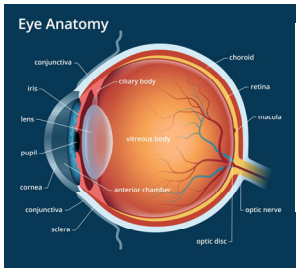
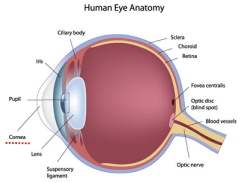
The Eye

Melissa Platt, MD





- Blepharitis
- Hordeolum (stye)/Chalazion
- Conjunctivitis

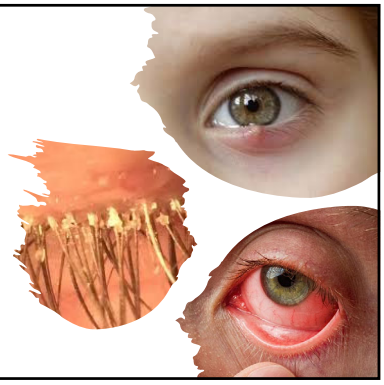


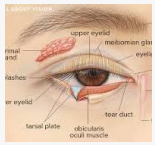
Table 1. How to Differentiate Bacterial from Viral Conjunctivitis

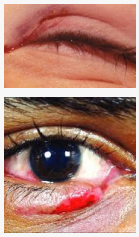
Bacterial	Viral
Mucopurulent discharge	Watery discharge
Bilateral	Unilateral
Preschoolers (3.6 yrs)	Older children (7.5 yrs)
Otitis media	Pharyngitis
No adenopathy	Adenopathy
Both can be highly contagious!	

Sources: Bodor FF, et al. *Pediatrics*. 1985;76:26-28; Tarabishy AB, et al. *Cleve Clin J Med*. 2008;75:507-512.

Lid lacerations

- Ophthalmology referral if
  - Torn lid margins
  - Lacrimal duct damage
  - Tarsal plate
  - Canthal





Preseptal cellulitis (sometimes called periorbital cellulitis) is an infection of the anterior portion of the eyelid, not involving the orbit or other ocular structures.

The orbital septum

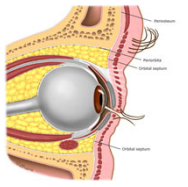


Diagram showing the proximity of the periosteum in relation to the orbital septum. Orbital cellulitis arises posterior to the orbital septum.

UpToDate

Preseptal edema and erythema

This young girl has erythema and edema in the preseptal area, which could be caused by either orbital or preseptal infection.

UpToDate

- In contrast, orbital cellulitis is an infection involving the contents of the orbit (fat and ocular muscles) but not the globe.

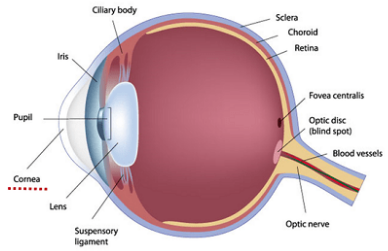
Clinical features of preseptal and orbital cellulitis

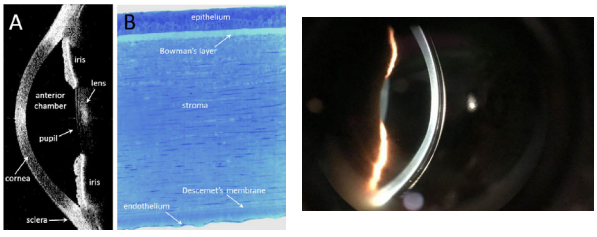
Clinical feature	Preseptal cellulitis	Orbital cellulitis
Eyelid swelling with or without erythema	Yes	Yes
Eye pain/tenderness	May be present	Yes; may cause deep eye pain
Pain with eye movements	No	Yes
Proptosis	No	Usually, but may be subtle
Ophthalmoplegia +/- diplopia	No	May be present
Vision impairment	No	May be present*
Chemosis	Rarely present	May be present
Fever	May be present	Usually present
Leukocytosis	May be present	May be present

* An afferent pupillary defect may signal impending visual loss.

