

# Ocular Lecture

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# Triaging Ocular Complaints

- Painful Eye/Red eye
  - +/-blurry vision
  - +/-visual loss
  - +/-floaters
  - +/-fevers
- If any of the above findings exist, pt is likely to have a more urgent/emergent eye problem and therefore requires increased level of acuity.
- Visual Acuities (**MUST BE PERFORMED ON ALL PTS WITH EYE COMPLAINT**)
  - Objective baseline measurement
  - Comparison (OD vs OS)
  - Include with or without correction

# Triaging Ocular Complaints

- Periorbital swelling
  - Surrounding eye redness
  - i.e periorbital cellulitis
    - Commonly seen in children
    - Requires IV antibiotics and admission
    - Complications: CNS infection (meningitis, epidural abscess, subdural empyemas, brain abscess), orbital involvement (cellulitis, abscess), Cavernous sinus thrombosis, Toxic shock syndrome, Eschar formation leading to scarring

# Triaging Ocular Complaints

- Facial Symmetry
  - Proptosis
  - Facial droop
  - Consider Bells Palsy/CVA

# Ocular Emergencies

- Vision loss
- Closed-angle glaucoma
- Retinal Detachment
- FB
- Orbital Fracture
- Corneal Abrasion/Lacerations
- Chemical Burn
- Central Retinal Artery Occlusion
- Ruptured Globe
- Retrobulbar hematoma

# Acute Painless Visual Loss

- Diff Dx:
  - CVA
  - Central Retinal Artery Occlusion
  - Central Retinal Vein Occlusion
  - Wet Macular Degeneration
  - Vitreous Hemorrhage

# The Red Eye

- Dilation of blood vessels in the eye
- Differential Diagnosis
  - Blepharitis
  - Canaliculitis
  - Conjunctivitis (viral, bacterial, allergic)
  - **Corneal Inflammation/Infection**
  - Dacryocystitis
  - Episcleritis
  - FB
  - Iritis
  - Keratoconjunctivitis
  - **Narrow-angle glaucoma**
  - Pterygium
  - Scleritis
  - Subconjunctival hemorrhages

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# Blepharitis

- Inflammation of the eyelids usually involving the lid margins
- Often associated with conjunctivitis

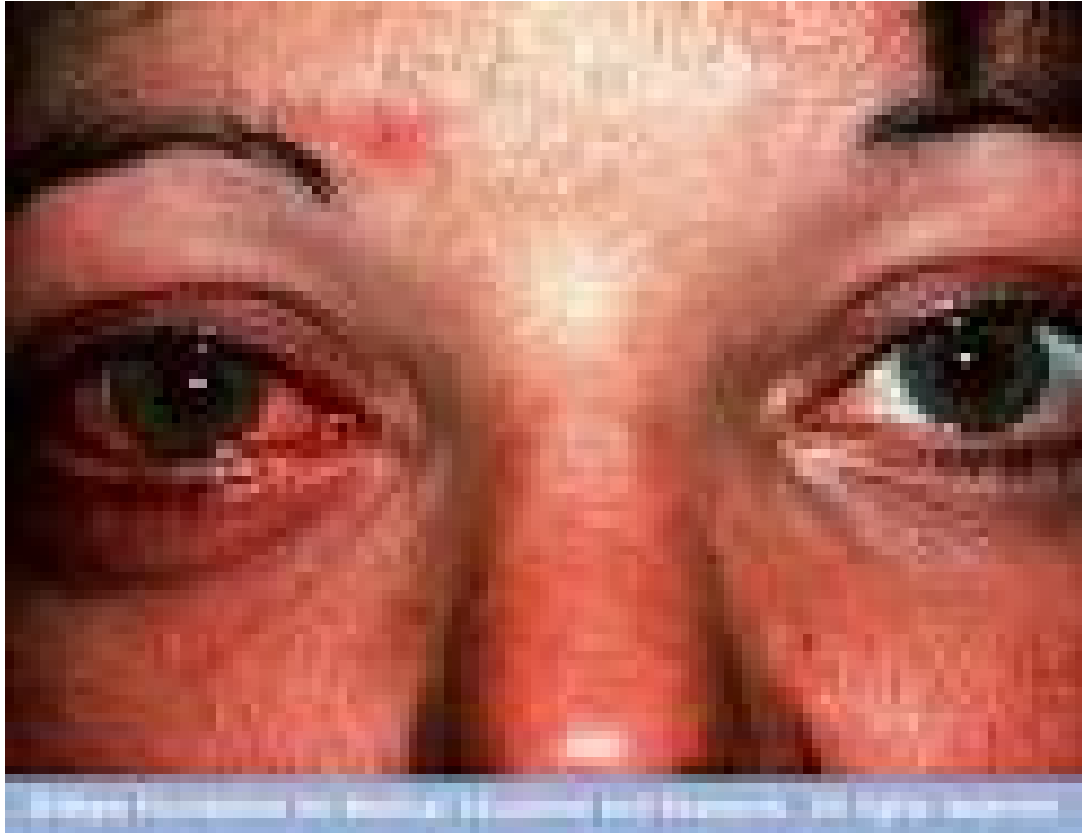
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# Canaliculitis

