Traumatic Injuries of the Eye

Key history:
- Do they wear corrective lenses?
- Have they had eye surgery?
- Do they have glaucoma?
- What medications do they use
- Was the injury BLUNT OR PENETRATING?
- Was there missile injury?
- Was there thermal, chemical or flash burn?
- Was there immediate pain or photophobia?
- Was the decrease in vision immediate or progressive?

Physical examination
- VISUAL ACUITY
- EYELIDS:
  - Edema
  - Ecchymosis
  - Evidence of burns
  - Ptosis
  - Lacerations
  - Foreign bodies
  - Canthal avulsions
- ORBITAL RIM
  - Subcutaneous emphysema – fracture into the ethmoid or maxillary sinus
  - Deformities of fracture
- GLOBE
  - Retract the lids and look for hematoma
- PUPIL
  - Reaction to light
  - Test for afferent papillary defect: optic nerve trauma causes a failure of both pupils to constrict when a light is shined at the affected eye
- CORNEA
  - Opacity, ulceration, foreign bodies
- CONJUNCTIVA
  - Chemosis, subconjunctival emphysema, foreign bodies
- ANTERIOR CHAMBER
  - Hyphaema
    - Shine a light across the pupil; it should illuminate the whole iris.
      - If not → shallow anterior chamber, maybe a penetrating wound to the anterior chamber
- IRIS
  - Should be reactive and of a regular shape
  - Iridodialysis = tear of the iris
  - Iridodonesis = floppy tremulous iris
- LENS
  - May be displaced into the anterior chamber
  - Should be transparent
- VITREOUS
  - Should be able to see the fundus (otherwise there may be hemorrhage)
  - If there is hemorrhage, you will get a BLACK REFLEX instead of a red reflex
- RETINA
  - A detached retina is opalescent, and the blood columns are darker
SPECIFIC INJURIES

- EYELID INJURY
  - Lacerations may be closed with nylon sutures if they are
    - HORIZONTAL
    - SUPERFICIAL
    - Not involving the levator in the upper lid
  - CALL THE OPHTHALMOLOGIST IF:
    - Medial canthus wounds (may involve the lacrimal duct or medial canaliculus)
    - Deep horizontal lacerations
    - Lid margin lacerations which may lead to notching
    - COVER THESE WOUNDS WITH A SALINE DRESSING
  - Penetrating foreign bodies should not be disturbed

- CORNEAL INJURY
  - ABRASIONS heal quickly; give antibiotic drops

- ANTERIOR CHAMBER INJURY
  - HYPERHEMA = severe ocular trauma
  - Glaucoma will develop in 7% of patients with hyphema

- IRIS INJURY
  - Contusion = fixed pupil
  - Disruption of the ciliary body = irregular pupil and hyphema

- INJURY TO THE LENS
  - Usually due to severe blunt trauma

- VITREOUS INJURY
  - Sudden profound loss of vision
  - Usually due to blunt trauma

- RETINAL INJURY
  - Weirdly, there may or may not be visual acuity loss, depending on macula involvement
  - Blunt trauma or head injury
  - Light flashes and a curtain-like defect in the visual field

- GLOBE INJURY
  - IF YOU SUSPECT THIS, STOP TOUCHING THE EYE, FULLSTOP.
  - Sterile dressing and eye shield
  - Don’t remove foreign objects or clots

- CHEMICAL INJURY
  - Immediate intervention is required
  - Acid injury precipitates proteins and sets up a natural barrier, so it does not penetrate as far
  - Alkali injury combines with lipids, bursts cells, and penetrates more deeply
  - COPIOUS AND CONTINUOUS IRRIGATION IS THE KEY

- BLUNT TRAUMA
  - Orbital floor is the weakest point: “blowout” fractures
  - Diplopia and limitation of movement is a disturbing sign of muscle entrapment
  - There may be subcutaneous or subconjunctival emphysema
  - Hyperesthesia of the cheek occurs with infraorbital nerve injury

- RETROBULBAR HEMATOMA
  - Optic nerve and retinal blood supply is compromised
  - Requires IMMEDIATE INTERVENTION
  - Elevate the head

- FAT EMBOLISM
  - An explanation for a sudden loss of vision in a patient with multiple long-bone injuries