References:

Human Eye Anatomy





Keratitis- inflammation of the cornea

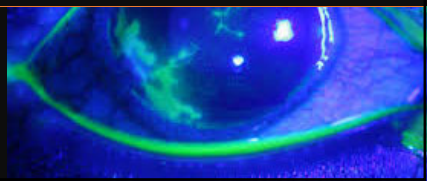
Corneal Abrasion

Treatment

- No patch
- topical nonsteroidal anti-inflammatory drugs
- mydriatics are not effective for treatment of corneal abrasions and are not recommended
- Consider use of topical antibiotics in patients with corneal abrasions
- Discontinue contact lens use in patients with corneal abrasions

- Re-evaluated in 24 hours; if the abrasion has not fully healed, they should be evaluated again three to four days later.
- Patients who wear contact lenses should be re-evaluated in 24 hours and again three to four days later even if they feel well.
- Any worsening of symptoms should prompt a thorough re-evaluation for foreign bodies or full-thickness injuries. Immunocompromised or monocular patients also warrant closer attention and may require earlier ophthalmologic referral.
- Patients who wear contact lenses should be referred if there is no improvement in symptoms within a few hours of lens removal.

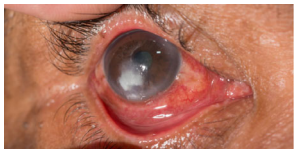
Herpetic lesions

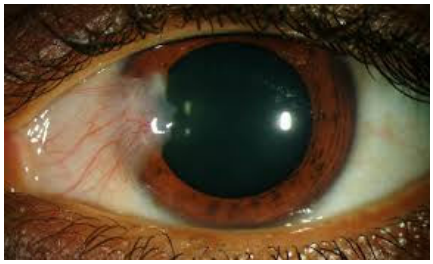


Cornea ulcer

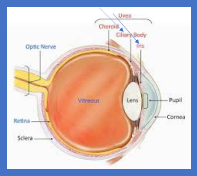
Culture

Drops every hour– send patients home with drops





The Uvea



Uveitis

Sclera

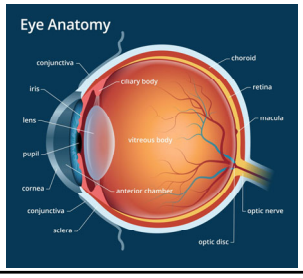
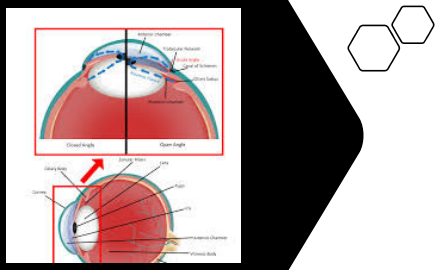


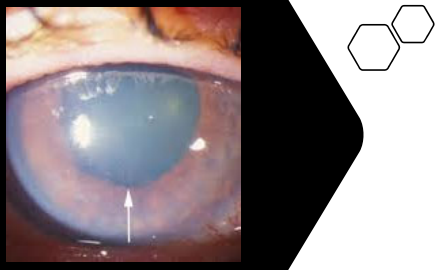
Figure 1. Slit-lamp photograph depicting diffuse anterior scleritis

Note the dilated blood vessels and generalized inflammation.

Not to be confused with subconjunctival hemorrhage

- Can be caused by something as little as a sneeze
- Resolved on own






TONO-PEN XL
Reichert


Reichert
13
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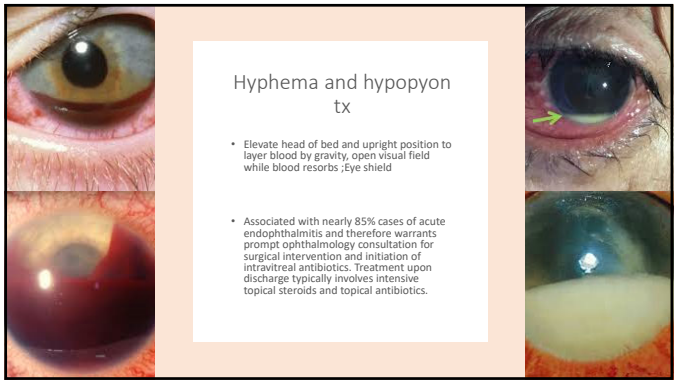
TONO-PEN AVIA

