Common Skull Pathologies

Linear Fracture

- Straight, thin break in the bone.
- Most common type.
- Usually seen in temporal and parietal bones.

Depressed Fracture

- Bone is pushed inward toward brain tissue.
- Often from blunt force (hammer, baseball bat, fall).
- High risk of brain injury beneath fracture site.

Basilar Skull Fracture

- Involves the base of the skull (temporal, occipital, sphenoid, or ethmoid bones).
- Signs: "Raccoon eyes" (periorbital bruising), "Battle sign" (mastoid bruising), CSF leak from nose/ear.

Diastatic Fracture

- Fracture along a suture line, causing widening of sutures.
- More common in infants/young children.

Comminuted Fracture

- Bone is broken into multiple fragments.
- Often results from high-energy trauma.

Growing Skull Fracture (Leptomeningeal Cyst)

- Rare, occurs in young children.
- Fracture enlarges over time due to herniation of brain/meninges.

Ping-Pong Fracture

- Seen in infants/children.
- Skull bends inward (like pressing on a ping-pong ball) without a complete break.

Open (Compound) Fracture

- Skull fracture with overlying scalp laceration.
- Risk of infection and brain exposure.

Ring Fracture

- Circular fracture around foramen magnum.
- Often caused by falls from great heights or severe blunt trauma.

Le Fort Fractures (Facial/Skull Base)

- Technically facial fractures but often included in skull trauma.
- *Le Fort I*: Horizontal fracture of maxilla.
- *Le Fort II*: Pyramidal fracture through maxilla and nasal bridge.
- *Le Fort III*: Craniofacial separation (entire midface detaches).

Intracranial Hemorrhage

- *Intracerebral hemorrhage*: Bleeding within brain tissue.

Congenital / Developmental

- Craniosynostosis – Premature closure of cranial sutures, leading to abnormal skull shape.
- Hydrocephalus – Abnormal accumulation of CSF causing enlarged head/skull sutures in infants.

Infectious / Inflammatory

- Osteomyelitis of skull– Bone infection, usually from sinus/ear infections.
- Sinusitis – Commonly visualized on skull/sinus imaging.

Neoplastic (Tumors)

- Metastases – Most common skull tumors; can be lytic (destructive) or sclerotic (dense).
- Meningioma – Benign tumor from meninges; may cause localized bone thickening.
- Multiple Myeloma – "Punched-out" lytic lesions in the skull.

Metabolic / Systemic

- Paget's disease – Thickened, dense, deformed skull ("cotton wool" appearance).
- Hyperparathyroidism – "Salt-and-pepper" skull from bone resorption.

Blowout Fracture

- Fracture of the orbital floor or medial wall (thin bones around the eye).
- Caused by a direct blow to the orbit (e.g., fist, ball, accident).

Tripod Fracture (Zygomaticomaxillary Complex Fracture)

- Involves three fracture sites around the zygomatic bone:
    1. Zygomatic arch
    2. Orbital floor/lateral wall
    3. Maxillary sinus wall
- Caused by direct blow to the cheek (e.g., sports injury, car accident).

Nasal bone fracture

- Most common facial fracture.

Mandibular fracture

- May be unilateral or bilateral; common at condyles, angle, or symphysis.

Orbital roof fracture

- From blunt trauma, often in children.

Congenital / Developmental

- Cleft palate / cleft lip – Failure of fusion of maxilla/palate structures.
- Craniosynostosis (affecting facial bones) – Early suture fusion can cause facial asymmetry.