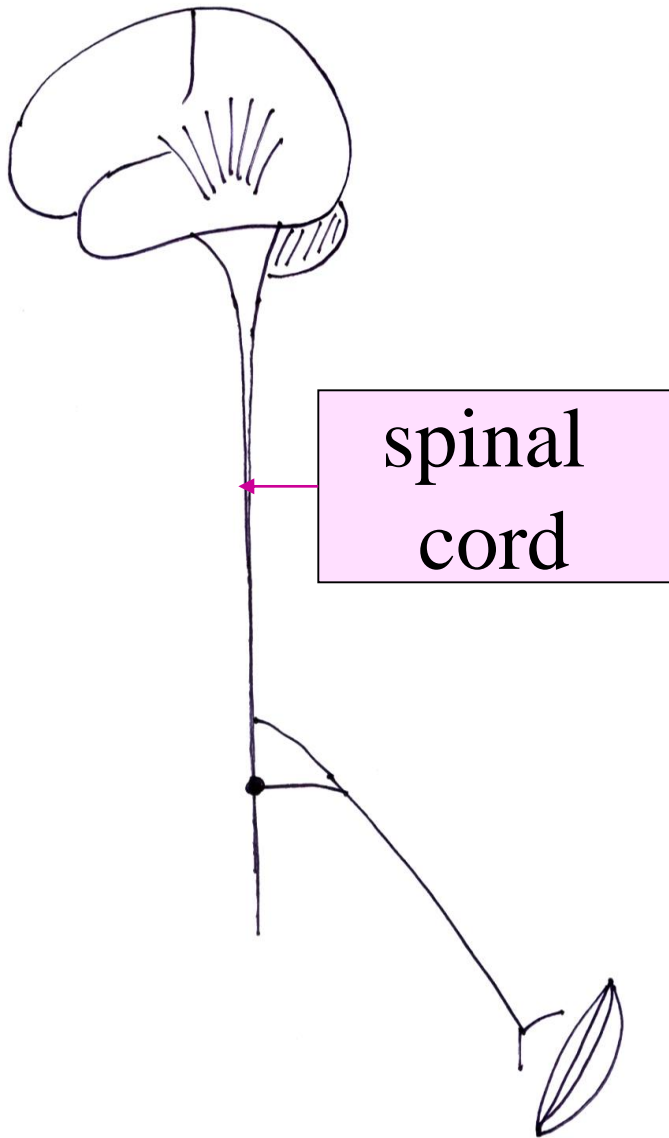


Disorders of the spinal cord

- 1

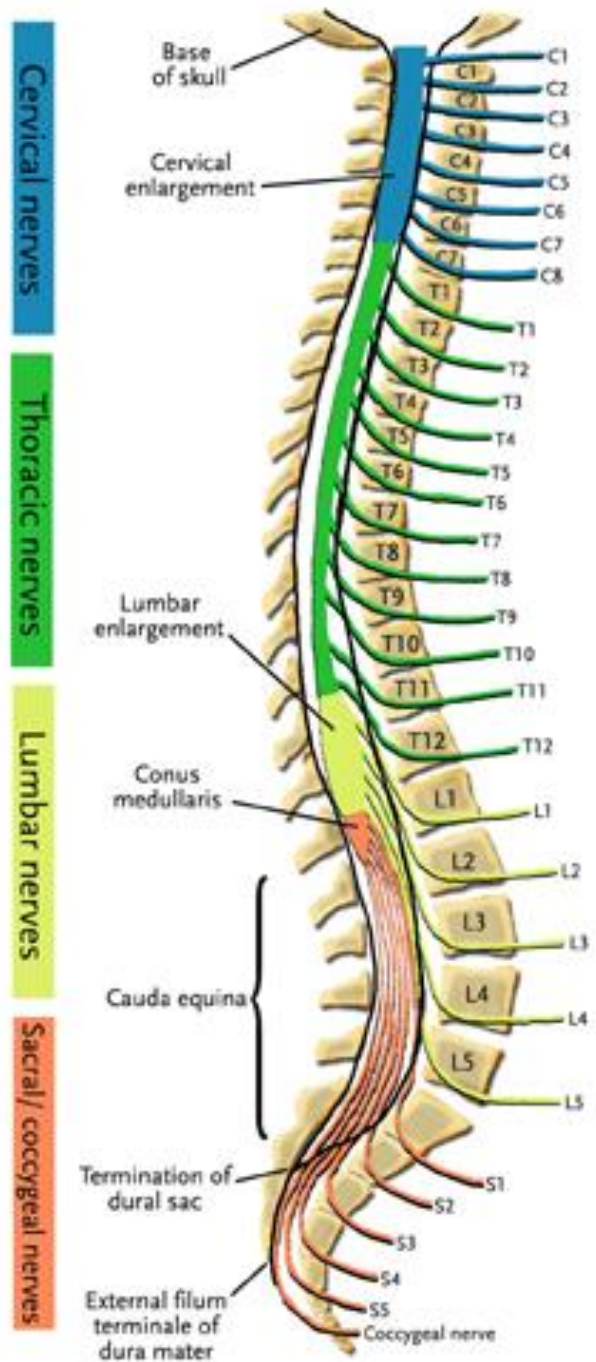
- Where is the lesion?
- What is the lesion?

Where is the lesion?



Where is the lesion?

