

CRANIAL CAVITIES (+ Osteological review)

3 Cranial Fossae

1. anterior - orbital roof (ethmoid, frontal, sphenoid)
2. middle - middle ear (sphenoid, petrosal/temporal)
3. posterior - foramen magnum (occipital)

Orbital cavity:

- Aperture = Frontal, zygomatic, maxillary, nasal bones
- Lacrimal fossa - inferomedial orbit > lacrimal duct.
- Roof = frontal; Floor = maxilla
- Lateral wall = zygomatic
- Medial wall = lacrimal, ethmoid, sphenoid (palatine)
- Posterior wall = sphenoid
 - a. superior/inferior orbital fissures - n/a/v's for eye
 - b. optic canal - optic nerve

Nasal cavity:

- Anterior aperture: (nares) nasal + maxilla
- Posterior aperture: (choanae) palatine + sphenoid
- Other openings: paranasal sinuses & nasolacrimal ducts

Nasal cavity:

- Floor: hard palate = maxilla + palatine bones
- Roof: cribriform plate of the ethmoid
- Lateral walls: lacrimal + maxilla + palatine + sphenoid
- Nasal septum: perpendicular plate of ethmoid + vomer
- Conchae (3 pairs)
 1. inferior nasal concha (separate bone)
 2. middle nasal concha (ethmoid)
 3. superior nasal concha (ethmoid)

SKULL GROWTH:

Combination of...

- endochondral bone formation
- intramembranous bone formation

Ossification centers coalesce:

1. Fetal skulls exhibit 110+ ossification centers
2. Neonate has 45 "bones"
3. Adult skull contains 22 bones = 8 cranial / 14 facial

Fontanel – periosteum/endosteum btw the bones

- permit passage through birth canal
- permit fast volumetric expansion of brain/skull
easy access: blood + cerebrospinal fluid samples
- typically approximate (close) at 14-24 months
- (4) anterior, posterior, sphenoid, mastoid
- head-binding & cradle-boarding?

Sutural errors

- Sutural bones (Wormian bones)
 - a. found at sutural margins
 - b. vary in size: small beads to several inches across
- Craniosynostoses (premature fusion) > skull deformities
examples: scaphocephaly, craniostenosis

(?) Of what clinical value is the knowledge that sutural bones commonly occur in the skull?

