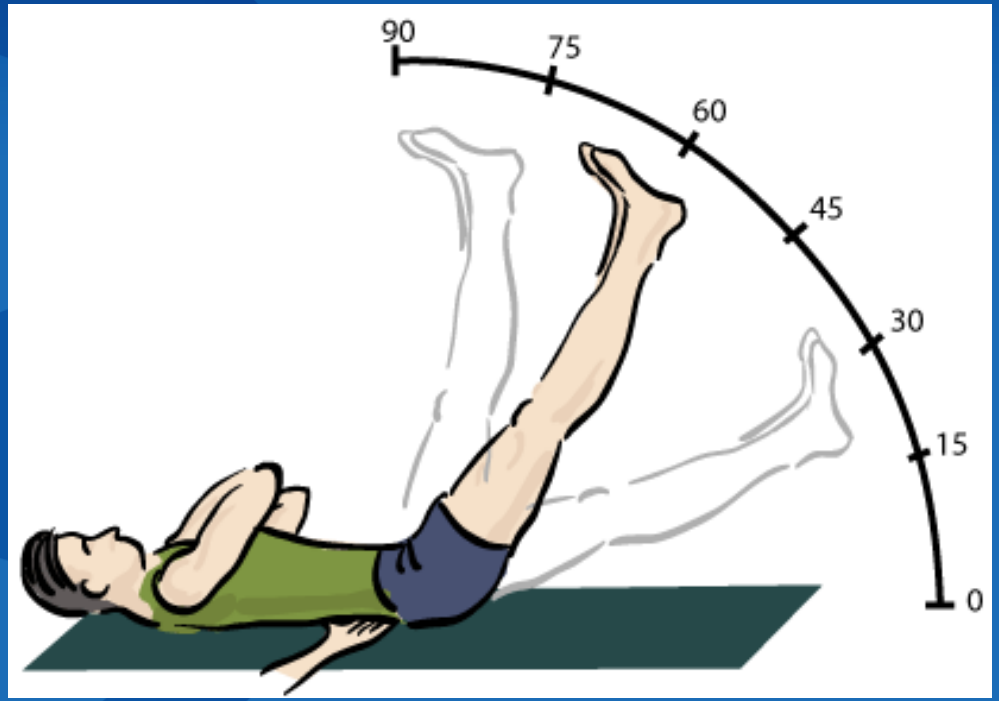
- Presence of long tract signs signifies myelopathy
- Patient may complain of decreased sensation in the hands, diminished dexterity, loss of ability to perform rigorous physical activity and difficulty in walking.
- On examination the patient may have normal or decreased strength, wasting in the small muscles, increased muscle tone, hyper- reflexia, hoffmans sign, ankle clonus and upgoing plantars.

Natural History Of Cervical Spondylotic Myelopathy

- Unknown
- No blinded randomised studies.
- Major reason to perform surgery is to prevent further deterioration
- Outcome following surgery is inversely related to the cross sectional area of the spinal cord.
- The presence of signal change indicates advanced disease or ‘spinal cord damage’.
- Recovery may not be achieved in the presence of signal change.
- Logical to decompress before the signal change develops.
- As yet, we do not have evidence that all patients with cervical spondylosis will deteriorate

Cervical Spondylotic Myelopathy

- Watch and Wait policy for mild CSM
- Operate on patient with mild CSM but significant lesion
- If mild CSM is associated with radiculopathy consider decompression.
- T2 signal change causes concern but T1 signal change signifies advanced CSM and prognosis poor
- Based on present literature regular outpatient review for mild CSM and any progression consider decompression.
- Not set in stone and perfectly acceptable to decompress early.



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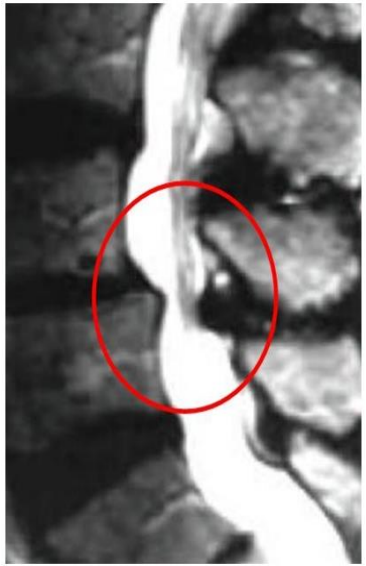
Lumbar Canal Stenosis

- Lateral spinal canal stenosis.
- Central spinal canal stenosis.
- Combination.

Lumbar Canal Stenosis

- Pain on motion.
- Neurogenic Claudication.
- Restriction of extension.
- Dermatomal sensory impairment.
- Reflex deficit
- Motor deficit
- Limited straight leg raising

Lumbar Canal Stenosis



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Look for Red Flags

- Infection, Immunosupression, diabetes, penetrating wounds.
- Fracture- Trauma, Osteoporosis, postmenopausal and age.
- Tumour- Systemic symptoms, Cancer, Age > 60, weight loss, multiple site pain, nocturnal pain, pain at rest and failure to improve.
- AAA, Renal stones, Prostate, Gynaecological disorders

Thank you

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