

DIFFERENTIATE RED EYE DISORDERS

- Needs immediate treatment
- Needs treatment within a few days
- Does not require treatment



SUBJECTIVE EYE COMPLAINTS

- Decreased vision
- Pain
- Redness

Characterize the complaint through history and exam.

TYPES OF RED EYE DISORDERS

- Mechanical trauma
- Chemical trauma
- Inflammation/infection

ETIOLOGIES OF RED EYE

1. Chemical injury
2. Angle-closure glaucoma
3. Ocular foreign body
4. Corneal abrasion
5. Uveitis
6. Conjunctivitis
7. Ocular surface disease
8. Subconjunctival hemorrhage

RED EYE: POSSIBLE CAUSES

- Trauma
- Chemicals
- Infection
- Allergy
- Systemic conditions

RED EYE: CAUSE AND EFFECT

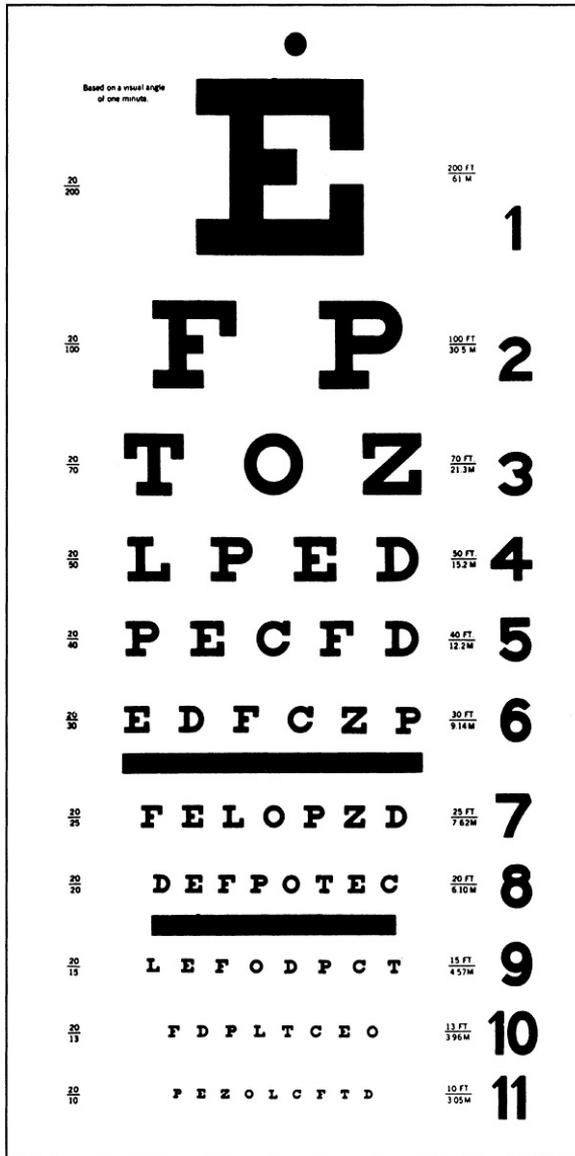
Symptom	Cause
Itching	Allergy
Burning	Lid disorders, dry eye
Foreign body sensation	Foreign body, corneal abrasion
Localized lid tenderness	Hordeolum, chalazion

RED EYE: CAUSE AND EFFECT (Continued)

Symptom	Cause
Deep, intense pain	Corneal abrasions, scleritis, iritis, acute glaucoma, sinusitis, etc.
Photophobia	Corneal abrasions, iritis, acute glaucoma
Halo vision	Corneal edema (acute glaucoma, uveitis)



