common spine disorder

- Destructive Spinal Lesions:
  - ☐ Present with pain at rest or pain at night
  - ☐ Associated with constitutional symptoms.
  - ☐ Most common causes are infection & tumors
    - tumors:
      - ☐Primary Spinal tumors: rare
      - ☐Spinal metastasis:very common
    - infections:
      - ☐ Most common is TB and Brucellosis.
  - ☐ Vertebral body and pedicles are the commonest sites of pathology
- Osteoporotic vertebral fractures:
  - ☐Pathologic, low energy fractures
  - ☐ Anterior column (wedge/burst Fracture) only compromised (Wedge/Burst Fracture)
  - ☐Repetitive fractures result in kyphotic deformity (hunchback)
- spinal deformities :
  - Kyphosis
    - ☐Deformity of the spine in the Sagittal plane
    - ☐Deformity of the spine in the Coronal plane
  - Scoliosis
    - Types:
      - Congenital
      - Acquired
      - Idiopathic - Most common
    - ☐ Painless deformity: Usually noticed by parents or others
    - ☐ Examination: neurologically normal, positive Adams test.
    - ☐ Management: depends on age & degree of deformity
  - Spondylolisthesis
    - ☐ Translation (Displacement) of one vertebra over another.
    - ☐ It's a defect in the pars interarticularis.
    - Types:
      - ☐ "Degenerative" Spondylolisthesis
      - ☐ "isthmic" spondylolisthesis
    - ☐ Severity is according to the degree of displacement
    - Management:
      - ☐ Conservative treatment first
      - Surgical treatment indicated for:
        - If Grade 3 or more
        - failed conservative management
        - procedure:
          - Instrumented PSF (posterior spinal fusion) with decompression +/- interbody fusion is the commonest.

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Degenerative Spinal Disorders

- Etiology: multifactorial disorders
  - Genetic predisposition
  - Age-related
  - environmental factors
- Pathology:
  - Mechanical segment
    - Anteriorly (body of the vertebra)
      - Intervertebral disc (degeneration occurs here)
      - the intervertebral disc is primarily loaded in flexion
      - ☐ degeneration
        - loss of cellular material and hydration → pain
      - What will disc degeneration cause?
        - Spinal stenosis
        - Foraminal stenosis
        - Radiculopathy
    - Posteriorly(facet joints)
      - Subsequent degeneration (osteoarthritis) occurs at the facet joints.
      - Are primarily loaded in EXTENSION
      - What will facet joints degeneration cause?
        - Hypertrophy, osteophyte formation
          - Contributing to spinal stenosis or foraminal stenosis
        - Laxity in the joint capsule
          - Leading to instability (degenerative spondylolisthesis)
  - Neurological segment
    - Spinal cord
    - Nerve roots
    - Cauda equina
- Clinical presentation:
  - "Axial pain" in the neck or back
  - Mechanical pain
    - Activity related-not present as rest pain
      - Sitting, bending forward (flexion) → originating from the disc → "discogenic pain"
      - Standing, bending backward (extension) → originating from the facet joints → "Facet syndrome"
  - Neurologic symptoms
    - myelopathy
    - radiculopathy
    - Cauda equina
    - Neurogenic claudication
      - differentiating between neurogenic and vascular claudication you should read it from our lecture
- cervical spine:
  - Degenerative changes typically occur in C3-C7
  - Presentation
    - Axial neck pain
    - Myelopathy
    - Radiculopathy
  - Physical examination
    - Weakness
    - Loss of sensation
    - Hyper-reflexia
    - hypertonia
    - Spurling's sign
  - Treatment
    - Conservative treatment:
      - First line of treatment for axial neck pain and mild neurologic symptoms
      - rest
      - Physiotherapy
      - NSAID
      - Neuropathic medication
    - Surgical management indication:
      - Cervical stenosis causing cervical myelopathy
      - Disc herniation causing severe radiculopathy associated with weakness
      - Failure of conservative treatment of axial neck pain or mild radiculopathy
      - Procedures:
        - ☐Anterior discectomy and fusion
        - ☐ Posterior laminectomy +/- fusion
- Lumbar Spine
  - Degenerative changes typically occur in L3-S1
  - presentation
    - Axial lower back pain
    - Spinal stenosis
    - Neurogenic claudication
  - Physical examination
    - Stiffness
    - Weakness
    - Loss of sensation
    - Hypo-reflexia, hypotonia
    - Special tests: straight leg raise test
  - treatment :
    - Axial low back pain
      - Conservative treatment is first- line :
        - Physiotherapy
        - NSAID
      - Surgical treatment Indicated for:
        - Instability or deformity
        - Failure of conservative treatment
    - spinal stenosis
      - Conservative treatment is first line
        - Activity modification
        - Analgesic
        - epidural corticosteroid injections
        - Subtopic 4
      - Surgical treatment Indicated for:
        - Acute Motor weakness e.g. drop foot
        - Severe neurogenic claudication → needs to sit every 5 mins
        - Failure of minimum 6 months of conservative treatment
        - Procedure:
          - ☐ Spinal decompression (laminectomy)
    - Acute disc herniation:
      - Conservative treatment is first line of treatment for mild sciatica without motor deficit:
        - rest
        - NSAID
        - Physiotherapy
        - epidural cortico-steroid injection.
      - Surgical treatment Indicated for:
        - cauda-equina syndrome
        - Motor deficit Muscle power 3 or less
        - Failure of 3 months of conservative treatment
        - Procedure:
          - ☐ Discectomy

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