- localization - vertical plane
horizontal plane



- localization in the VERTICAL plane

vertebral level

spinal root level

C 1-7

cervical C 1-8

T 1-9

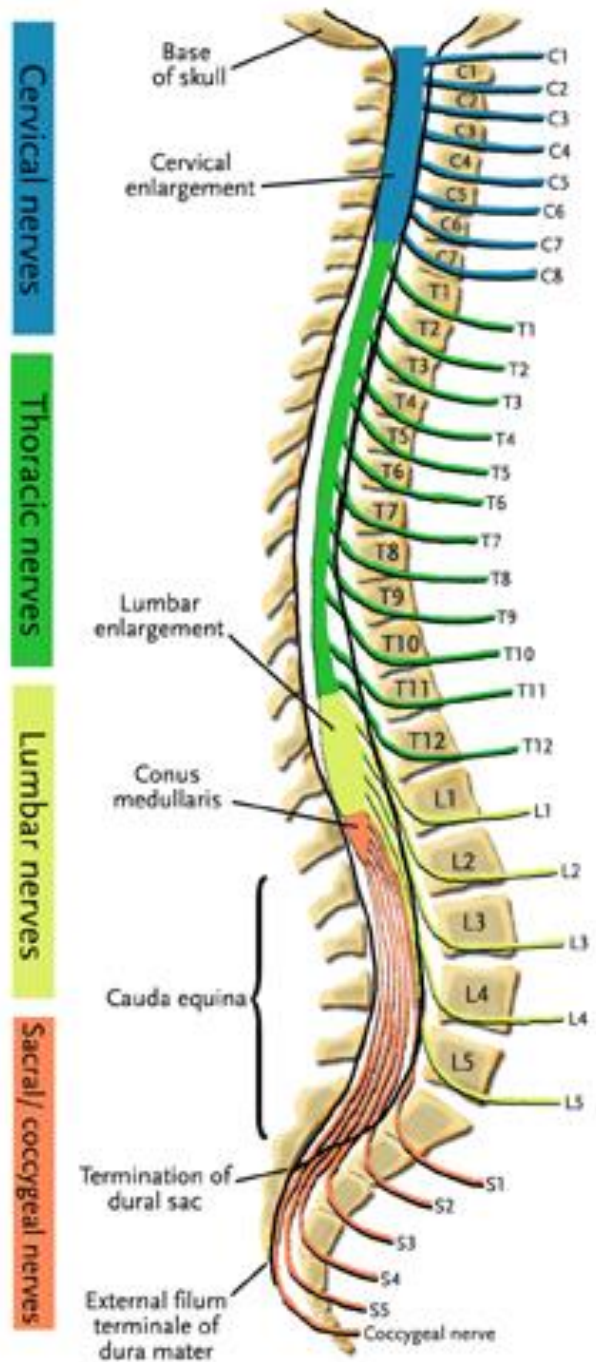
thoracic T 1-12

T 9-11

lumbar L 1-5

T 12- L1