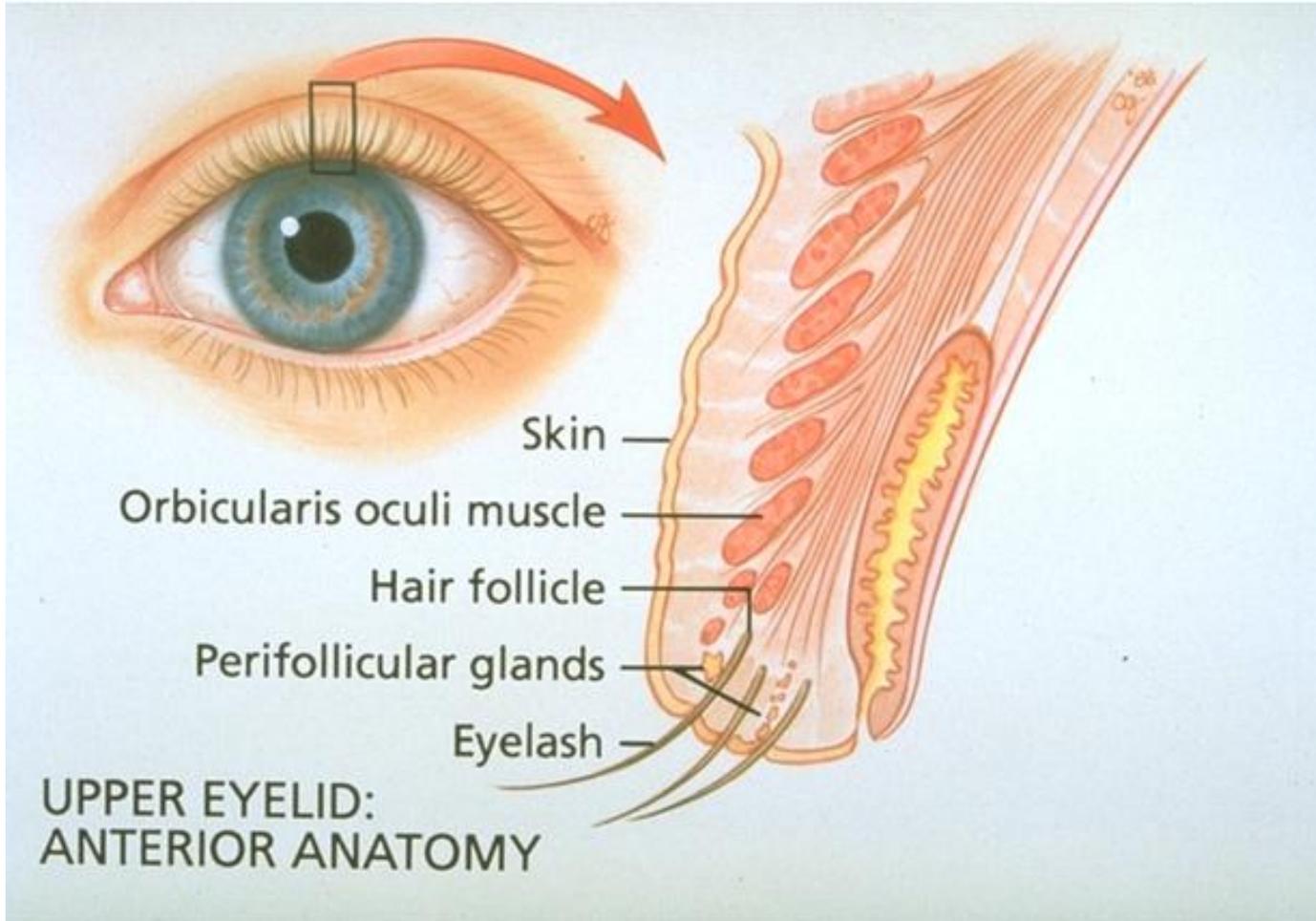
Equipment needed to evaluate red eye



Refer red eye with vision loss to ophthalmologist for evaluation

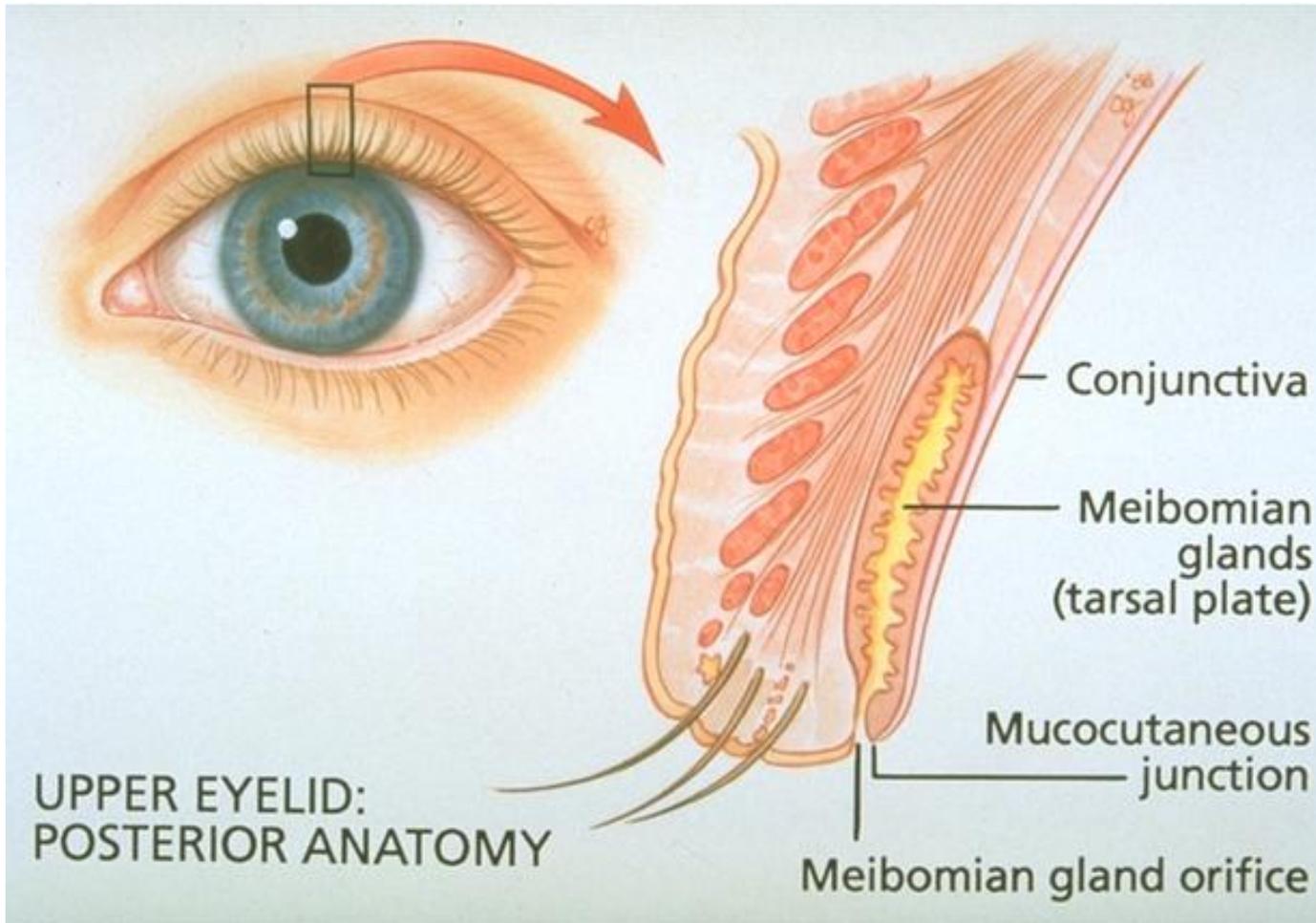
RED EYE DISORDERS: AN ANATOMIC APPROACH

- Face
- Adnexa
 - Orbital area
 - Lids
 - Ocular movements
- Globe
 - Conjunctiva, sclera
 - Anterior chamber (using slit lamp if possible)
 - Intraocular pressure





Hordeolum





Chalazion

HORDEOLUM/CHALAZION: TREATMENT

- **Goal**
 - To promote drainage
- **Treatment**
 - Acute/subacute: Warm-hot compresses, tid
 - Chronic: Refer to ophthalmologist

BLEPHARITIS

- Inflammation of lid margin
- Associated with dry eyes
- Seborrhea causes dried skin and wax on base of lashes
- May have Staphylococcal infection
- Symptoms: lid burning, lash mattering



Collarettes on eyelashes of patient with blepharitis

BLEPHARITIS: TREATMENT

- Lid and face hygiene
 - Warm compresses to loosen deposits on lid margin
 - Gentle scrubbing with nonirritating shampoo or scrub pads
- Artificial tears to alleviate dry eye
- Antibiotic or antibiotic-corticosteroid ointment
- Oral doxycycline 100 mg daily for refractory cases



Preseptal cellulitis



Orbital cellulitis

ORBITAL CELLULITIS: SIGNS AND SYMPTOMS

- External signs: redness, swelling
- Motility impaired, painful
- \pm Proptosis
- Often fever and leukocytosis
- \pm Optic nerve: decreased vision, afferent pupillary defect, disc edema



ORBITAL CELLULITIS: MANAGEMENT

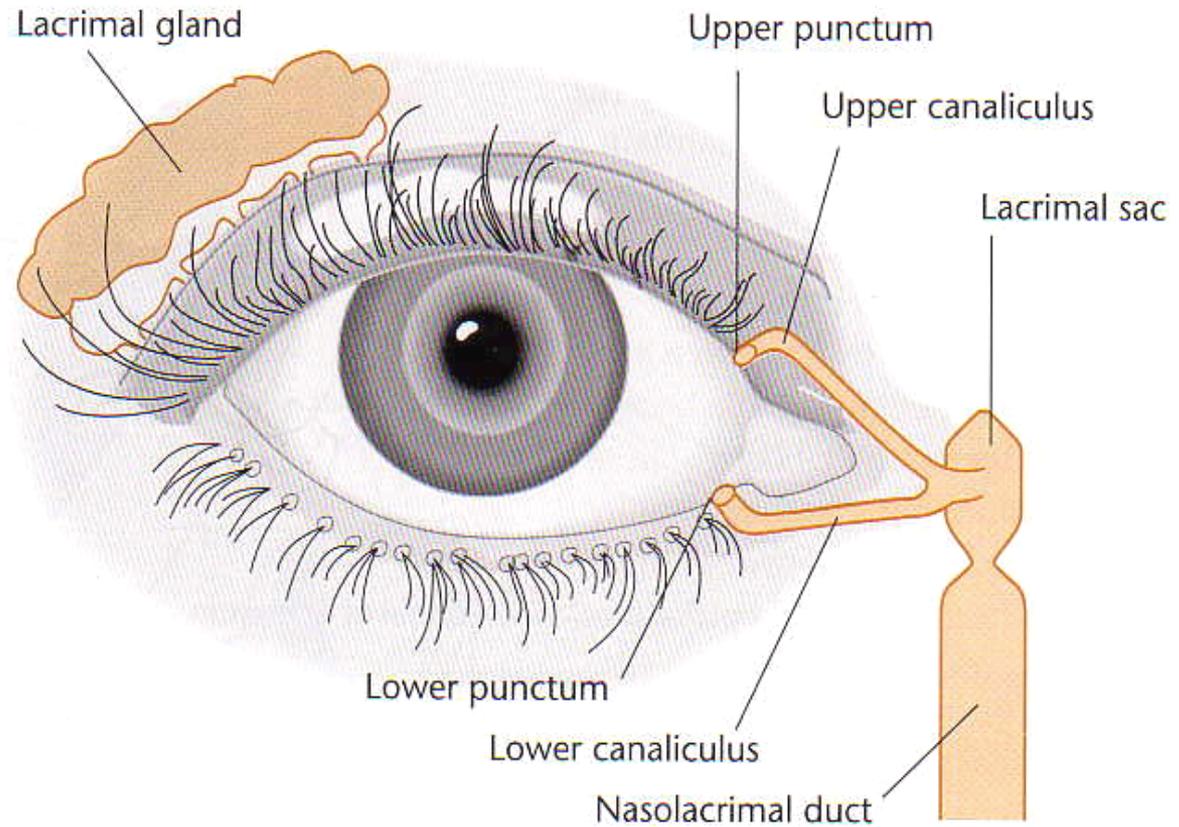
- Hospitalization
- Ophthalmology consult
- Eye consult
- Blood culture
- Orbital CT scan
- ENT consult if pre-existing sinus disease

ORBITAL CELLULITIS: TREATMENT

- IV antibiotics stat: Staphylococcus, Streptococcus, H. influenzae
- Surgical debridement if fungus, no improvement, or subperiosteal abscess
- Complications: cavernous sinus thrombosis, meningitis

Lacrimal System Disorders

The lacrimal apparatus.



Lacrimal system



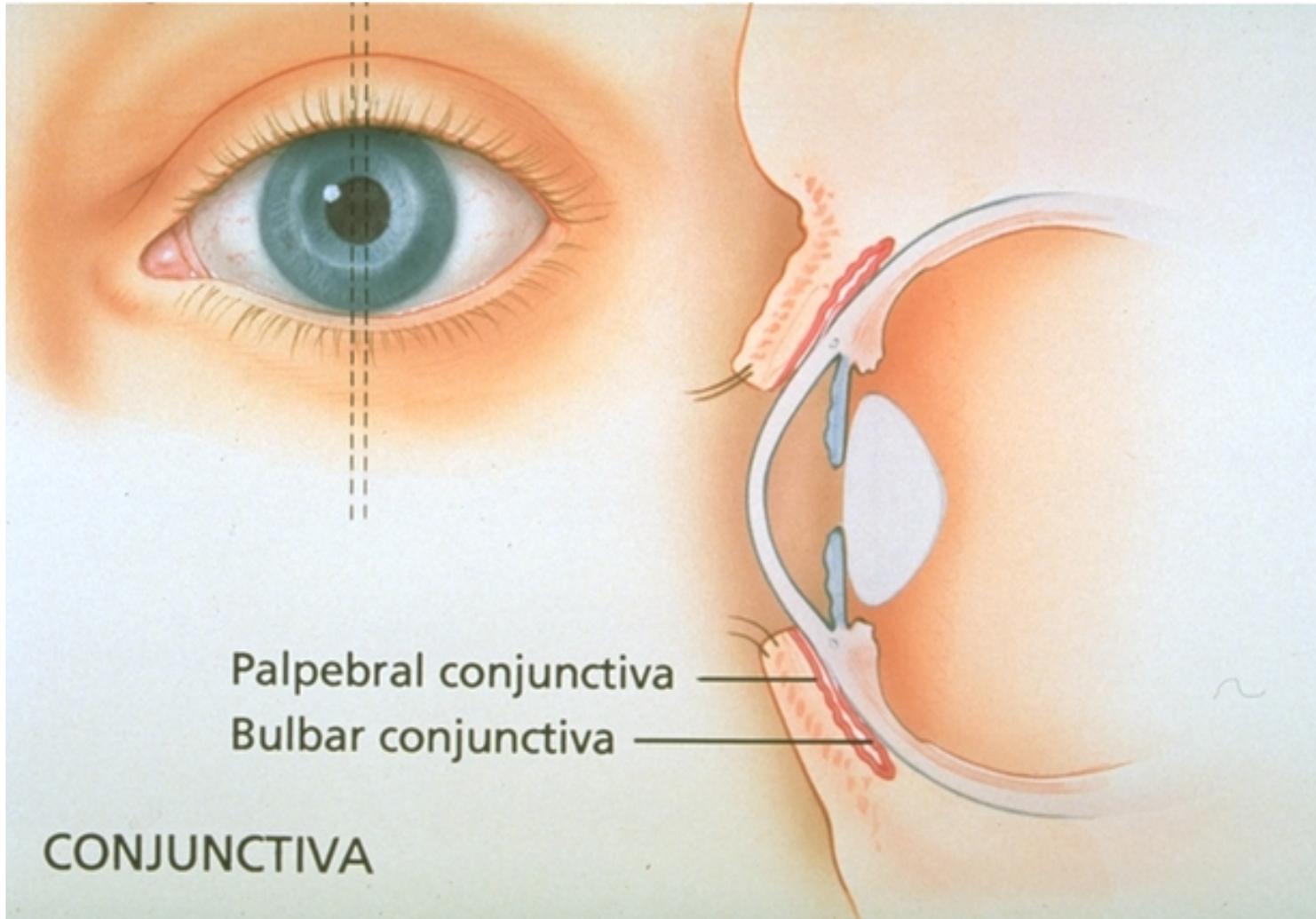
Dacryocystitis

NASOLACRIMAL DUCT OBSTRUCTION: CONGENITAL

- Massage tear sac daily
- Probing, irrigation, if chronic
- Systemic antibiotics if infected

