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
      - canicular 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. crepitas, 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 is 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)
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, downsloping 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