sacral S 1-5

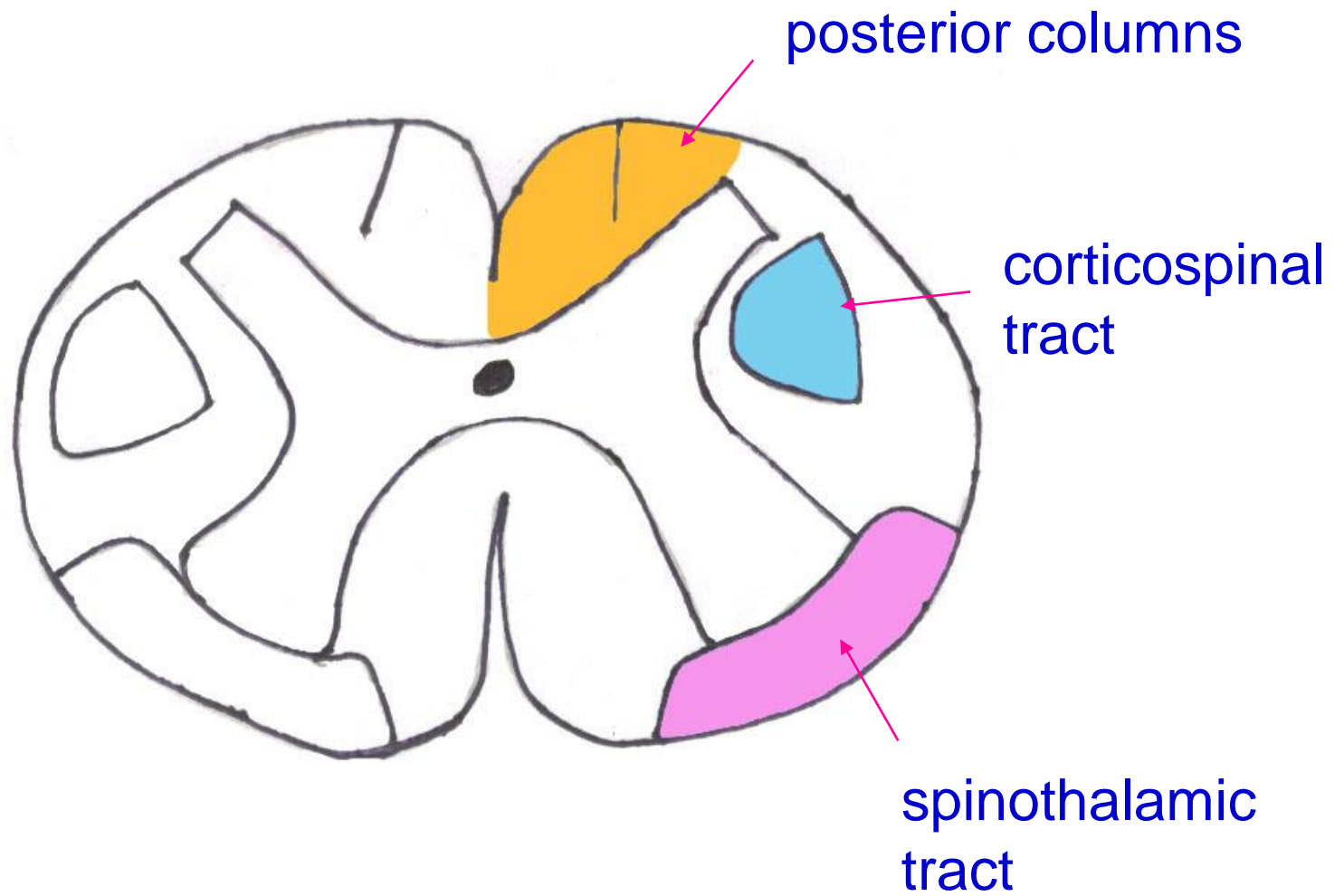


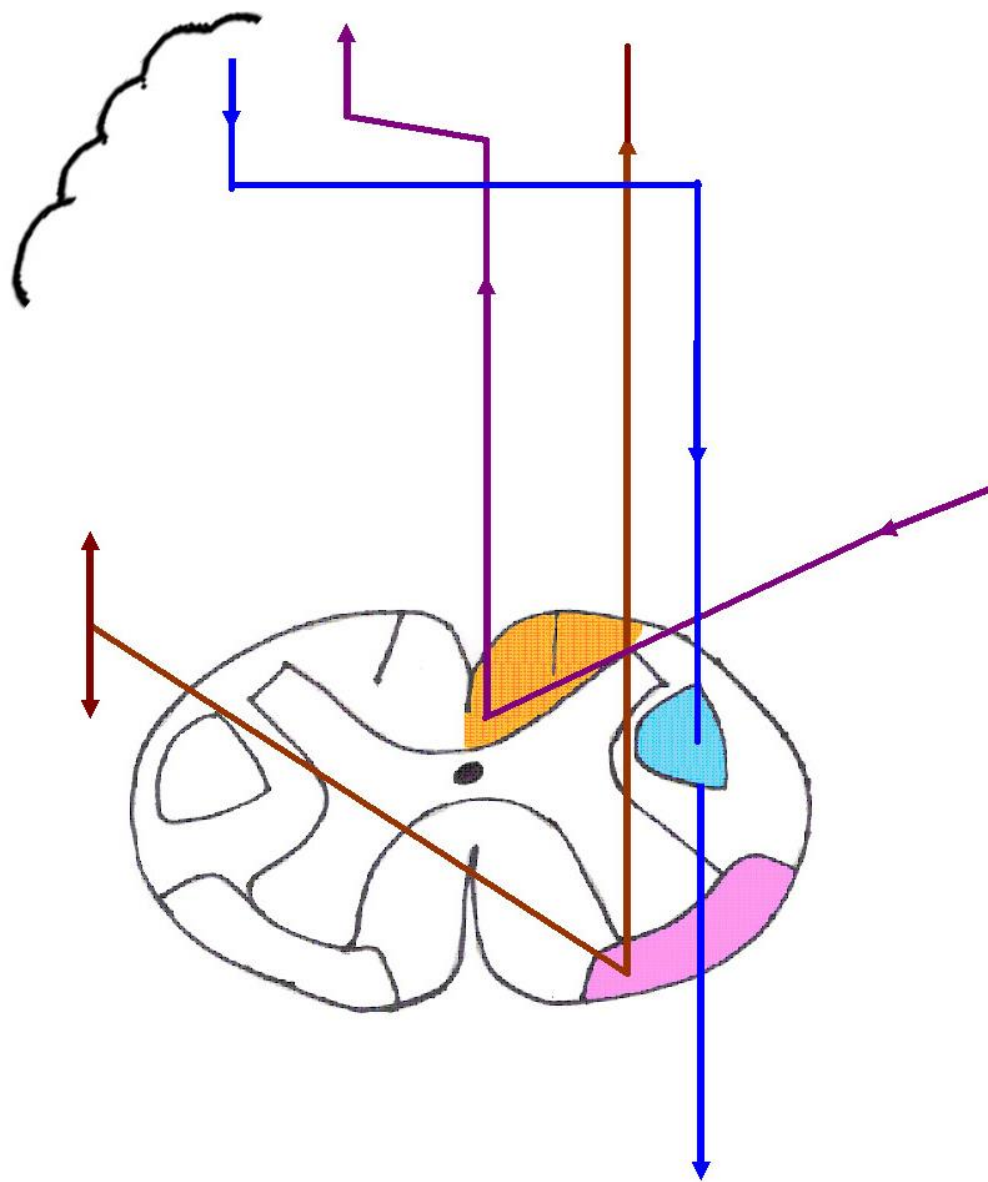
- localization in the VERTICAL plane

- motor level
- sensory level
- reflex level

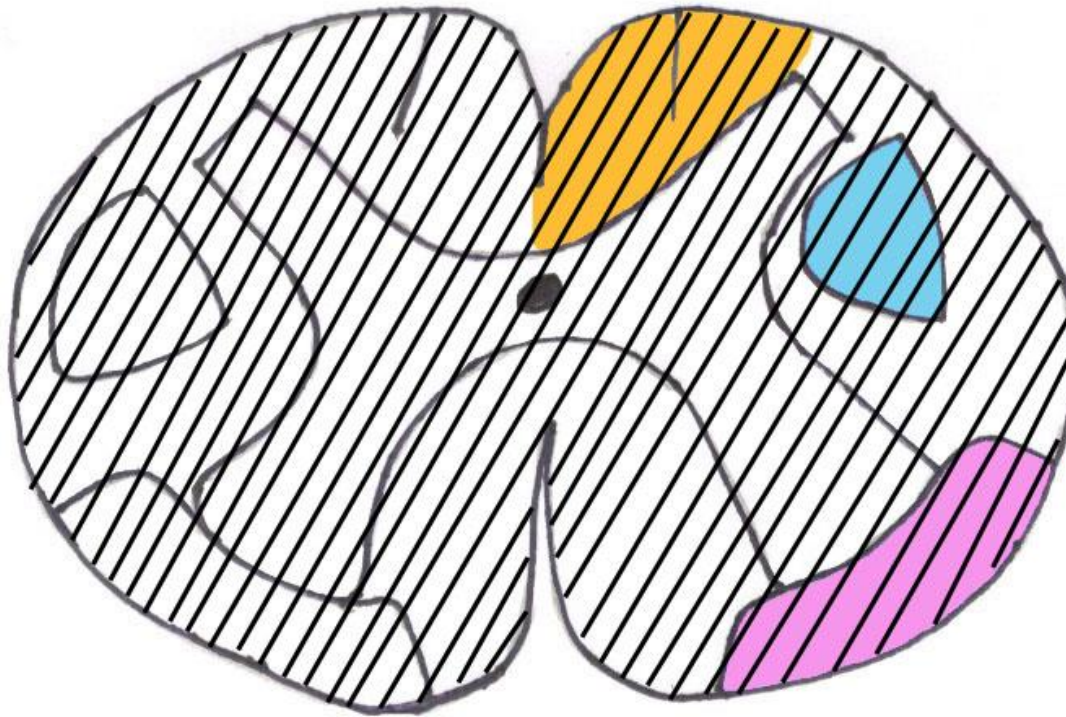
Where is the lesion?