NASOLACRIMAL DUCT OBSTRUCTION: ACQUIRED

- Trauma a common cause
- Systemic antibiotics if infected
- Surgical procedure after one episode of dacryocystitis (dacryocystorhinostomy) prn





Dilated conjunctival blood vessels

ADULT CONJUNCTIVITIS: MAJOR CAUSES

- Bacterial
- Viral
- Allergic

CONJUNCTIVITIS: DISCHARGE

Discharge	Cause
Purulent	Bacterial
Clear	Viral*
Watery, with stringy; white mucus	Allergic**

* Preauricular lymphadenopathy signals viral infection

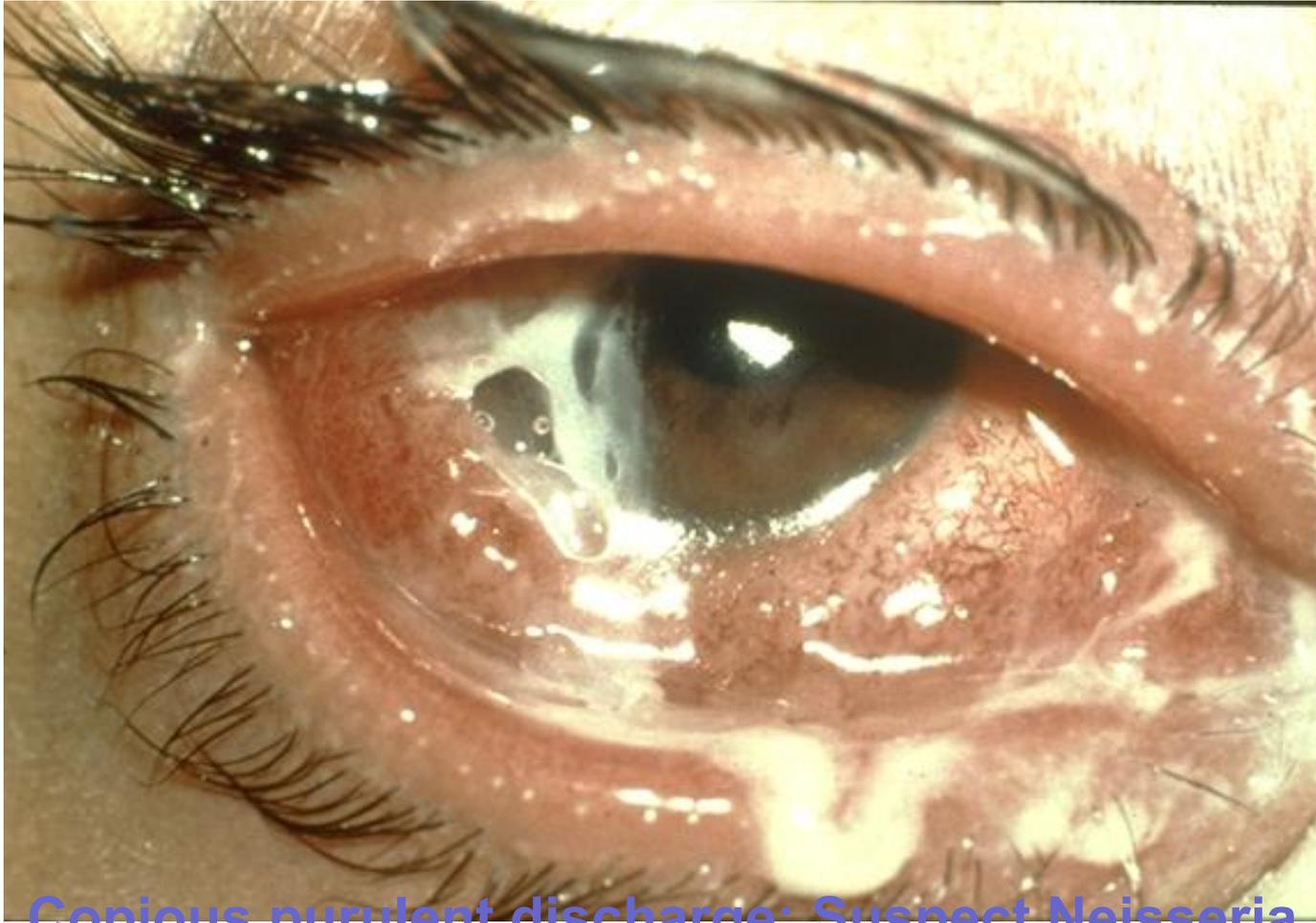
** Itching often accompanies

BACTERIAL CONJUNCTIVITIS: COMMON CAUSES

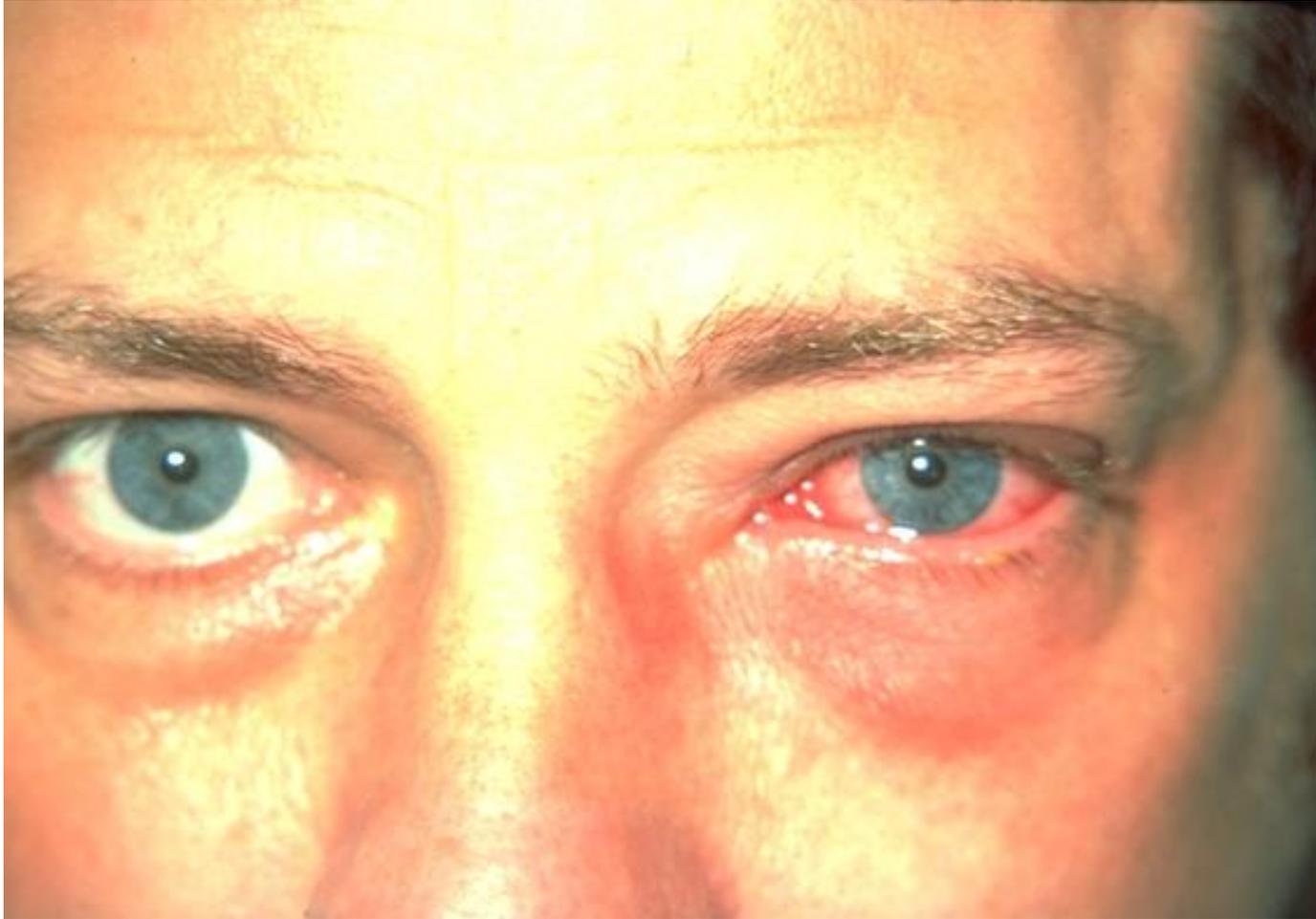
- *Staphylococcus* (skin)
- *Streptococcus* (respiratory)
- *Haemophilus* (respiratory)

BACTERIAL CONJUNCTIVITIS TREATMENT

- Topical antibiotic: qid x 7 days (aminoglycoside, erythromycin, fluoroquinolone, sulfacetamide, or trimethoprim-polymyxin)
- Warm compresses
- Refer if not markedly improved in 3 days



Copious purulent discharge: Suspect *Neisseria gonorrhoeae*.

