Primary Care Management of Anterior Segment Trauma

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Lids and Adnexa

- Laceration
  - All patients considered for tetanus
  - All patients receive complete exam
  - If possibility of orbital foreign body, ultrasound, maybe CT needed
  - Clean wound, irrigate with saline
  - Inspect area for retained foreign body

Lids and Adnexa

- Lacerations that should be referred
  - Associated with ruptured globe
  - Involving lacrimal drainage system
  - Involving levator or superior rectus
  - Associated with intraocular foreign body
  - Associated with extensive tissue loss > 1/3 of lid or severe distortion of anatomy

Preparing for repair

Aligning canaliculus
Ptosis secondary to???

Full Thickness Laceration

Repairing Full Thickness Laceration
Contusion

- Complete exam to rule out ruptured globe, Blow out fracture, Corneal abrasion
  - Cold compresses x 3 days then can start warm
  - If too swollen initially to inspect, do as much as possible, recall and ensure no further complications

Blow-Out Fracture

- Signs and Symptoms
  - Pain, especially on vertical eye movement
  - Double vision
  - Recent history of trauma
  - Eyelid swelling after nose blowing
  - Restriction of eye movement
  - Hypoesthesia of infraorbital nerve

Blow-Out Fracture

- Testing/indications for referral
  - Complete exam
  - Check sensation of check and upper lip
  - Check for eye movement restriction
  - If restriction lasts > 1 week - forced duction testing
  - CT scan of orbit - referral for repair if large fracture found, if persistent diplopia, or severe enophthalmos
Blow-Out Fracture

- **Treatment**
  - Nasal decongestants bid x 10 -14 days
  - Oral antibiotic x 10 - 14 days (keflex 250 - 500 qid)
  - Instruct patient not to blow nose
  - Ice packs for first 24 - 48 hours
  - Orbital roof fracture neurosurgical consult recommended

Lids and Adnexa - Burns

- **Chemical burn**
  - acid, base, solvents, detergents, irritants

- **Thermal burn**
  - Cigarettes, hot metal or oil, curling irons

- **Radiation burn**
  - Sunbathing/tanning bed, snow or water skiing, fishing

- **Chemical Burn Treatment**
  - Copious irrigation
  - Check pH - when neutral complete exam
  - Check fornices to ensure no material left
  - Cycloplege, antibiotic ung, pressure patch
  - With severe burn, may need referral
    - Blanching of conjunctiva
    - Severe cornea edema

Lids and Adnexa - Burns

- **Radiation burn treatment**
  - Cool compresses
  - Cycloplege
  - Antibiotic/steroid combo sol
  - May need analgesia
  - Do not patch if lids are burned

Radiation Burn
Lids and Adnexa - Burns

- Thermal Burn Treatment
  - Debride necrotic tissue
  - Cycloplege
  - Antibiotic/steroid combo solution
  - Do not patch if lids burned

Thermal Burn

Conjunctiva/Sclera Foreign Body

- Remove foreign body/Rust ring
  - Spud
  - Needle
  - Alger Brush
- Depending on size/depth of defect may need bandage lens or patch
- Antibiotic solution or ointment
- DFE, Ultrasound, Radiologic studies if possibility of penetration

Bug Shell

Conjunctival Laceration

- Exam to rule out globe penetration
- If no penetration - in office treatment
  - Antibiotic ointment
  - Cycloplege
  - Patch
- Some recommend if >1.5 cm, suture
Conjunctival Laceration

Subconjunctival Hemorrhage
- Treatment
  - Rule out globe penetration, if suspicious refer for exploratory investigation
  - Rule out retrobulbar hemorrhage
  - Artificial tears
  - Cool compresses first 48 hours, then warm

Subconjunctival Hemorrhage

Subconjunctival Hemorrhage

Subconjunctival Hemorrhage

Subconjunctival Hemorrhage

Conjunctival Burns
- Radiation
- Thermal
- Chemical
  - Treatment and management same as previously covered
Thermal Burn

Chemical Burn

Chemical Burn - Symblepharon

Cornea Foreign Body
- Remove foreign body/Rust ring
  - Spud
  - Needle
  - Alger Brush
- Depending on size/depth of defect, may need bandage lens or patch
- Antibiotic solution or ointment
- DFE, Ultrasound, Radiologic studies if possibility of penetration

Glass

Rust Ring
**Corneal Laceration**

- Exam to rule out globe penetration
  - If wound gape, + Seidel’s sign, flat anterior chamber - shield eye and refer
- If no penetration - in office treatment
  - Antibiotic ointment or solution
  - Cycloplege
  - Bandage lens or patch

**Corneal Abrasion**

- Treatment
  - Cycloplege
  - Antibiotic ointment or solution
  - Patch or bandage lens
Corneal Burns
- Radiation
- Thermal
- Chemical
  - Treatment and management same as previously covered

UV Burn

Curling Iron Burn

Chemical Burn
Chemical Burn

Hyphema

- Microhyphema
  - Suspended RBC’s only
- Hyphema
  - Layering and/or clotting of RBC’s
- Rule out ruptured globe in both cases

Hyphema

- Microhyphema - compliant patient
  - Outpatient treatment if no risk/evidence of rebleed
  - No aspirin products
  - Sleep with head elevated
  - If IOP increases treat with beta blocker
  - Cycloplege
  - Daily follow up x 4 days, then 1 week

Hyphema

- Hyphema or unreliable microhyphema patient
  - Hospitalize - bed rest with head elevated 30 degrees
  - Amikar
  - Shield the eye
  - Cycloplege
  - No aspirin
  - Beta blocker if pressure increase

Hyphema

- Surgery indicated if:
  - IOP > 60 mm Hg for at least 72 hours
  - Vision deteriorates significantly
  - Corneal stromal blood staining occurs
  - Substantial clot persists for 7 days
  - Entire anterior chamber filled with blood
Hyphema

Uveitis

- Subclinical Treatment
  - Cycloplege

- Mild treatment
  - Cycloplege, Steroid solution

- Moderate treatment
  - Cycloplege, steroid solution, steroid ointment

- Severe treatment
  - Same treatment, add steroid dosepak

Iridodialysis

- Complete exam to rule out other complications
  - Ruptured globe, Retinal damage

- Could cause monocular diplopia

- Reconstruction usually delayed until one year unless associated with lens damage

Iridodialysis

Angle Recession

- May be associated with traumatic mydriasis

- Need to be monitored yearly for glaucoma
Thank You!