- localization in the HORIZONTAL plane

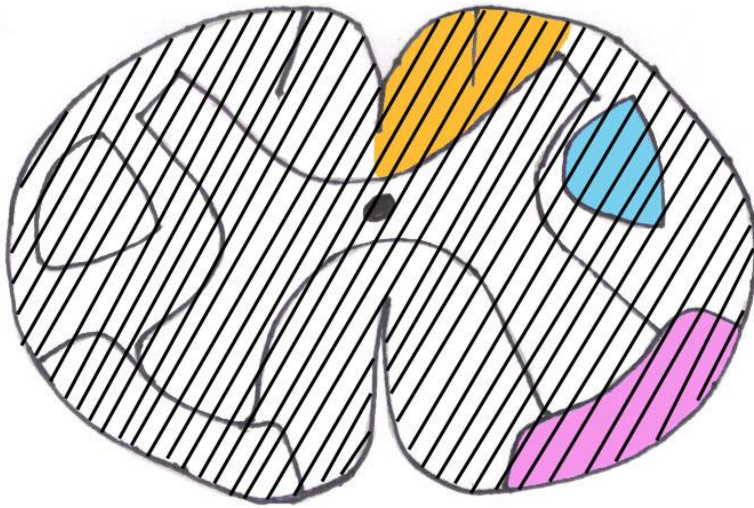




complete cord syndrome- transection



complete cord syndrome- transection



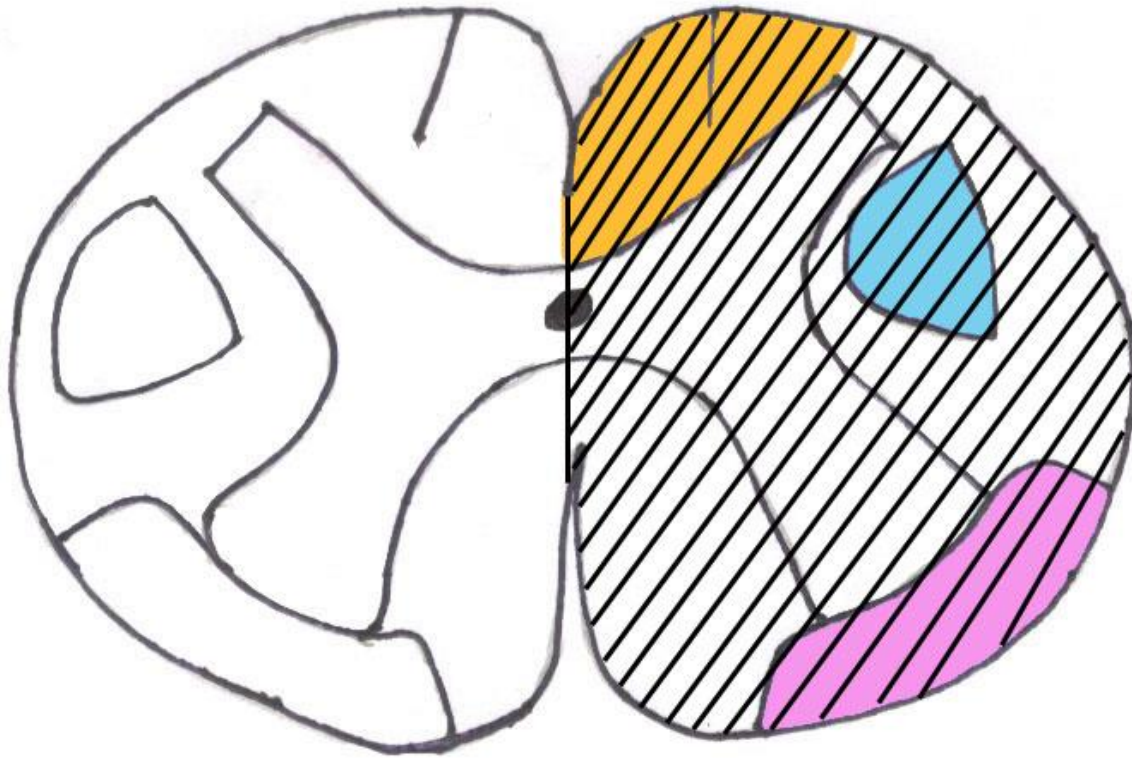
below level of lesion -

- motor - UMN weakness
- sensory loss - below lesion - sensory level
 - spinothalamic
 - posterior columns
- bladder dysfunction

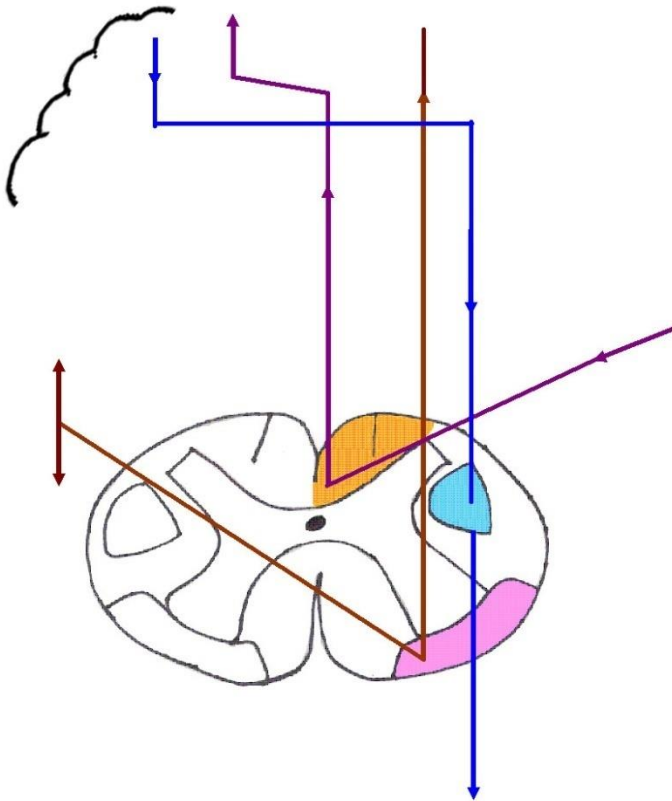
at level of lesion -

- LMN signs
- dermatomal sensory loss
- root pain

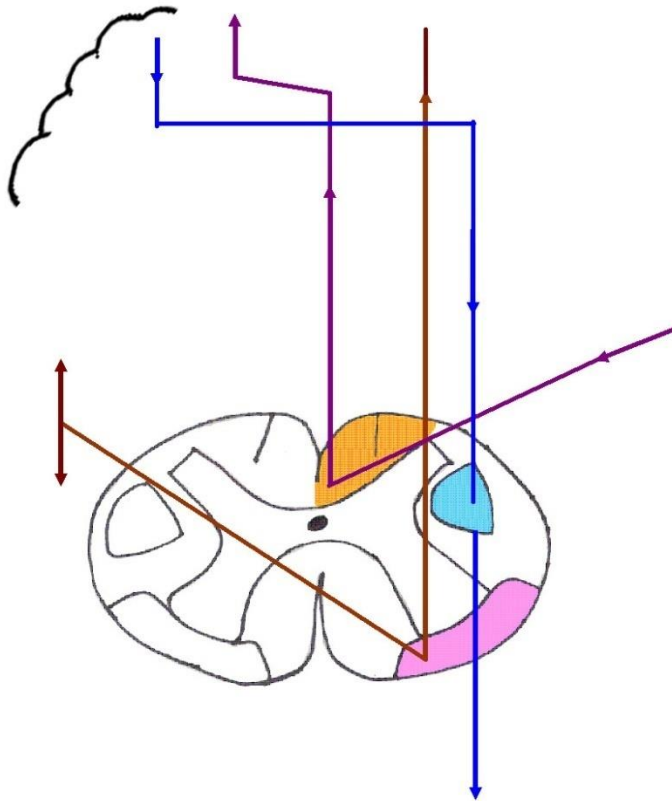
hemi-cord syndrome (Brown-Sequard)



hemi-cord syndrome (Brown-Sequard)



hemi-cord syndrome (Brown-Sequard)