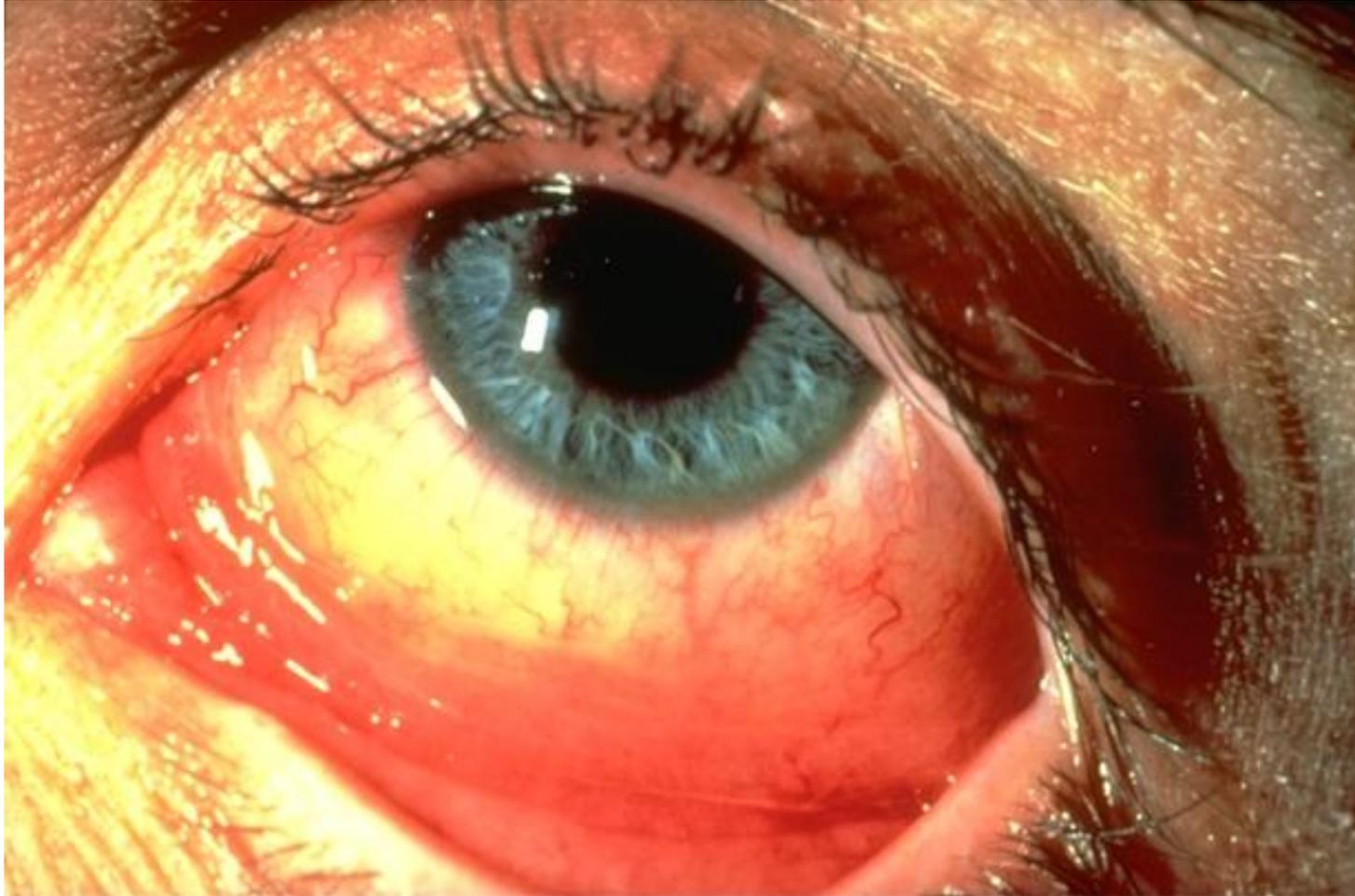


Viral conjunctivitis

VIRAL CONJUNCTIVITIS

- Watery discharge
- Highly contagious
- Palpable preauricular lymph node
- History of URI, sore throat, fever common

If pain, photophobia, or decreased vision, refer.



Allergic conjunctivitis

ALLERGIC CONJUNCTIVITIS

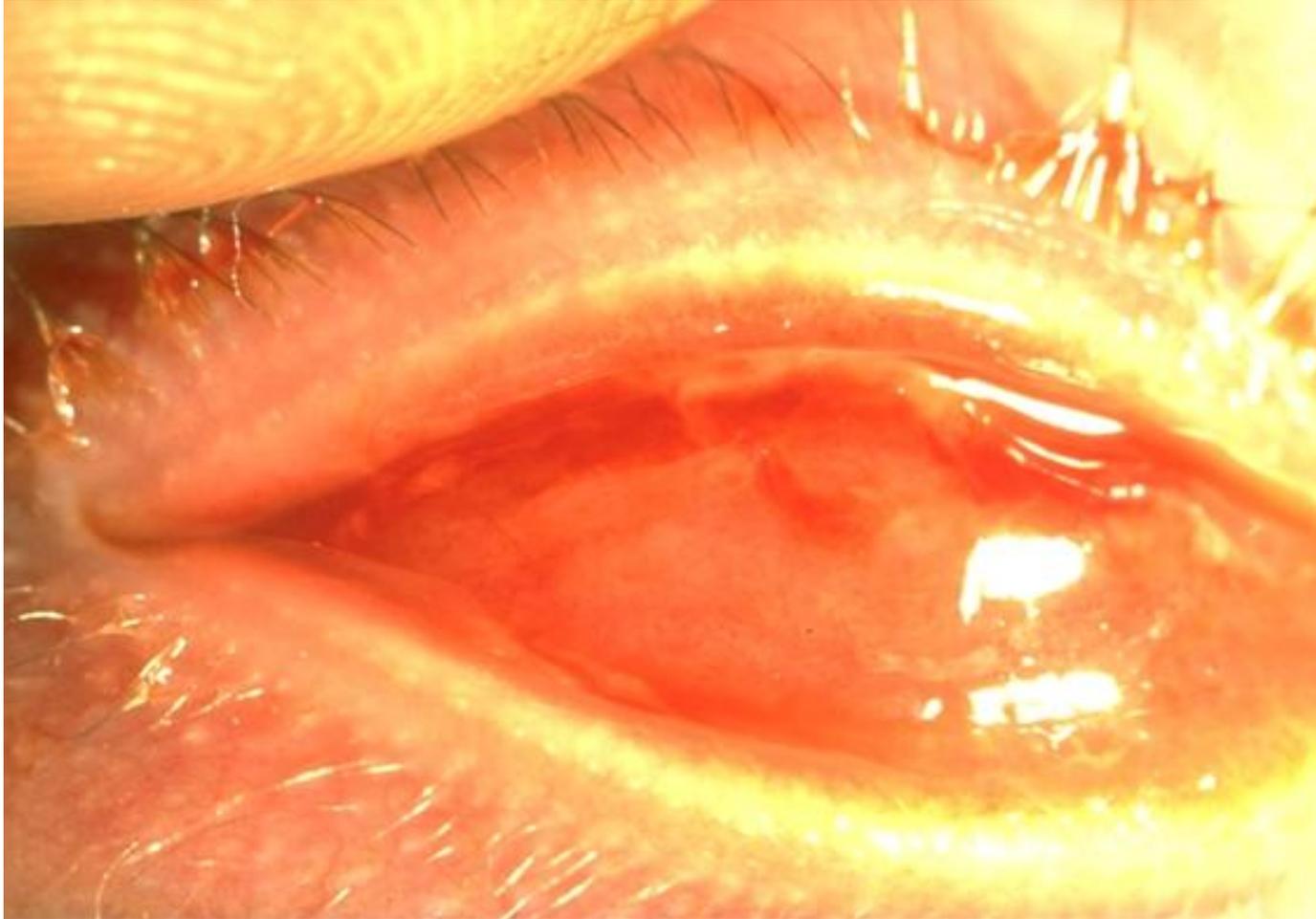
- Associated conditions: hay fever, asthma, eczema
 - Contact allergy: chemicals, cosmetics, pollen
 - Treatment: topical antihistamine/decongestant drops
 - Systemic antihistamines if necessary for systemic disease
- Refer refractory cases.

