

CERVICAL DISC HERNIATION

Most frequent at C 5/6 level but also occur at C 6-7 & to a lesser extent at C4-5 & other levels

In relatively younger persons soft disk protrusion is more common than hard disk protrusion

Types of herniation:

1. Intraforaminal herniation:

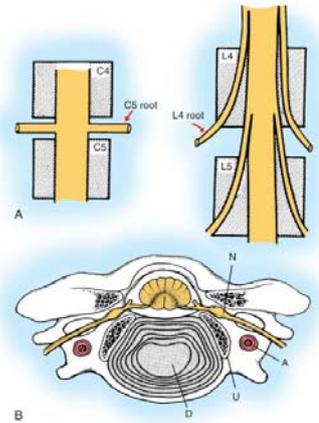
- most common type;
- cause predominately sensory changes;

2. Posterolateral type:

- occurs near entrance zone of foramen;
- causes predominately motor changes;

3. Central type:

- if disc herniation occurs more to the midline (ie posterior herniation), then it compresses spinal cord in addition to, or instead of the nerve root;
- results in cervical myelopathy:



Symptoms

Age 40-60 years for radiculopathy

>80 years for Myelopathy

Radiculopathy is common than myelopathy.

Neck pain 93% (Suprascapular pain in C5 or 6, Interscapular C7 or 8)

Arm pain 93%

Finger paraesthesia 83%

Motor weakness 67%

Diminished reflexes 67%

Sensory disturbance 87%

Spurling test may be positive

Lhermitte sign is positive in cases of myelopathy

Localization of sensory deficit

Sensory numbness in the thumb C6

Sensory numbness in the middle finger in C7

Sensory numbness in the in the little finger C8

Common: C5-6 and next common is C6-7

C3 and C4: Neck pain; Suboccipital head ache, No reflex or motor changes and is difficult to diagnosis

	C5	C6	C7	C8
Neck Pain	Suprascapular	Suprascapular	Scapular or Inter	Scapular or inter
Arm Pain	Upper lateral	Lateral arm	Posterior arm	Medial arm
Sensory	None	Thumb	Middle	Little
Motor	Deltoid SS and IS	Biceps; Wrist Extensor, supinator	Triceps, wrist flexor, Pronator	Finger flexor, Interosic
Reflex	Biceps	[Biceps] Brachioradialis	Triceps	-

Exam:

Look for cervical radiculopathy and myelopathy

Limitation of neck movements with paraspinal spasm

A downward head compression increases pt's radicular pain and paresthesias, especially if neck is flexed to side of involvement

Shoulder abduction relief test:

Significant relief of arm pain with shoulder abduction in soft disc herniation, whereas, the test is likely to be negative with radiculopathy caused by spondylosis (osteophyte compression);

Spurling's Sign:

Gentle neck hyperextension with the head tilted toward the affected side will narrow the size of the neuroforamen and may exacerbate the symptoms on downward head compression

Neurology: lower motor neuron lesion (muscle weakness and hypotonia, reduction of deep tendon reflexes) at level of cord compression; and distal to the compression patient may exhibit upper motor neuron dysfunction (spasticity, clonus, increased deep tendon reflexes, Babinski's sign,

Radiculopathy is: 50% by disc [between Posterior longitudinal ligament and Lusk joint] and rest by osteophytosis [at Lusk joint]

X ray

Sagittal diameter of the cervical canal

C3-7 17 mm
<13 mm stenosis

Pavlov ratio or Torg ratio: Body AP/Canal AP

Normal 1
Relative stenosis 0.8 to 1
Absolute stenosis <0.8

CT scan: Bony spurs and disc

MRI is more useful. Cord size: 10 mm

Discogram is controversial.

Natural course

Complete remission never occurs with non-operative treatment

Progressive myelopathy is not uncommon. This deterioration is episodic in 2/3rd

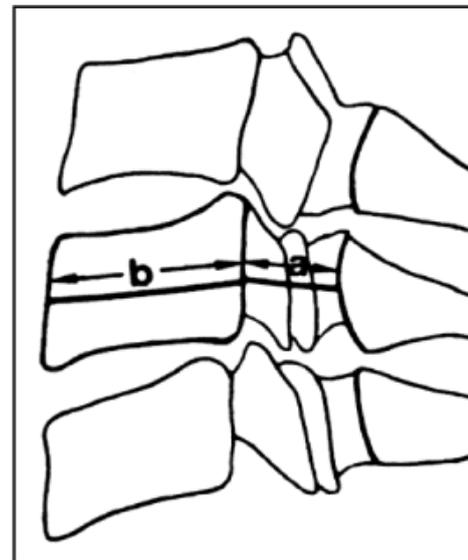


Fig 1. The Torg's ratio (a/b) is a comparison between diameter of the spinal canal (a) and the sagittal diameter of the vertebral body (b).

MRI



Treatment

Conservative treatment

NSAID

Continuous or intermittent traction

Heat treatment

Temporary soft collar

Acupuncture

Majority of Radiculopathy improves with conservative treatment and one third will have mild to moderate pain at 10 yrs

Surgery

6 months conservative Rx (in Japan almost always conservative)

1. Anterior surgery has replaced posterior surgeries in many centers

Goal: Disc excision , Spurs and Bone graft +/- fixation through an Anterior approach

2. Laminectomy + Foraminotomy

3. Laminoplasty: 2 gutter at the medial side of the facet. One side is opened and other side is hinged. This increases diameter by 3-5 mm.

Outcome

Anterior Cervical spondylosis	90%
Laminectomy	60%
Laminoplasty	85% good results

Cervical myelopathy

More in Japan where incidence is 6/100000. OPLL common in Japan: Segmental or continuous

Usually in 6th or 7th decade

Male to female = 2:1

Clinical

Clumsiness in the hands

Myelopathy hand, Finger escape sign

10% spasticity in the lower limbs and urinary disturbance

Hyporeflexia in upper limb and hyperreflexia in lower limb

Positive Babinski

Various cord syndromes

Presents with symptoms, some but not complete improvement for long duration or short duration . "Stepwise deterioration".

Treatment

Posterior laminoplasty