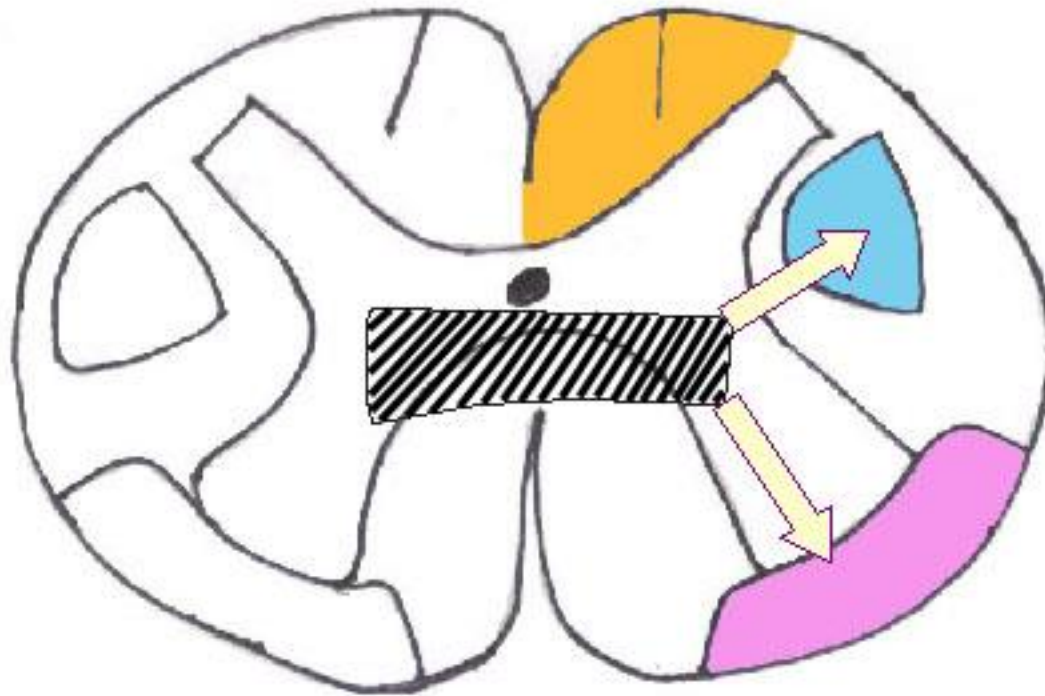
below level of lesion -

- ipsilateral UMN weakness
- ipsilateral posterior column sensory loss
 - numbness
- contralateral spinothalamic loss –
hemi-sensory level
 - painful dysaesthesia

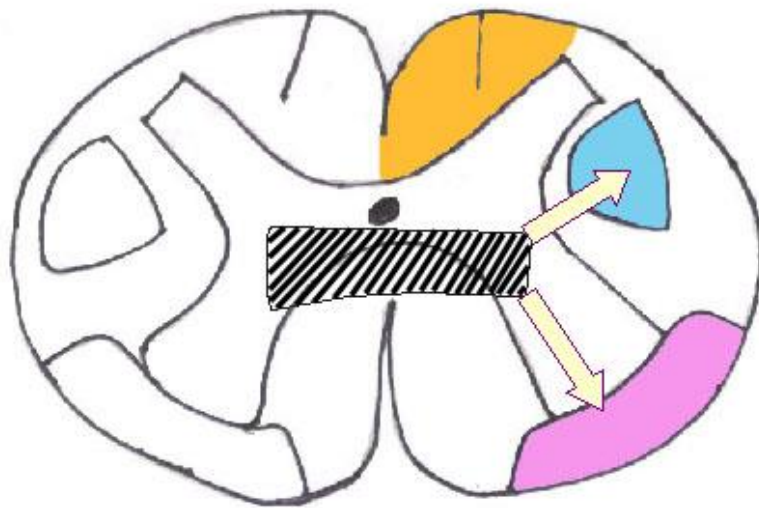
at level of lesion -

- LMN signs
- root pain
- dermatomal sensory loss

central cord syndrome



central cord syndrome



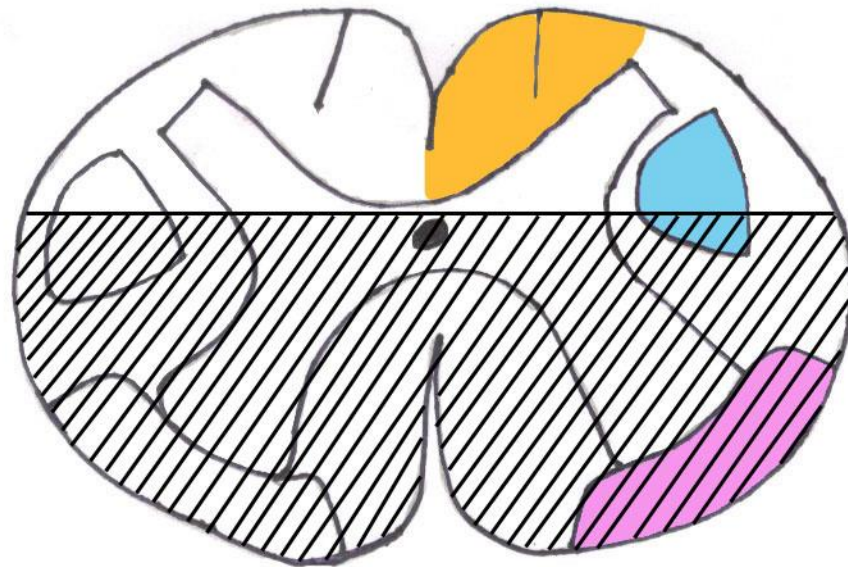
1st – segmental signs - at level of lesion

- crossing spinothalamic fibres – loss of pain, temp
- AHC – LMN signs

2nd – long tract signs - below level of lesion

- spinothalamic fibres – descending loss of pain, temp – ‘cape’
- sacral sparing
- post. columns intact
- dissociated sensory loss
- pyramidal tracts - UMN signs
- Horner’s