NEONATAL CONJUNCTIVITIS: CAUSES

- Bacteria (*N. gonorrhoeae*, 2–4 days)
- Bacteria (*Staphylococcus*, *Streptococcus*, 3–5 days)
- Chlamydia (5–12 days)
- Viruses (eg, herpes, from mother)



Neonatal gonococcal conjunctivitis

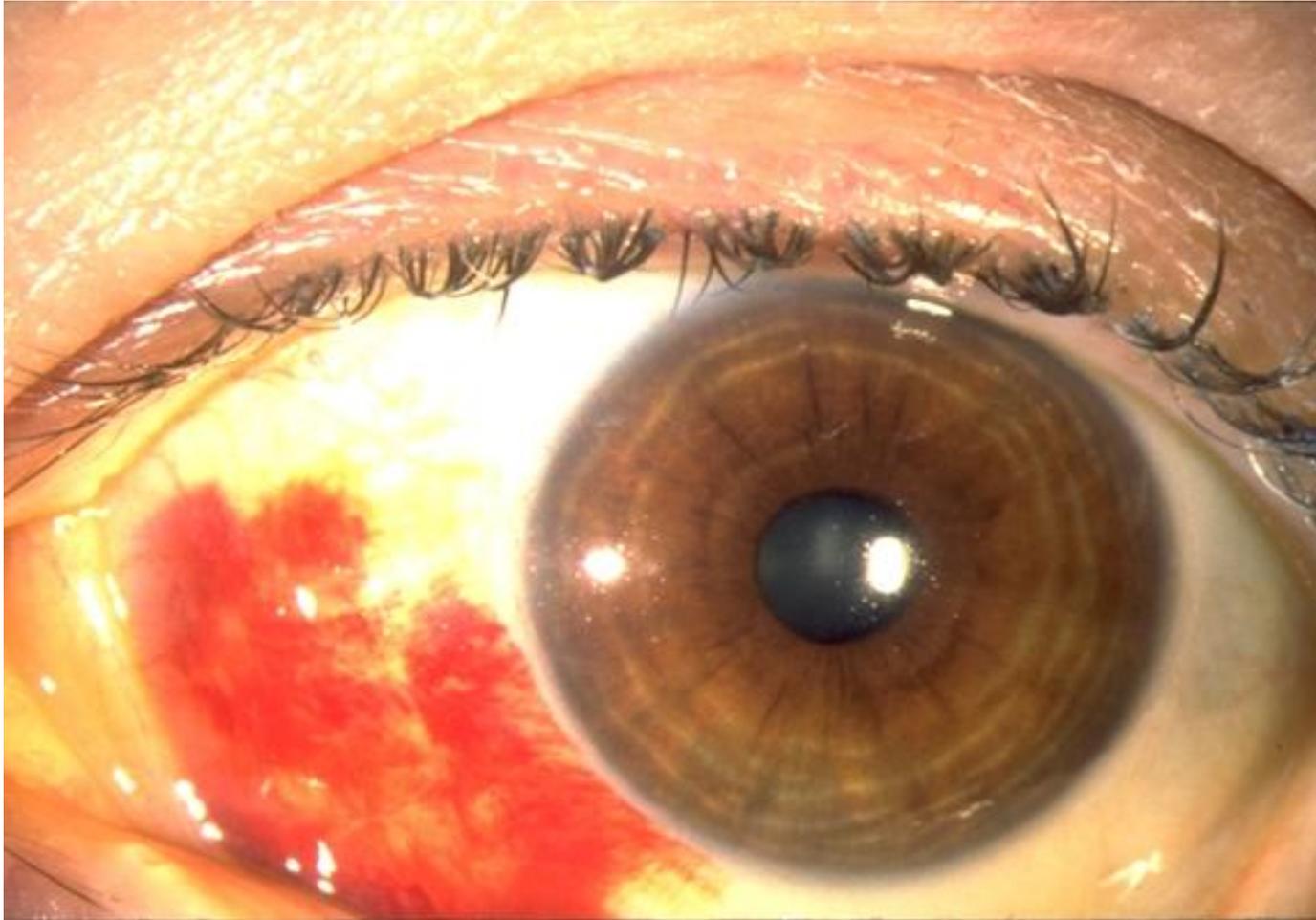


Neonatal chlamydial conjunctivitis

NEONATAL CHLAMYDIAL CONJUNCTIVITIS:

TREATMENT

- Erythromycin ointment, qid x 4 weeks
- Erythromycin po x 2–3 weeks
40–50 mg/kg/day , 4



Subconjunctival hemorrhage

TEARS AND DRY EYES

- Tear functions:
 - Lubrication
 - Bacteriostatic and immunologic functions
- Dry eye (keratoconjunctivitis sicca) is a tear deficiency state

TEAR DEFICIENCY STATES: SYMPTOMS

- Burning
- Foreign-body sensation
- Paradoxical reflex tearing
- Symptoms can be made worse by reading, computer use, television, driving, lengthy air travel

TEAR DEFICIENCY STATES: ASSOCIATED CONDITIONS

- Aging
- Rheumatoid arthritis
- Stevens-Johnson syndrome
- Chemical injuries
- Ocular pemphigoid
- Systemic medications

DRY EYES: TREATMENT

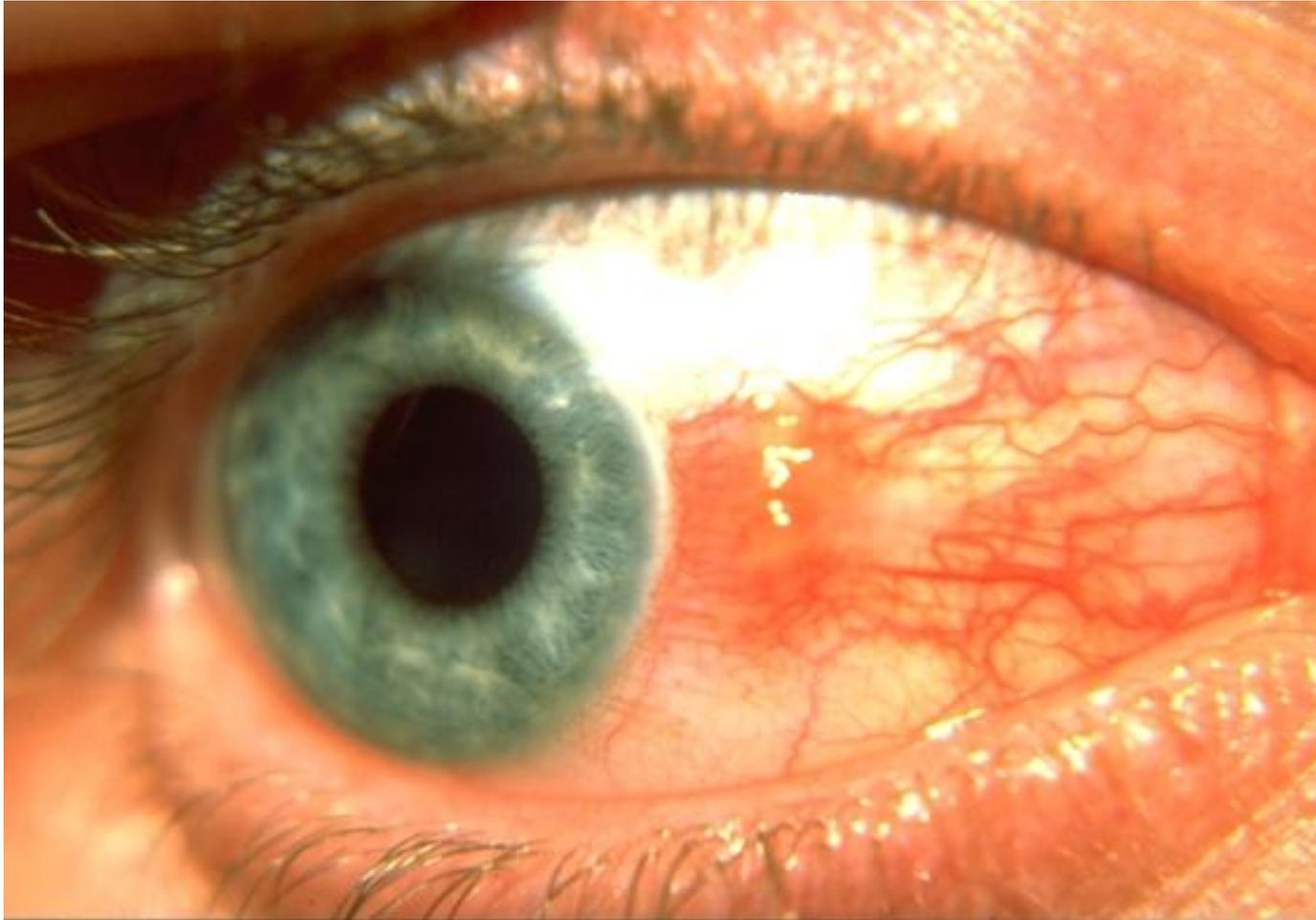
- Artificial tears, cyclosporine drops
- Nonpreserved artificial tears
- Lubricating ointment at bedtime
- Punctal occlusion
- Counseling about activities that make dry eyes worse