- Characterized by a mildly red eye
- Usually unilateral
- Slight discharge that can be expressed from the canaliculus

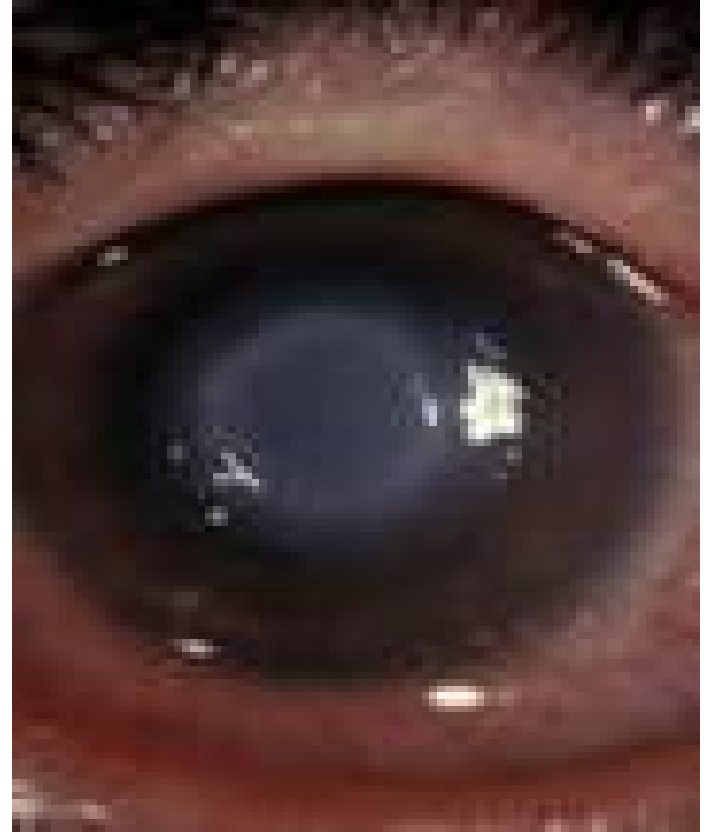
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# Conjunctivitis

- Vascular dilation
- Cellular infiltration
- Exudation
- 3 types
  - Allergic
  - Viral
  - Bacterial

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# Corneal Infection

- Decreased visual acuity
- Photophobia
- Severe pain
- Opacification of the cornea  
(OPHTHALMIC EMERGENCY)