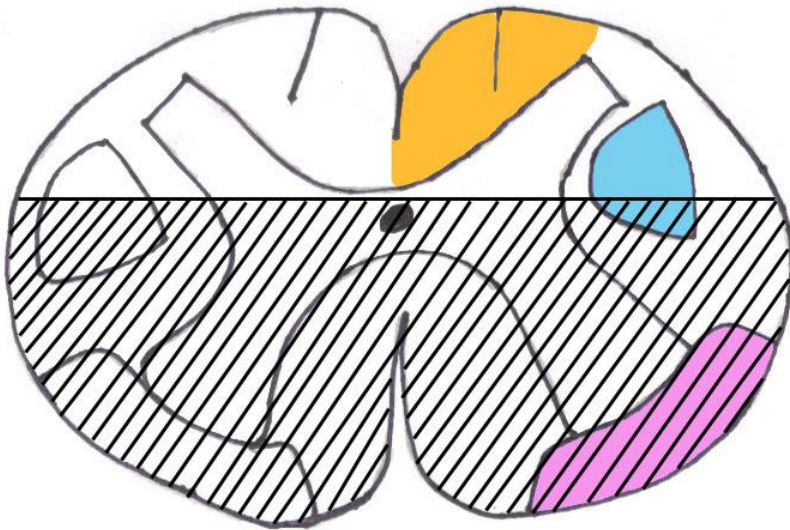
anterior cord syndrome



anterior cord syndrome

below level of lesion -

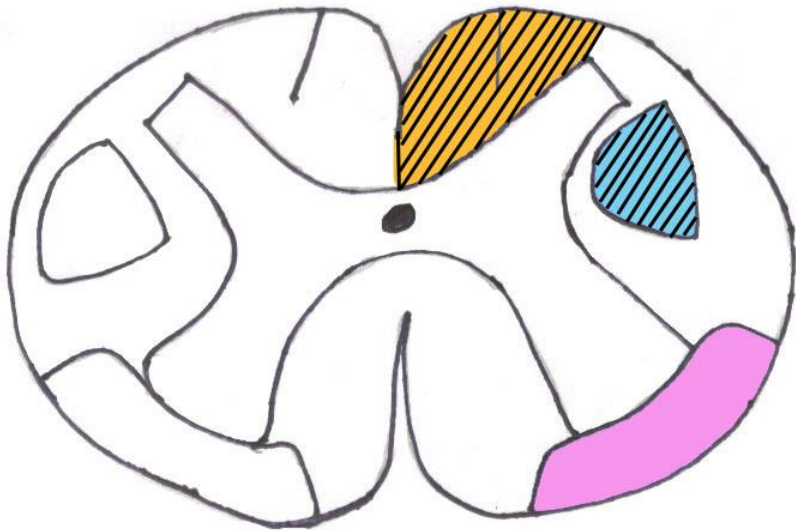
- UMN weakness
- sensory level
 - spinothalamic
- bladder dysfunction
- posterior columns not involved



- anterior spinal A. occlusion

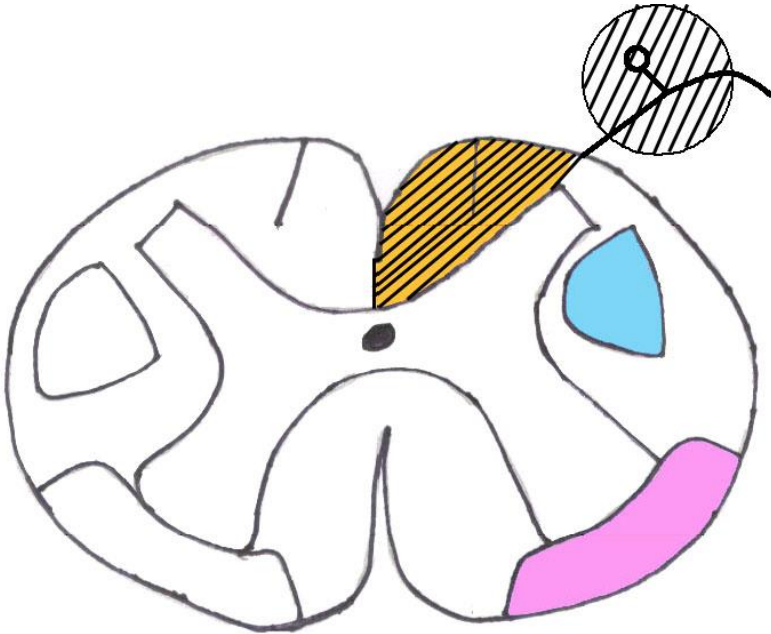
subacute combined degeneration of the cord

- B12 deficiency
- post columns and pyramidal tracts
- ass. with B12 polyneuropathy