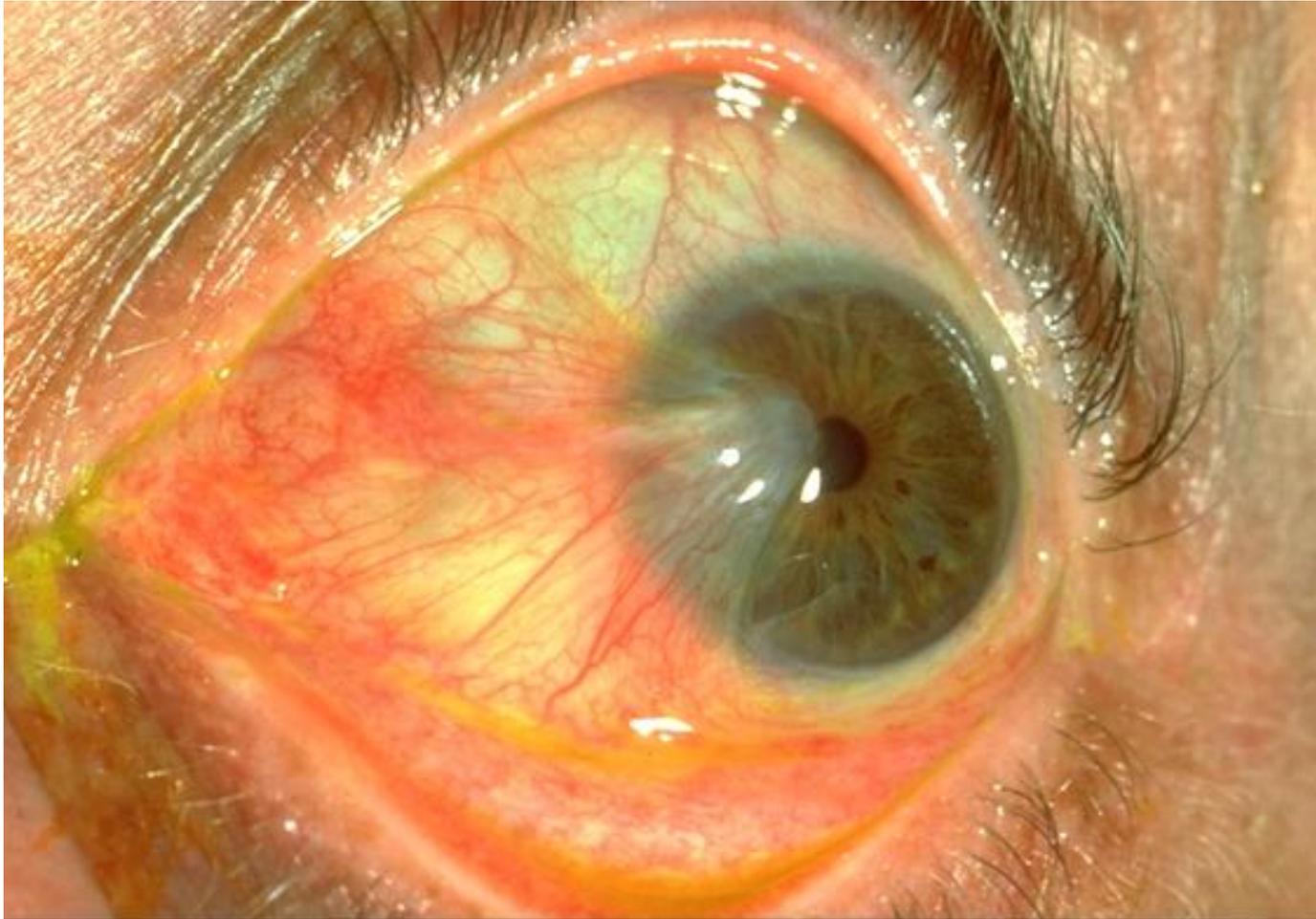
Thyroid exophthalmos: one cause of exposure keratitis

EXPOSURE KERATITIS: CAUSES AND MANAGEMENT

- Due to incomplete lid closure
- Manage with lubricating solutions/
ointments
- Tape lids shut at night
- Do not patch
- Refer severe cases



Pinguecula

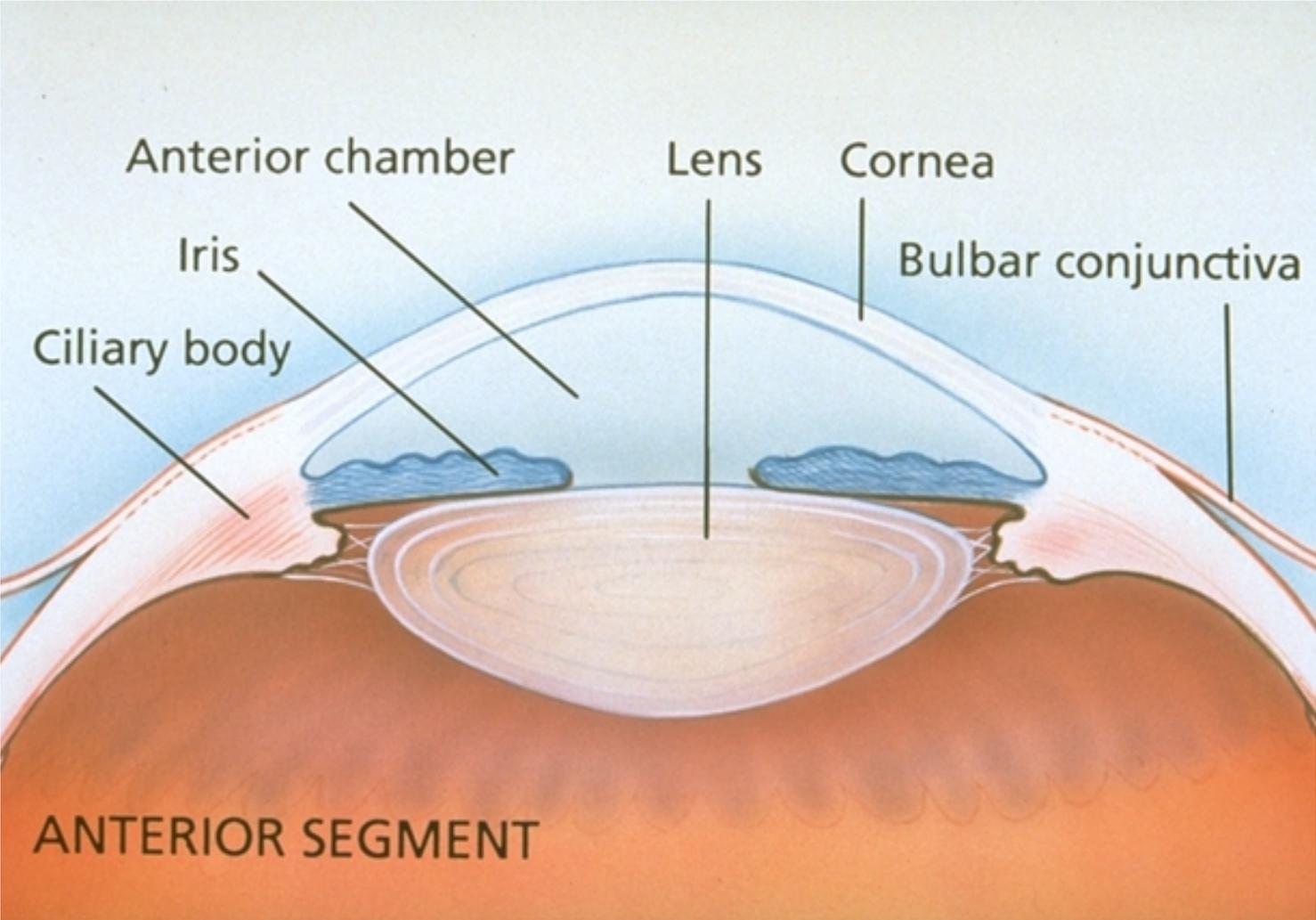


Pterygium

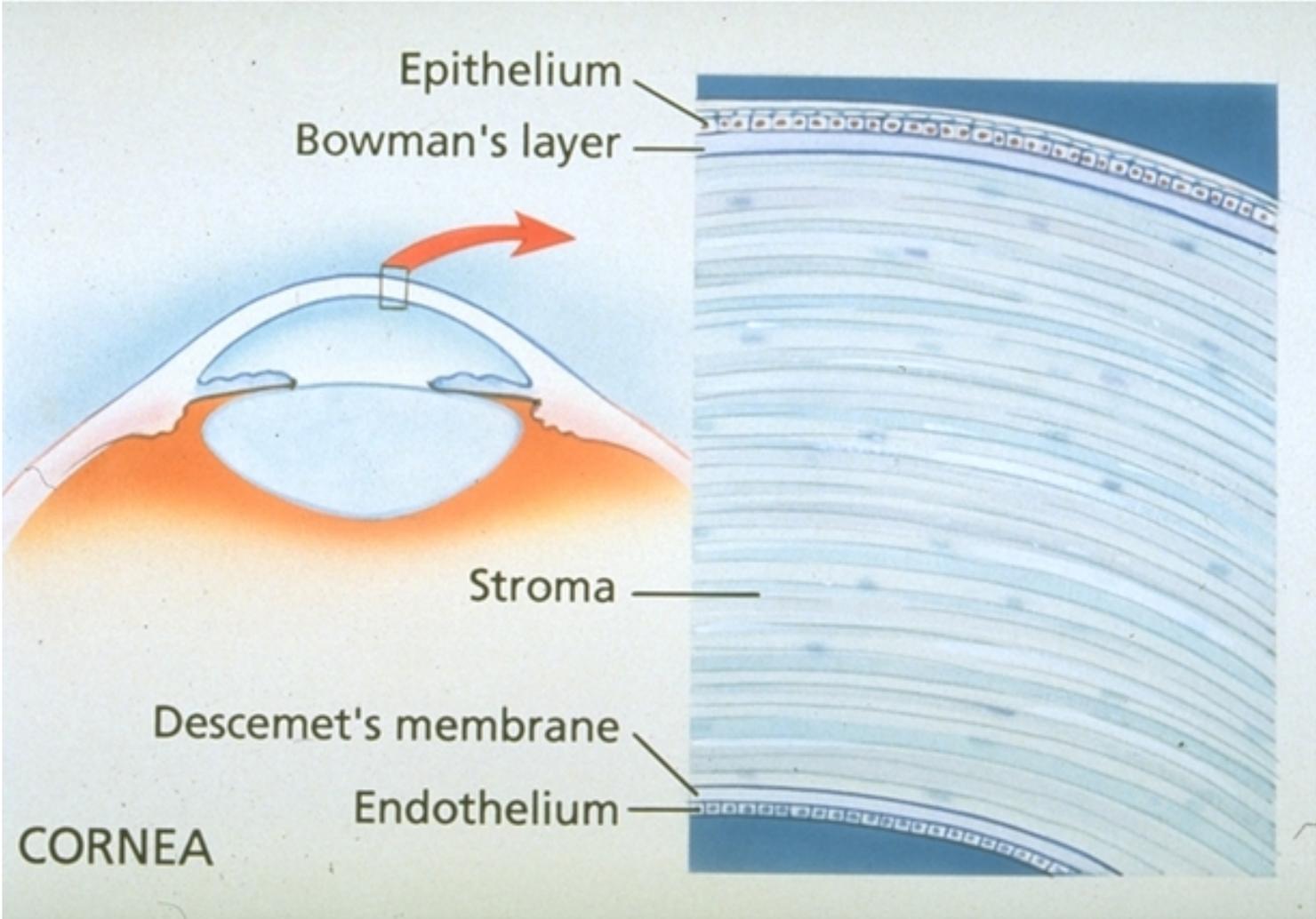
INFLAMED PINGUECULA AND PTERYGIUM: MANAGEMENT