Treatment

- Decreased production of aqueous humor
  - Timolol 0.5%
  - Acetazolamide (po is actually preferred)
    - Can substitute methazolamide if patient has renal failure
    - Do not give in sickle cell patients
  - Dorzolamide 2%
    - Carbonic anhydrase inhibitor
  - Alpha agonist (alphagan)
- Facilitate outflow of aqueous humor
  - Pilocarpine
- Reduce volume of aqueous humor
  - Mannitol

Anterior Chamber

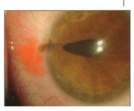
- Hyphema
- Greater than 1/3 can lead to increased IOP
- Recurrent bleeding in up to 10%
- Can be associated with retinal detachment
- Iris damage-poor pupil reactivity
- Lens can be damaged
- Hypopyon
- Sterile pus because it is due to release of toxins and not actual invasion of pathogens
- Can result from ulcer, endophthalmitis



The globe

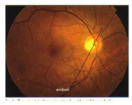
Ruptured Globe

- May be from blunt or penetrating trauma
- Occurs at thinnest part:
  - Limbus (Visible with slit lamp)
  - Insertions of the extra-ocular muscles (reduced eye movements, loss red reflex from vitreous haemorrhage)
  - Around the optic nerve
- Signs:
  - Pupil : peaked, teardrop-shaped, or otherwise irregular
  - Seidel's Sign
  - Enophthalmos (recession of the globe within the orbit)
  - Exophthalmos from retrobulbar hemorrhage



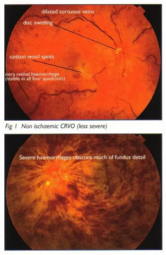
Central Retinal Artery Occlusion

- Embolism
  - Most commonly cholesterol, cardiac (assoc HT,DM) can be calcific, bacterial, Giant cell arteritis
- Amaurosis Fugax : transient loss of vision lasting seconds to minutes, can precede →
- Mx Urgent ophthal referral
  - Decrease intra-ocular pressure
    - Acetazolamide/Anterior chamber paracentesis
  - Move clot
    - Pulsed ocular compression
    - Anticoagulate
    - Intra-arterial fibrinolysis

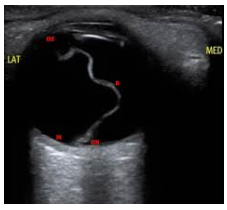


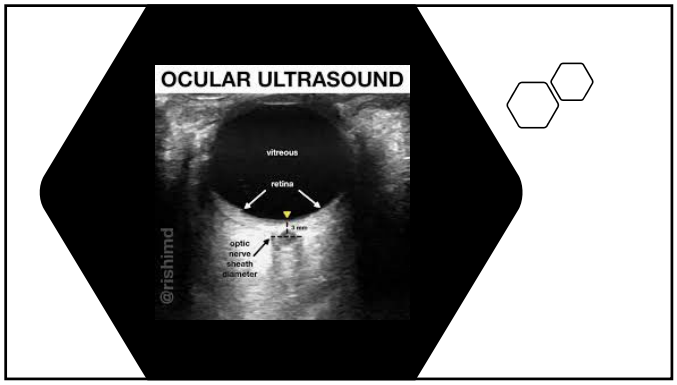
Central Retinal Vein Occlusion

- Sudden painless loss of vision
- R/F: age, HT, DM, prothrombotic disorders
- Types: Non-ischaemic and Ischaemic
- Signs: Decreased visual acuity, Relative Afferent pupillary Defect, abnormal red reflex
- Fundus haemorrhage ("Stormy sunset")
- Mx Ophthal referral
  - Anticoag, aspirin
  - Surgery incl. Laser photocoagulation



Retinal Detachment




OCULAR ULTRASOUND
vitreous
retina
optic nerve sheath diameter
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Thank you