

# Spinal Cord Syndromes

## Incomplete Spinal Cord Syndromes

### **Anterior Cord Syndrome**

- Aetiology
  - Direct anterior cord compression
  - Flexion of cervical spine
  - Thrombosis of anterior spinal artery
- Damage to corticospinal & spinothalamic tracts
- Clinical features
  - Complete paralysis below level of lesion
  - Loss of pain & temperature sensation
  - Preservation of proprioception, vibration & crude touch
- Poor prognosis

### **Central Cord Syndrome**

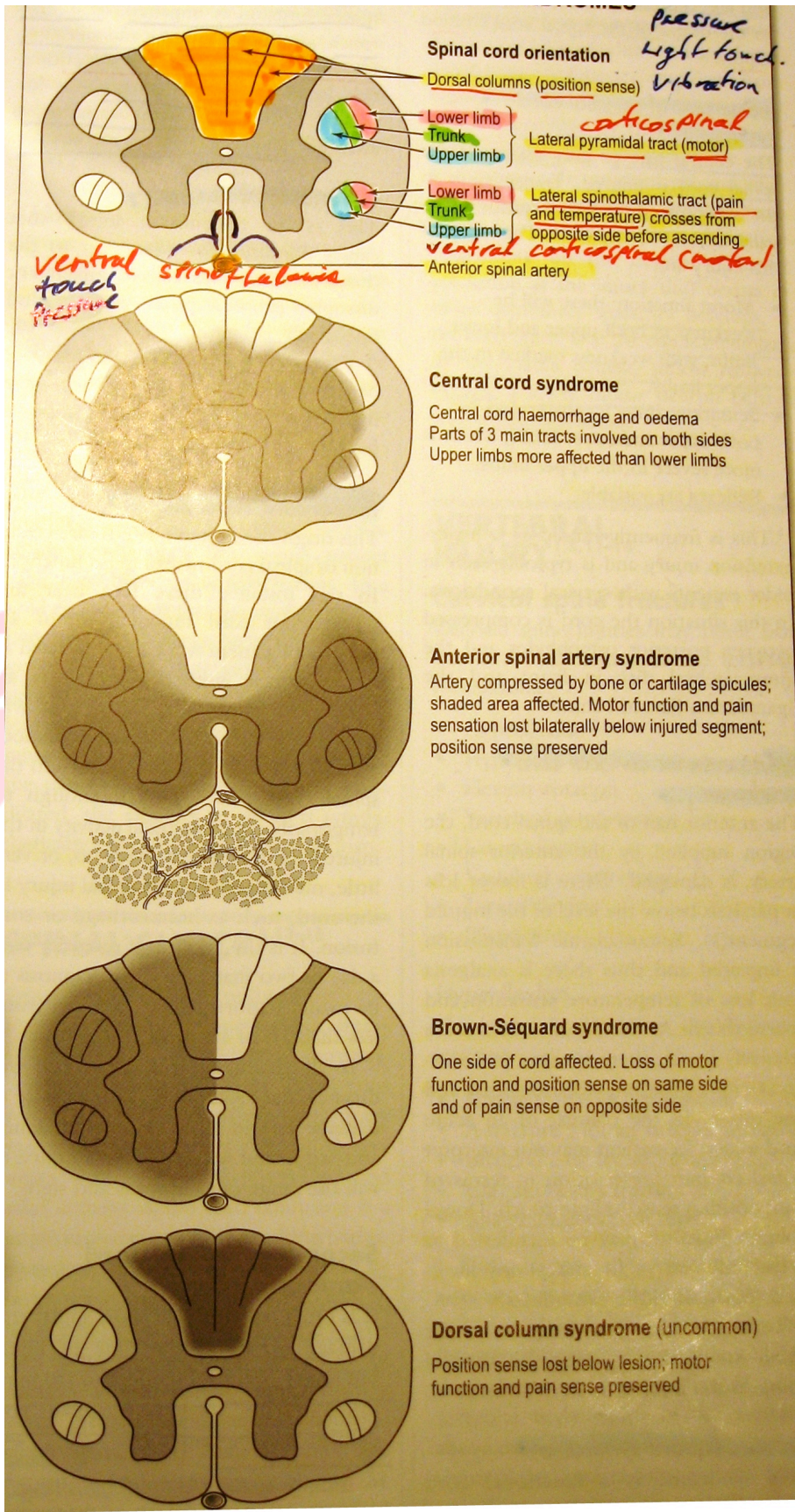
- Aetiology
  - Hyperextension injury – usually seen in pre-existing cervical spondylosis
  - Ischaemia
  - Cervical stenosis
- Damage to central fibres of spinothalamic & corticospinal tracts
  - Tracts to upper limbs more medial than lower limbs
- Clinical features
  - ↓ power – arms > legs
    - May get spastic paraparesis or quadriparesis
    - Preservation of bowel & bladder control in most cases
  - ↓ pain & temperature sensation (lesser degree) – arms > legs
- Prognosis good – most don't recover fine motor use in upper limbs

### **Brown-Séquard**

- Aetiology
  - Hemisection of cord – penetrating injury
  - Unilateral cord compression – disc, haematoma, bony injury, tumour
- Clinical features
  - Ipsilateral = motor, proprioception, vibration
  - Contralateral = pain & temperature
- Prognosis good – best prognosis of incomplete lesions

### **Cauda Equina**

- Peripheral nerve injury
- Clinical features
  - Variable motor & sensory loss in lower limbs
  - Sciatica
  - Bowel & bladder dysfunction
  - Saddle anaesthesia
- Prognosis good – better than for spinal cord injuries



**Spinal cord orientation**

- Dorsal columns (position sense) *pressure*
- Lower limb *Light touch*
- Trunk *Vibration*
- Upper limb *corticospinal*
- Lower limb *Lateral pyramidal tract (motor)*
- Trunk *Lateral spinothalamic tract (pain and temperature) crosses from opposite side before ascending*
- Upper limb *ventral corticospinal (motor)*
- Anterior spinal artery

*ventral touch pressure*  
*spinothalamic*

**Central cord syndrome**

Central cord haemorrhage and oedema  
Parts of 3 main tracts involved on both sides  
Upper limbs more affected than lower limbs

**Anterior spinal artery syndrome**

Artery compressed by bone or cartilage spicules; shaded area affected. Motor function and pain sensation lost bilaterally below injured segment; position sense preserved

**Brown-Séquard syndrome**

One side of cord affected. Loss of motor function and position sense on same side and of pain sense on opposite side

**Dorsal column syndrome (uncommon)**

Position sense lost below lesion; motor function and pain sense preserved