- Artificial tears
- Counsel patients to avoid irritation
- If documented growth or vision loss, refer

Anterior Segment Disorders

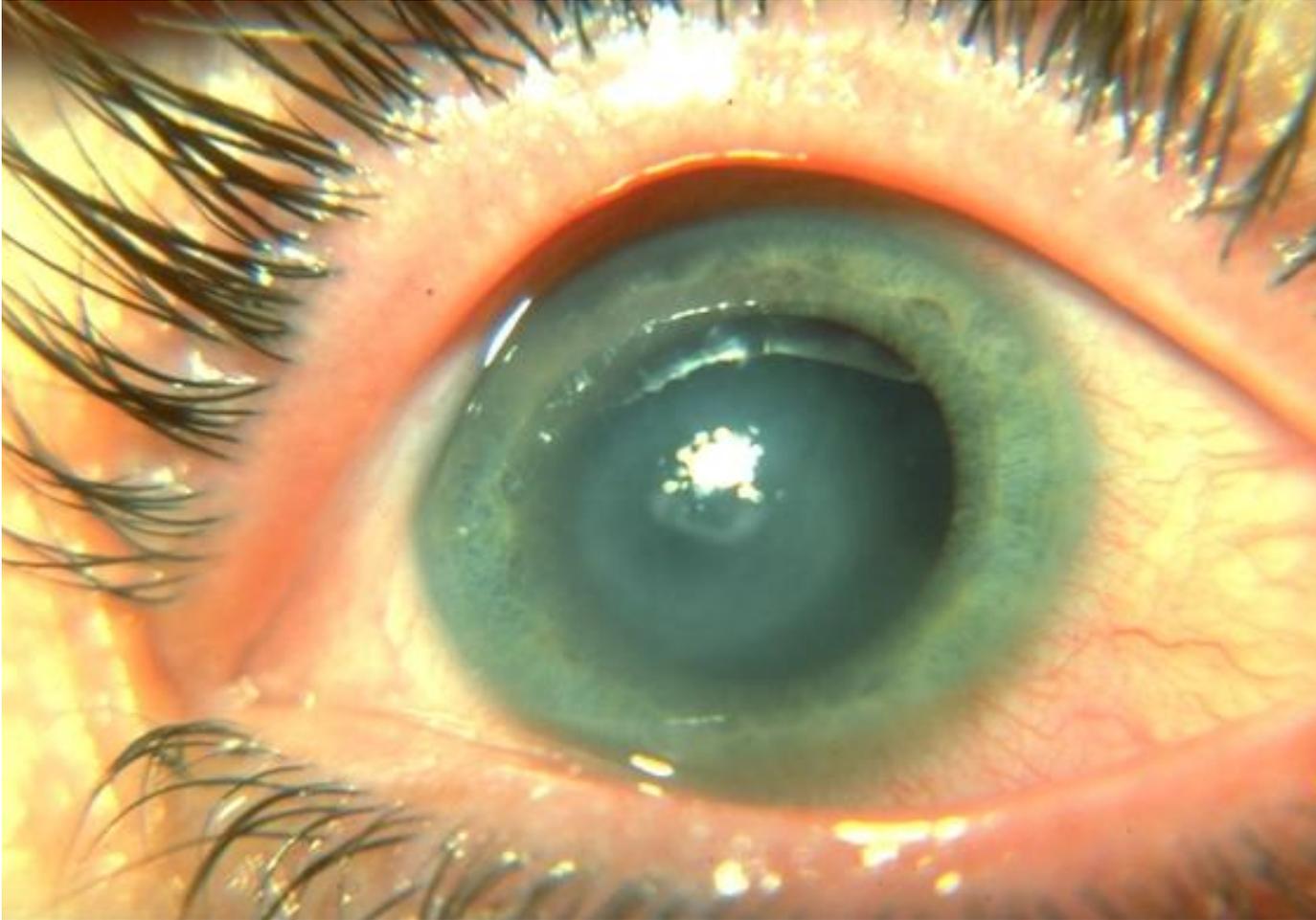


Anterior Segment Disorders

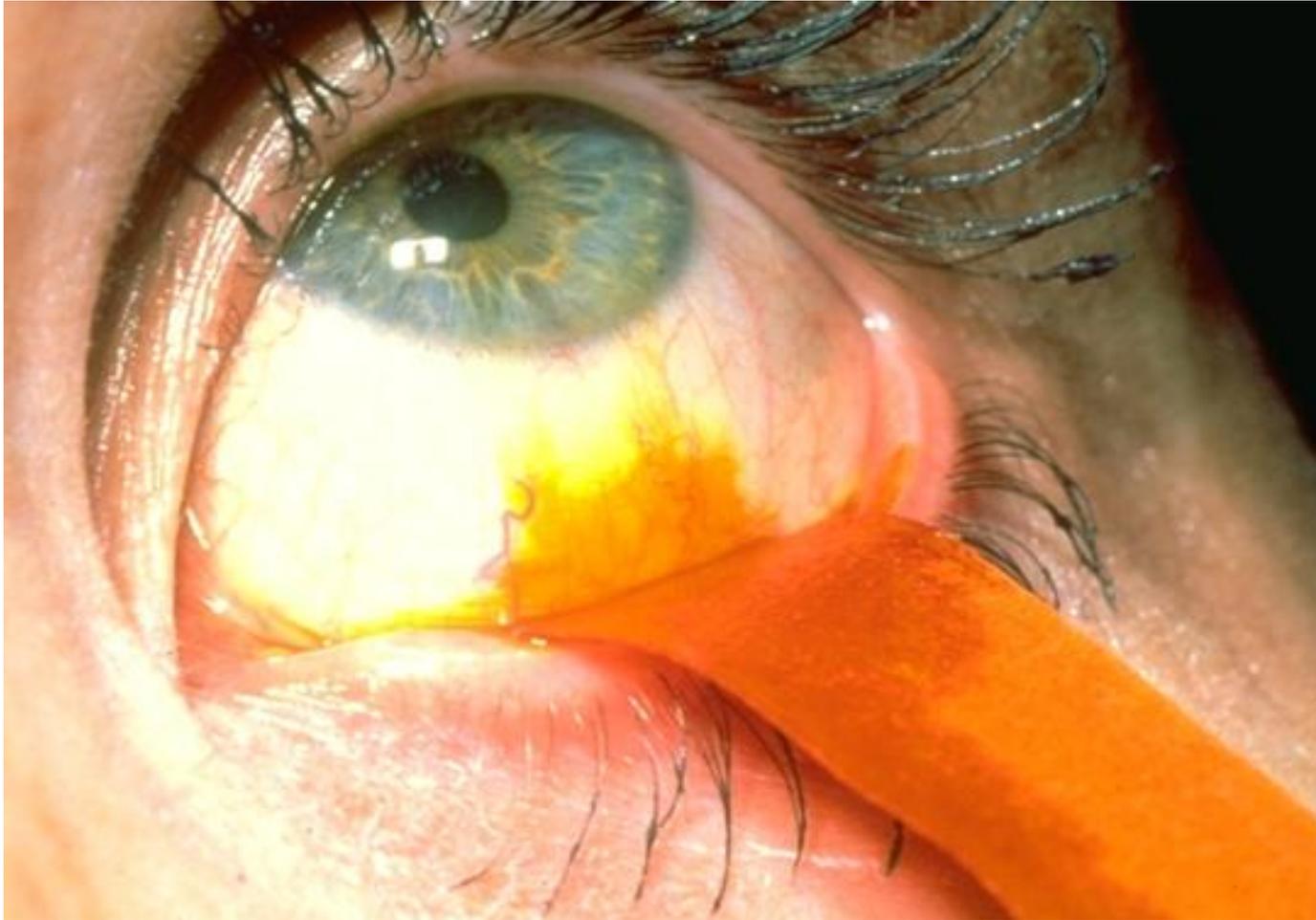


ACUTE CORNEAL DISORDERS: SYMPTOMS

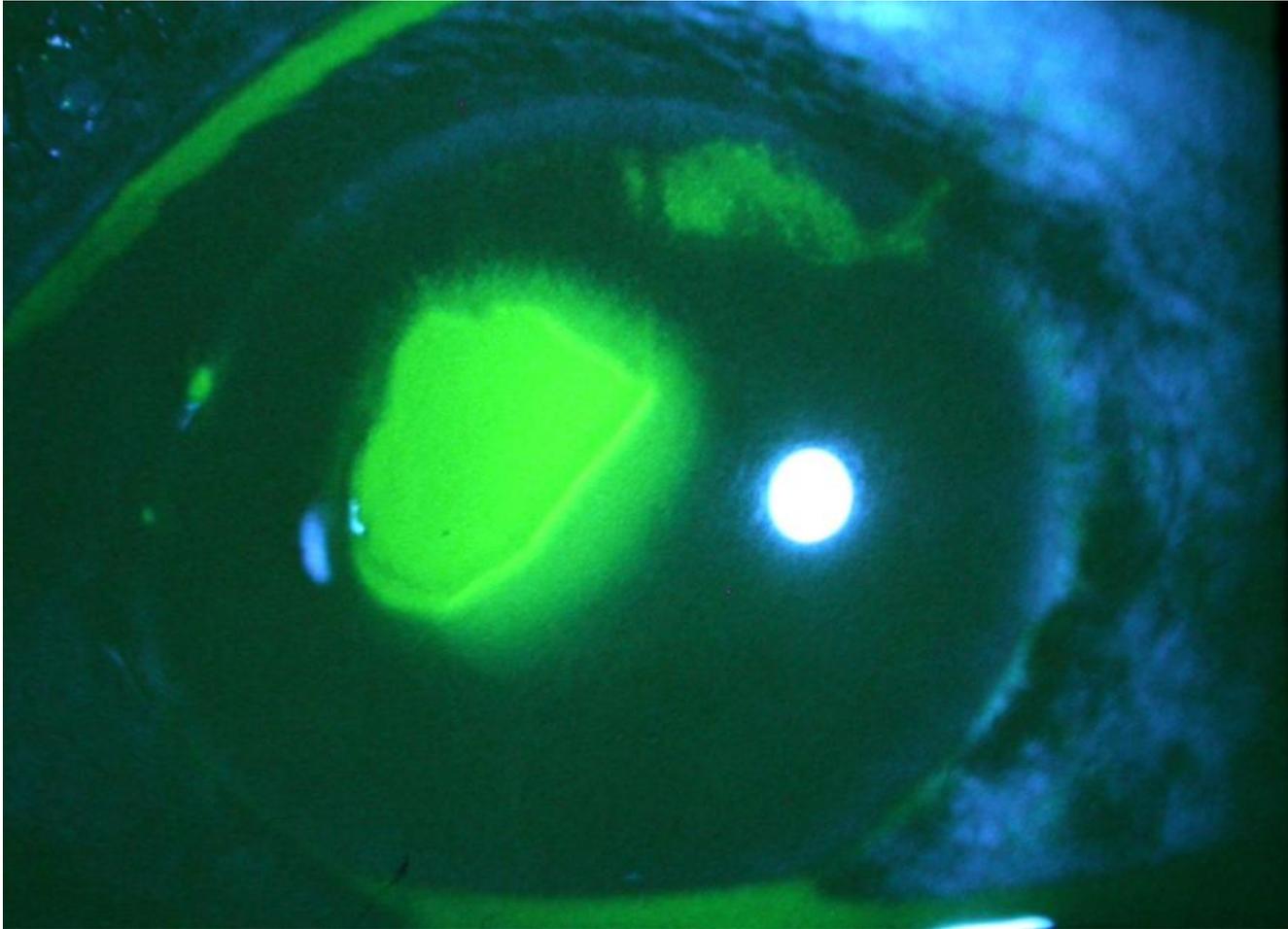
- Eye pain
 - Foreign-body sensation
 - Deep and boring
- Photophobia
- Blurred vision



Irregular corneal light reflex and central corneal opacity



Fluorescein dye strip applied to the conjunctiva



**Corneal abrasion, stained with fluorescein
and viewed with cobalt blue light**

CORNEAL ABRASION

- Signs and symptoms: redness, tearing, pain, photophobia, foreign-body sensation, blurred vision, small pupil
