

Facial Trauma

Hx: Mechanism of injury, location of injury, how long ago did the injury occur, neck pain, headache, nausea/vomiting, change in vision (describe), rhinorrhea, hearing loss, otorrhea, malocclusion (do teeth feel like they fit properly?), trismus, paresthesias, inability to move facial muscles, tetanus status.

Airway, Breathing, Circulation with C-spine precautions

Do full trauma work-up depending on mechanism of injury (e.g. MVC, fall, etc.)

H&N exam:

- Clean off all dried blood first (to make sure no lacerations are missed)
 - Have a systemic way of doing it each time so that it becomes a routine and you don't omit things (I do C-spine 1st and then top to bottom)
1. C-spine: (high correlation between facial fractures and C-spine injuries)
 - a. Midline tenderness
 - b. Do NOT remove C-spine collar if already on
 2. For all areas below → document all lacerations including:
 - a. Extension to functional structures (ex: eyelids, nose, mouth, ears)
 - b. Possible injury to underlying structures
 - canalicular ducts: especially if laceration medial to puncta → look for ends of duct (pink/gray ring within reddish orbicularis oculi muscle), may need to probe from puncta (do under supervision if not experienced)
 - parotid gland +/- parotid duct: duct travels under line drawn from ear canal to base of nose so be suspicious with laceration in this area (may need to probe from oral cavity with angiocath → irrigate → is see irrigation come out through laceration, it is diagnostic of duct injury)
 - facial nerve and its branches
 - c. The depth of the laceration (ex: skin only, involving cartilage, down to bone? through mucosa?)
 - d. Any underlying fractures?
 3. Skull:
 - a. Feel for fractures, depressed skull fragments
 4. Forehead/Frontal bone:
 - a. Feel for fractures, depressed skull fragments
 5. Orbital rims:
 - a. Check for:
 - i. periorbital ecchymosis
 - ii. telecanthus (abnormally increased distance between medial canthi of the eyelids; normal 30-32 mm)
 - iii. crepitus, tenderness
 - iv. vertical dystopia
 - b. Feel around rim for step deformity
 - c. Feel for medial canthal ligament laxity (tug upper and lower eyelids laterally)
 - d. Ophthalmologic exam (consult ophthalmology if any concerns – should be consulted for any orbitozygomatic fractures since high percentage have associated ocular injury)
 - i. subconjunctival hemorrhage
 - ii. appearance of globe
 1. laceration?
 2. rupture?
 3. abrasion?
 4. exo/enophthalmos (look from above or below)



→ in this figure, the left eye is enophthalmic

- iii. papillary response (PERRLA)
 - iv. visual acuity
 - v. field of vision (finger counting)
 - vi. EOM movement (entrapment? does the patient experience changes in vision/double vision while doing ROM?)
 1. Do forced duction test if decreasing LOC or exam unclear to differentiate between neural injury, edema or muscle entrapment
 - a. Anesthetize eye with topical anesthetic and grasp conjunctiva
 - b. Must be careful not to injure cornea (do under supervision if not experienced)
6. Nose:
- a. Ecchymosis, crepitus, tenderness
 - b. Nasal bone stability
 - c. Septal deviation
 - d. Septal hematoma (must be drained to prevent septal cartilage necrosis)
7. Zygoma:
- a. Ecchymosis, crepitus, downslowing of palpebral fissure, tenderness
 - b. Flattening (look from above or below)
 - c. Step deformity (palpate body and arch)
 - d. Changes in arch width (seen when put fingers on arch to determine if there is medial or lateral displacement of the body of the zygoma or arch)
8. Ears:
- a. Exposed cartilage, missing segments
 - b. Perichondrial hematoma (must be drained to prevent cartilage necrosis)
 - c. Examine ear canal → lacerations, foreign bodies, otorrhea, hemotympanum, tympanic membrane rupture
 - d. Bruising of canal (condylar fracture)
 - e. Look for Battle's sign = bruising of mastoid process (basal skull fracture)
9. Maxilla:
- a. Ecchymosis, crepitus, tenderness
 - b. Stability (hold head stable with one hand; with other hand, hold the anterior aspect of the maxilla and see if the maxilla moves independently from the facial bones/head)
10. Mandible:
- a. Put fingers on TMJ (check for tenderness, ask patient to open mouth → pain?)
 - i. Feel for clicking, grinding or pain
 - ii. Able to open/close mouth fully? (full ROM?)
 - b. Feel along bone for crepitus, step deformity, pain
 - c. Push on mandibular angles bilaterally to see if there is any tenderness (+ pain if fracture present because this maneuver opens up the fracture site)
11. Oral exam:
- a. Ecchymosis (palate, buccal, sublingual, floor of mouth), swelling
 - b. Missing teeth (fresh empty sockets) or broken/fractured teeth → if patient has missing or broken teeth, must obtain CXR to r/o aspiration
 - c. Occlusion and bite
 - d. Tongue and buccal mucosa → lacerations?
 - e. Gums → fracture lines (gingival tears)?
12. Cranial nerves (2-12):
- a. Check for paresthesia or motor deficit

Note: Instruct patient not to blow nose/restrict sneeze: can push air into soft tissues and lead to increased swelling and a higher risk of infection if sinus fractures present