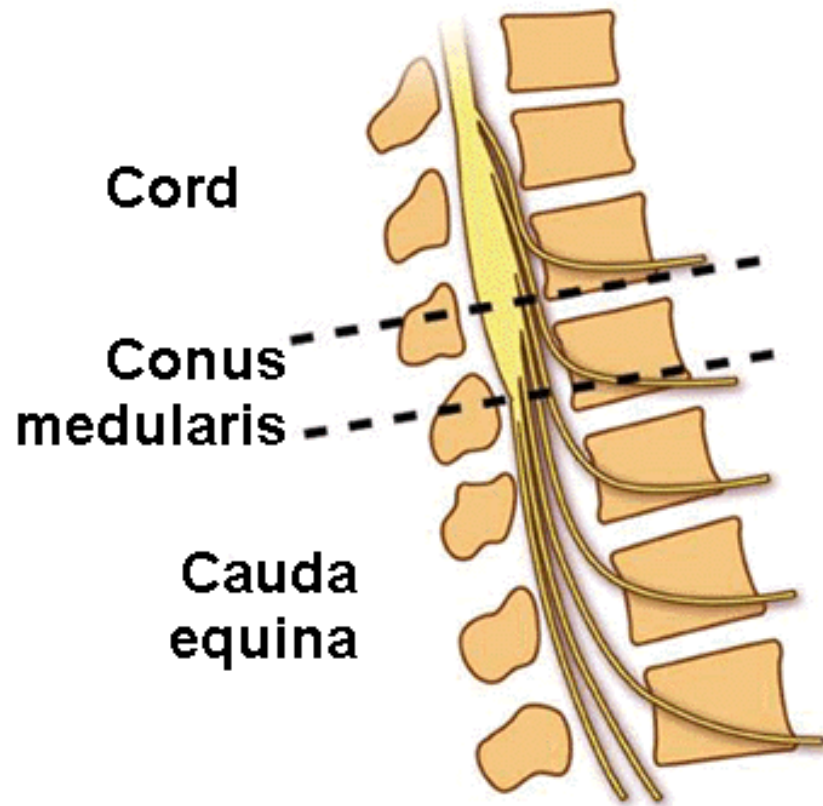


tabes dorsalis

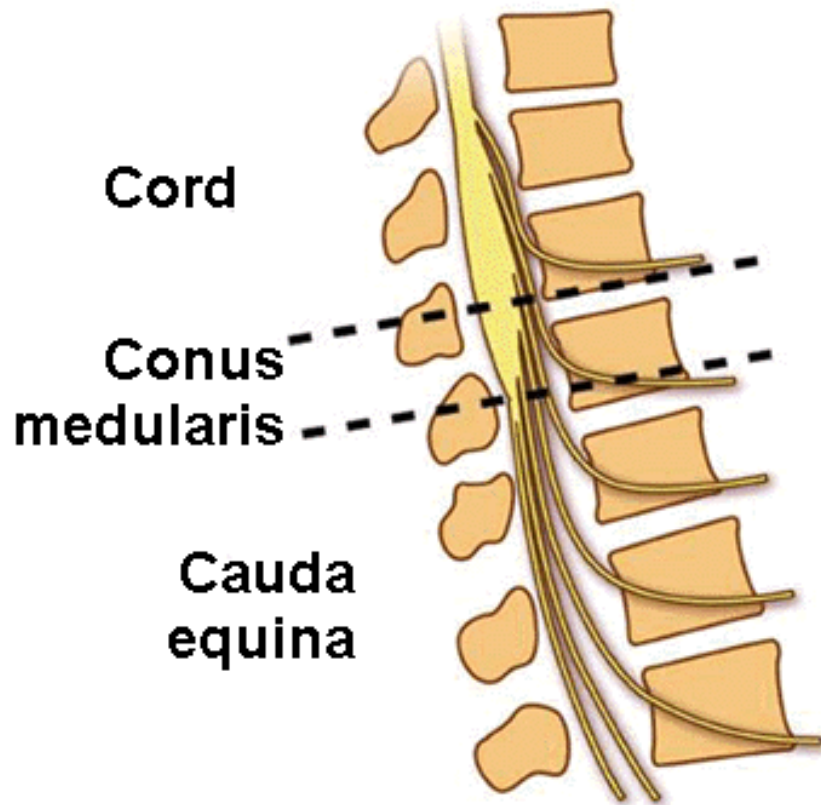
- neurosyphilis
- post columns and dorsal root ganglia
- radicular pain - 'tabetic crises'



Cauda equina lesions

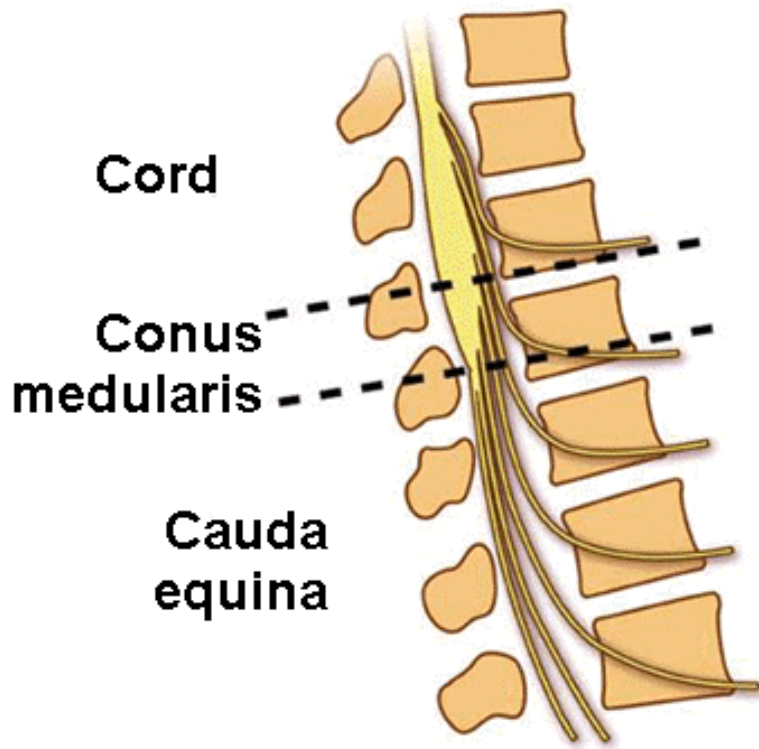


Cauda equina lesions



- Conus medullaris lesion
- High cauda equina (Conus/ Cauda) lesion
- Low cauda equina lesion
- variable signs

Cauda equina lesions



- lower lumbar/ sacral roots
- pain - thigh, buttocks, perineum
- leg weakness, wasting
- KJ, AJ - variable
- saddle anaesthesia
- sphincter disturbance - bladder, bowel
- sexual dysfunction

Remember!

- 'spinal shock' -
 - early stages of acute cord lesions
 - flaccid areflexic paralysis with sensory loss and bladder dysfunction
- bladder involvement -
 - with bilateral cord involvement
 - 1st - urgency, retention; then incontinence
 - early in cauda equina lesions
- 'flexor spasms' -
 - in late stages

Disorders of the spinal cord

- 2

What is the lesion?

What is the lesion?

depends on

- where is the lesion
- temporal profile
- other clues to aetiology

What is the lesion?

| | acute | subacute/ chronic |
|------------------|---------------------------------|-------------------------------------|
| complete | trauma | transverse myelitis, tumour |
| hemi-cord | trauma | tumour |
| anterior | anterior spinal A. occlusion | vertebral collapse, disc lesion |
| central | trauma - haematomyelia | syrinx, intramedullary tumour |

What is the lesion?

- compressive
- non-compressive myelopathy

What is the lesion?

- compressive
- non-compressive myelopathy
- Every cord lesion is compressive, until proven otherwise!

What is the lesion?

- compressive
 - tumours - I^{ry}, II^{ry},
 - vertebral collapse
 - disc lesion
 - abscess
- non-compressive myelopathy
 - inflammation — trans. myelitis, MS, conn. tis. dis.
 - infection — TB, viral, HIV
 - vascular — ant. spinal A. occlusion, haemorrhage
 - metabolic — B12 def.
 - degenerative — syrinx, MND

- extra-medullary, extra-dural
 - vertebral collapse -TB, tumours
 - disc lesions
 - epidural abscess
- extra-medullary, intra-dural
 - meningioma, neurofibroma
- intra-medullary
 - intramedullary tumours
 - syrinx

