

Clinicoanatomical Problem

Facts to Remember – Back

- Back consists of **skin, fasciae, muscles, vertebral column, spinal cord with meninges, vessels, and nerves**.
- **C7 vertebra** ? most prominent spinous process (vertebra prominens).
- **Spine of scapula** ? opposite T3 vertebra.
- **Inferior angle of scapula** ? opposite T7 vertebra.
- **Iliac crest highest point** ? level of L4 vertebra.
- **PSIS dimple** ? corresponds to S2 vertebra.
- **Sacral hiatus** ? landmark for caudal epidural anesthesia.
- Skin of back supplied by **posterior (dorsal) rami of spinal nerves**.
- Superficial fascia of back ? thin, fatty, mobile.
- Deep fascia in lumbar region forms **thoracolumbar fascia** (posterior, middle, anterior layers).
- **Extrinsic muscles of back (superficial & intermediate)** ? supplied by ventral rami (except trapezius by accessory nerve).
- **Intrinsic muscles of back (deep)** ? supplied by dorsal rami of spinal nerves.

- **Trapezius** ? accessory nerve; action = elevate, retract, depress scapula.
- **Latissimus dorsi** ? thoracodorsal nerve; action = extend, adduct, medially rotate arm.
- **Levator scapulae & Rhomboids** ? dorsal scapular nerve; action = elevate and retract scapula.
- Intermediate back muscles (serratus posterior superior & inferior) ? accessory muscles of respiration.
- Deep back muscles divided into **splenius, erector spinae, transversospinalis, and small segmental muscles**.
- **Erector spinae (iliocostalis, longissimus, spinalis)** ? main extensors of spine.
- **Semispinalis, multifidus, rotatores** ? stabilize vertebrae, assist rotation.
- **Interspinales & intertransversarii** ? fine-tuning of movements.
- Blood supply of back ? **posterior branches of intercostal, lumbar, and sacral arteries**.
- Common causes of **back pain** ? muscle strain, spasm, herniated discs, TB spine.
- **Erb's palsy** and **winged scapula** highlight nerve supply importance of superficial back muscles.
- **Trapezius test** ? shrugging shoulders against resistance.
- **Latissimus dorsi test** ? resisted climbing or adduction/extension of arm.

Clinicoanatomical Problems – Back

1. Vertebra Prominens Palpation

- **Case:** A medical student palpates a prominent bony projection at the base of neck.
- **Q:** Which vertebra is this?
? C7 spinous process.

2. Landmark for Lumbar Puncture

- **Case:** A clinician needs to perform lumbar puncture in an adult.
- **Q:** Which vertebral level is located by joining iliac crests?
? L4 vertebra (intercristal line).

3. Caudal Epidural Anesthesia

- **Case:** An anesthetist introduces needle through sacral hiatus.
- **Q:** What is the surface landmark for sacral hiatus?
? Depression below sacral cornua at lower end of sacrum.

4. Herpes Zoster (Shingles)

- **Case:** A 60-year-old develops painful vesicular eruptions along one strip of back skin.
- **Q:** Which structure is infected?
? Dorsal root ganglion of spinal nerve.

5. Back Acne and Sebaceous Cysts

- **Case:** A young man has multiple pustules and nodules on upper back.

- **Q:** Why is skin of back prone to such lesions?
? Rich in sebaceous glands.

6. Accessory Nerve Injury

- **Case:** After neck dissection, patient cannot shrug shoulders.
- **Q:** Which muscle is paralyzed?
? Trapezius.

7. Thoracodorsal Nerve Injury

- **Case:** Following axillary surgery, patient has difficulty in climbing or rowing.
- **Q:** Which muscle is paralyzed?
? Latissimus dorsi.

8. Dorsal Scapular Nerve Injury

- **Case:** A soldier develops lateral displacement of scapula after nerve injury.
- **Q:** Which muscles are weakened?
? Rhomboids, levator scapulae.

9. Lumbago

- **Case:** A middle-aged man develops acute back pain after lifting heavy weight.
- **Q:** Which muscles are commonly strained?
? Erector spinae group.

10. Herniated Lumbar Disc

- **Case:** A patient presents with radiating pain from back to lower limb.
- **Q:** What causes this?
 - ? Herniation of lumbar intervertebral disc compressing spinal nerve roots.

11. Tuberculosis of Spine (Pott's Disease)

- **Case:** A child presents with kyphotic deformity of back.
- **Q:** What is the underlying pathology?
 - ? Tuberculosis of vertebrae with collapse.

12. Scoliosis

- **Case:** A teenage girl has lateral curvature of spine with rotation.
- **Q:** What is this deformity called?
 - ? Scoliosis.

13. Spinal Cord Injury Landmark

- **Case:** A stab wound at level of T7 vertebra damages spinal cord.
- **Q:** Which surface landmark corresponds to T7?
 - ? Inferior angle of scapula.

14. Muscle Flap Surgery

- **Case:** A breast cancer patient undergoes reconstructive surgery using a back muscle.

- **Q:** Which muscle is used?

? Latissimus dorsi.

15. Reflex Spasm of Back Muscles

- **Case:** A patient with vertebral fracture develops rigid back muscles.

- **Q:** Why?

? Reflex spasm of intrinsic muscles to stabilize spine.