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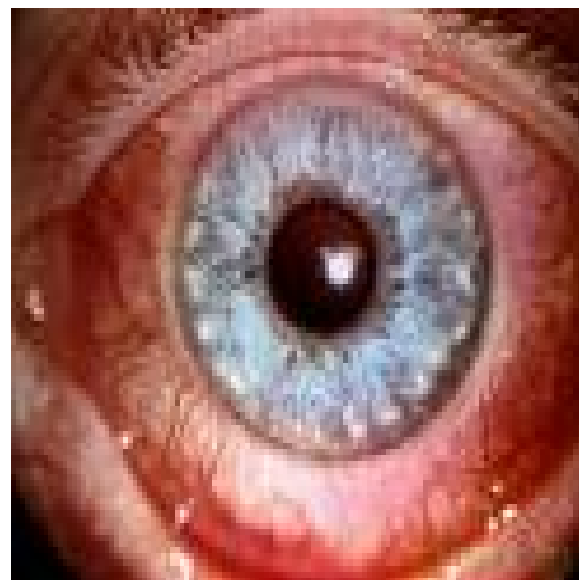
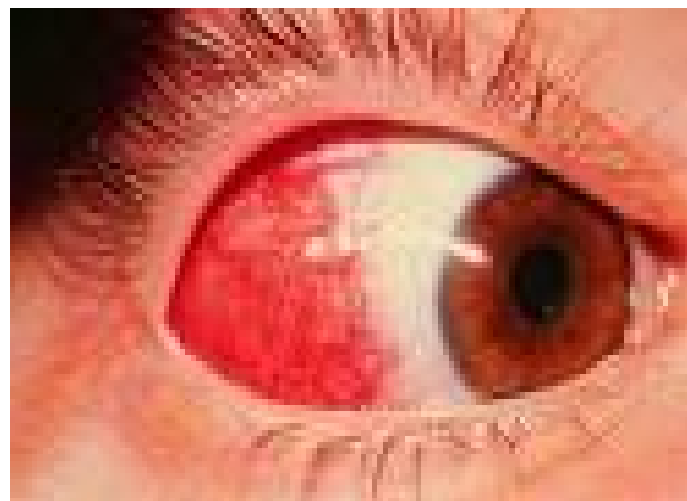
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# Dacrocystitis

- Localized pain, edema, erythema over the lacrimal sac at the medial canthus
- Usually unilateral
- Often purulent drainage

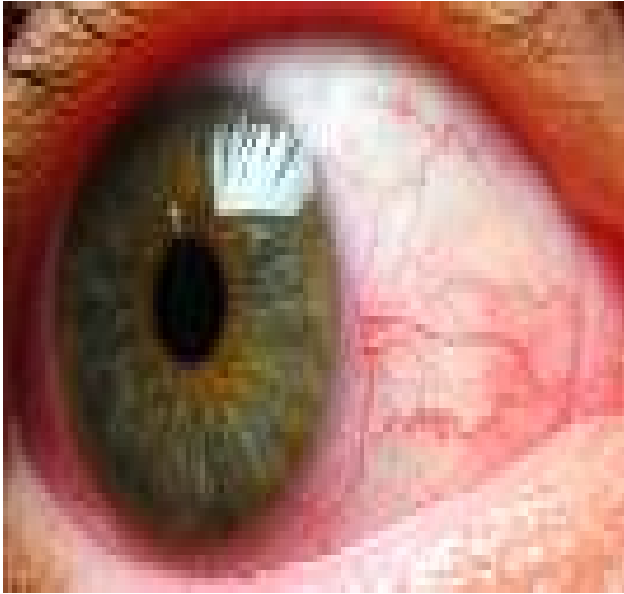
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# Episcleritis

- Differentiated from the injection of the more superficial conjunctival vessels and from the deeper scleral vessels.
- Unlike Conjunctivitis, the inflammation tends to be limited to an ISOLATED PATCH
- Hx of recurrent episodes is common
- Mild to moderate tenderness over the area of injection