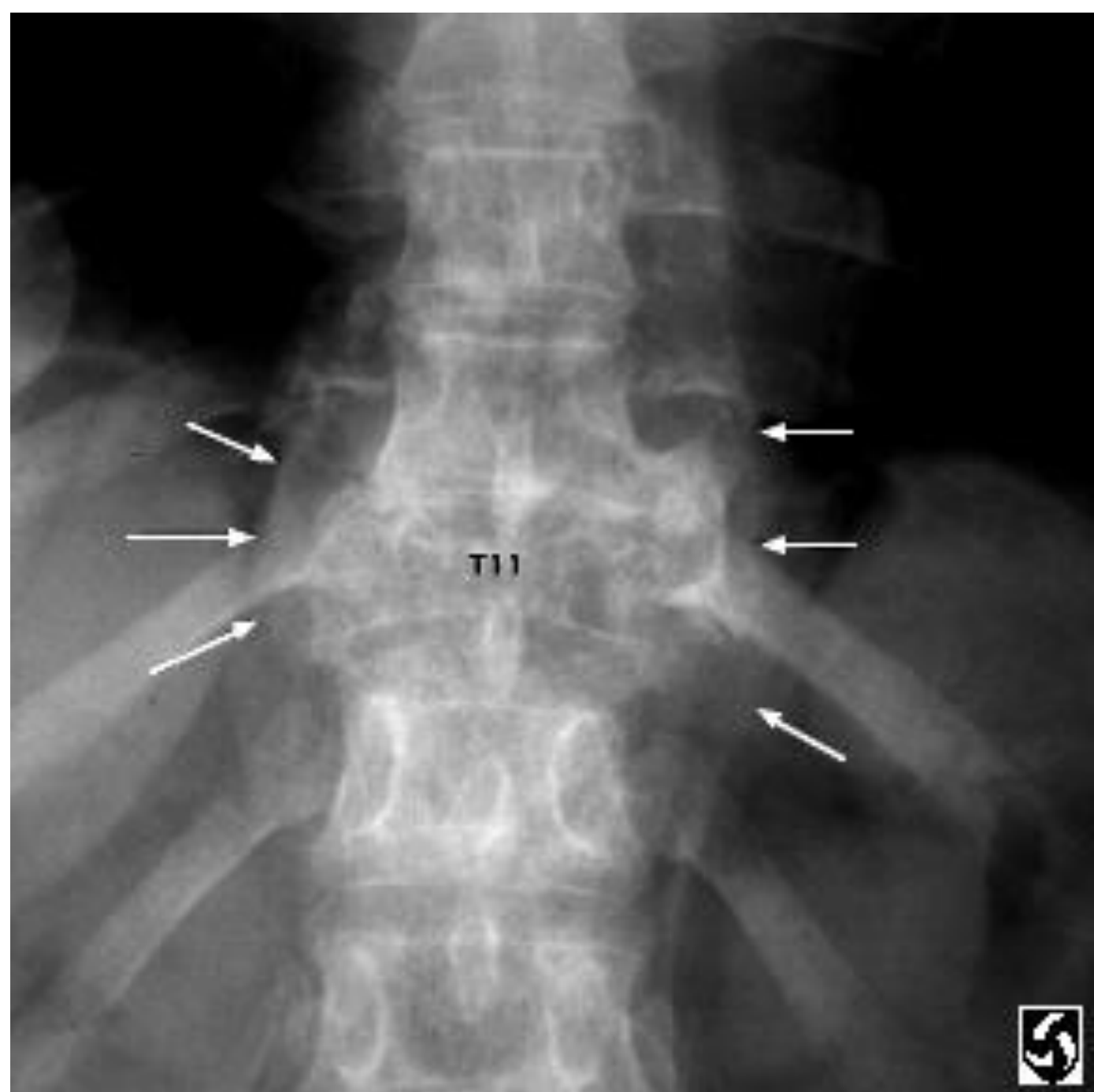
Investigations

- demonstrate spinal cord disease
- look for cause

Investigations

- demonstrate spinal cord disease
 - X-ray – vertebral collapse, pedicle erosion
 - MRI – compressive, non-compressive
 - myelography
- look for cause
 - CSF
 - other -

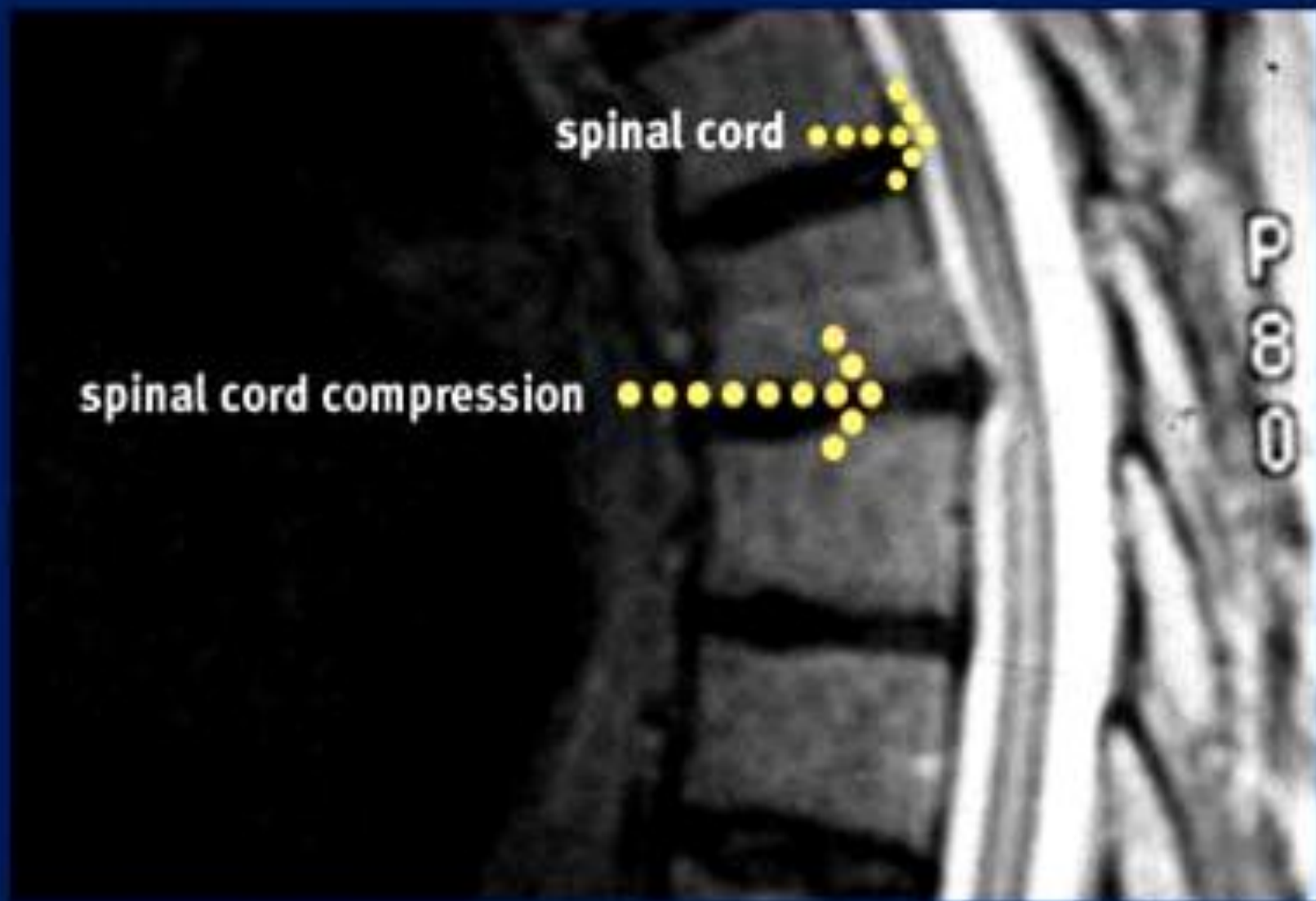




spinal cord

spinal cord compression

P80







myelogram – extradural compression at L45

Treatment

- treat spinal cord disease
- treat cause

Treatment

- treat spinal cord disease
 - iv steroids – methyl prednisolone, dexamethasone,
 - rehabilitation
 - Rx spasticity - baclofen, tizanidine
 - Rx bladder problems
 - surgery
- treat cause – specific treatment