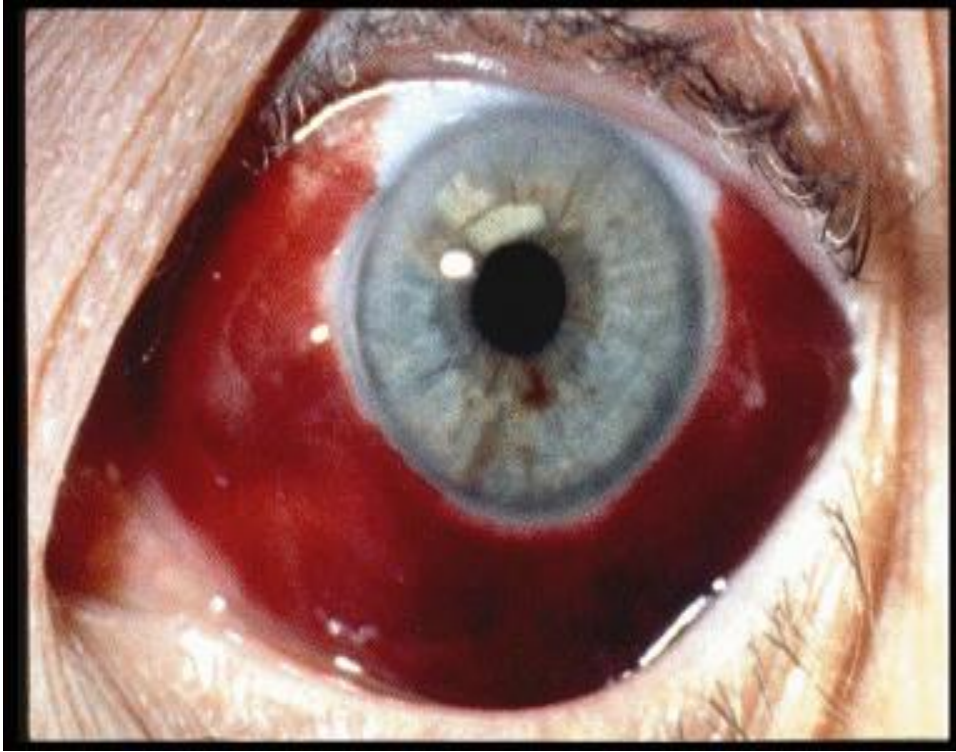
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# Iritis

- Perilimbal flush due to dilation of the radial vessels
- Compared to conjunctivitis, in which the intensity of the vascular engorgement decreases toward the limbus
- +/- decreased visual acuity
- Usually unilateral

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# Subconjunctival Hemorrhage

- May occur spontaneously
  - i.e. If pt is on anticoagulants
- Or secondary to trauma
  - i.e. Increased pressure: singing, screaming etc
- May appears as a flat thin Hemorrhage or a thicker collection of blood

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# Hyphema

- Mostly due to trauma.
- Postinjury accumulation of blood in the anterior chamber
- The agent producing a hyphema is usually projectile
- Spontaneous hyphemas are rare.
  - i.e secondary to neoplasms, vascular anomalies, neovascularization such as from DM, ischemia

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# Chemosis

- Cornea is recessed and the conjunctiva is swollen
- Due to allergic reaction.
- Treat with antihistamines

# Narrow(Closed) Angle Glaucoma

- Severely painful red eye
- Haloes around light are common
- >50 years and older
- IOP elevated
- Nausea, vomiting common
- Reduced visual acuity
- Immediate referral to optho

# Retinal Detachment

- Separation of the “neurosensory layer” of the retina from the underlying choroid and retinal pigment epithelium
- “Black curtain coming down over visual field”
- Bright flashes of light
- Retina needs to be replaced onto underlying nourishing layers.
- Urgent/emergent complaint

# Chemical Burn

- A TRUE OCULAR EMERGENCY
- Test pH
- IRRIGATE, IRRIGATE, IRRIGATE
  - 30 minutes using IV NS or LR's with morgan's lens.
- Morgans lens alternatives
  - Use the tubing and tape over pt's eye.
- Acid vs Alkali
  - Alkali causes necrosis. Will destroy vessels and denature collagen (Lipophilic- so it absorbs into the eye more easily, causing more damage)
    - i.e household cleaners (bleach), fertilizers
  - Acid also cause a necrosis. Less common
    - i.e sulfuric acid (automobile batteries), industrial cleaners

# Ruptured Globe

- Occurs from penetrating trauma to cornea or sclera
- Extravasation of the intraocular contents
- May lead to irreversible vision loss or Endophthalmitis
- S/S: pain, decreased vision, hyphema, “tear drop” pupil, severe subconj hemorrhage
- Management: immediately place an eye shield to protect eye from further manipulation
- **DO NOT PERFORM TONOMETRY**

# Central Retinal Artery Occlusion

- Caused by an emboli to the retinal artery (leads to an ocular stroke)
- s/s: extremely sudden, acute unilateral PAINLESS vision loss
- Ocular exam: **Cherry red spot** on fundoscopic exam (cilioretinal artery will maintain perfusion of macula, so the macula appears pink and healthy against the ischemic retina)