- Causes: injury, welder's arc, contact lens overwear

CORNEAL ABRASION: MANAGEMENT

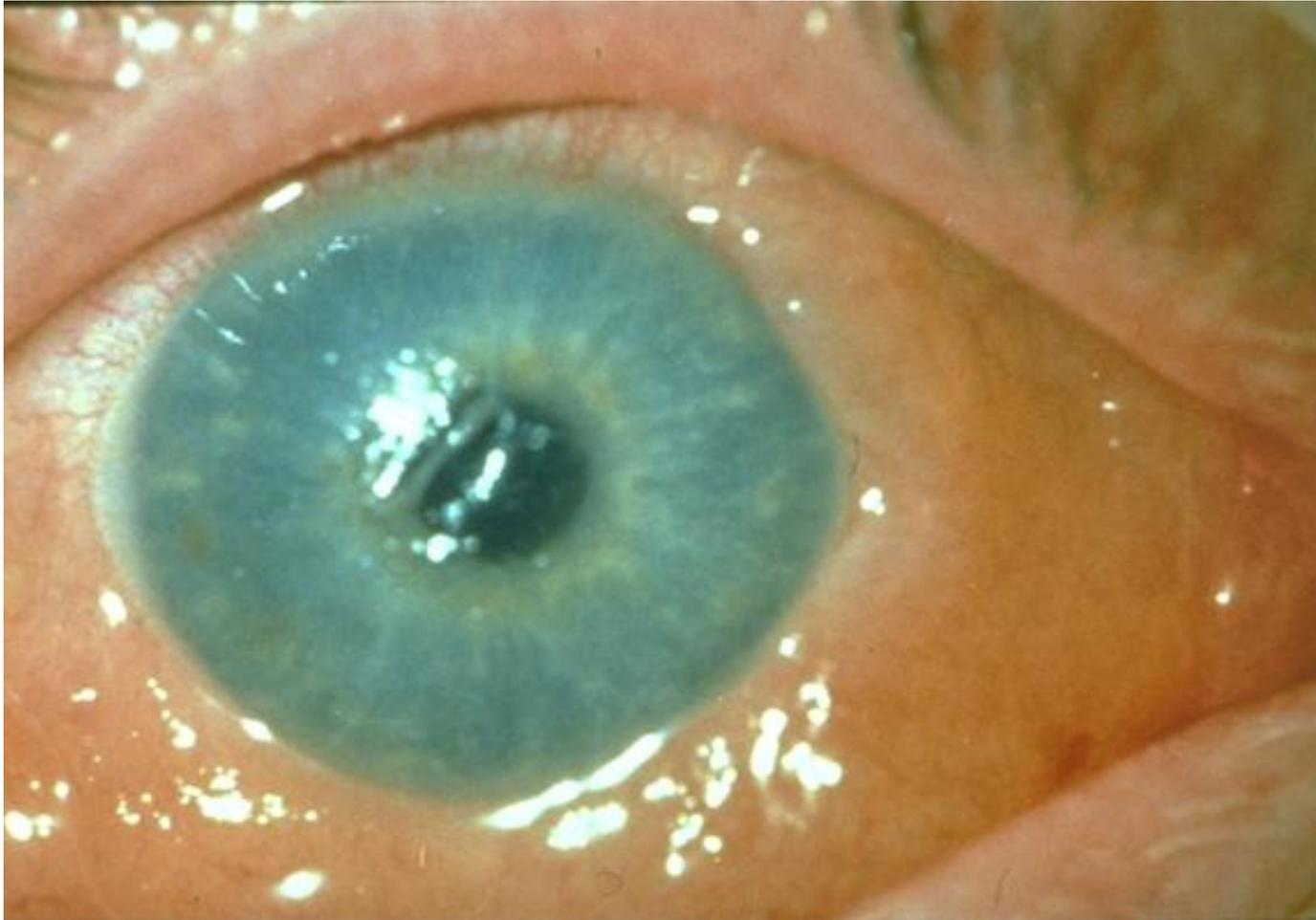
- **Goals:**
 - Promote rapid healing
 - Relieve pain
 - Prevent infections
- **Treatment:**
 - 1% cyclopentolate
 - Topical antibiotics
 - Drops (eg, fluoroquinolone, others) or ointment (eg, erythromycin, bacitracin/polymyxin)
 - ± Pressure patch x 24–48 hours
 - ± Oral analgesics



Applying a pressure patch

CHEMICAL INJURY

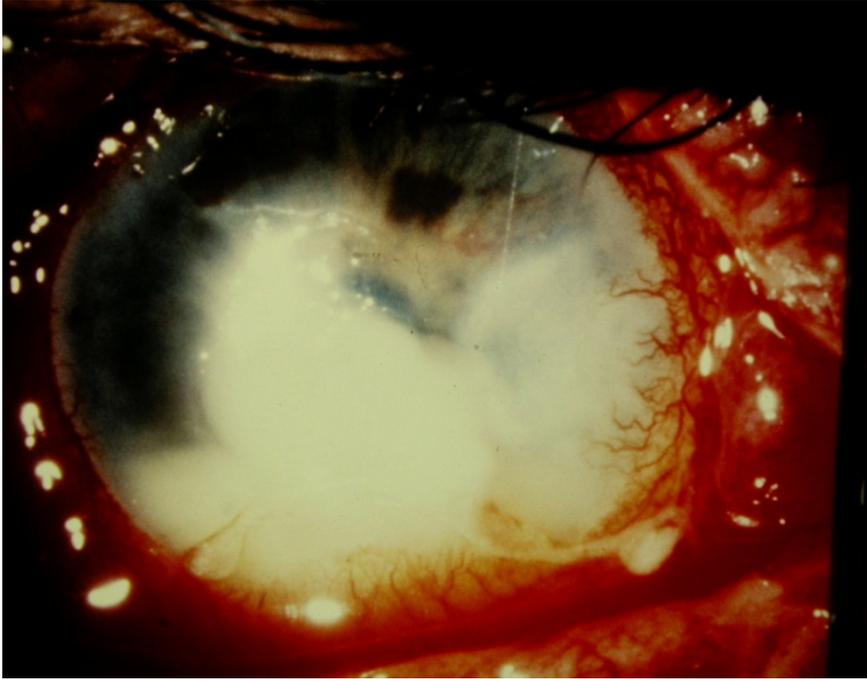
- A true ocular emergency
- Requires immediate irrigation with nearest source of water
- Management depends on offending agent



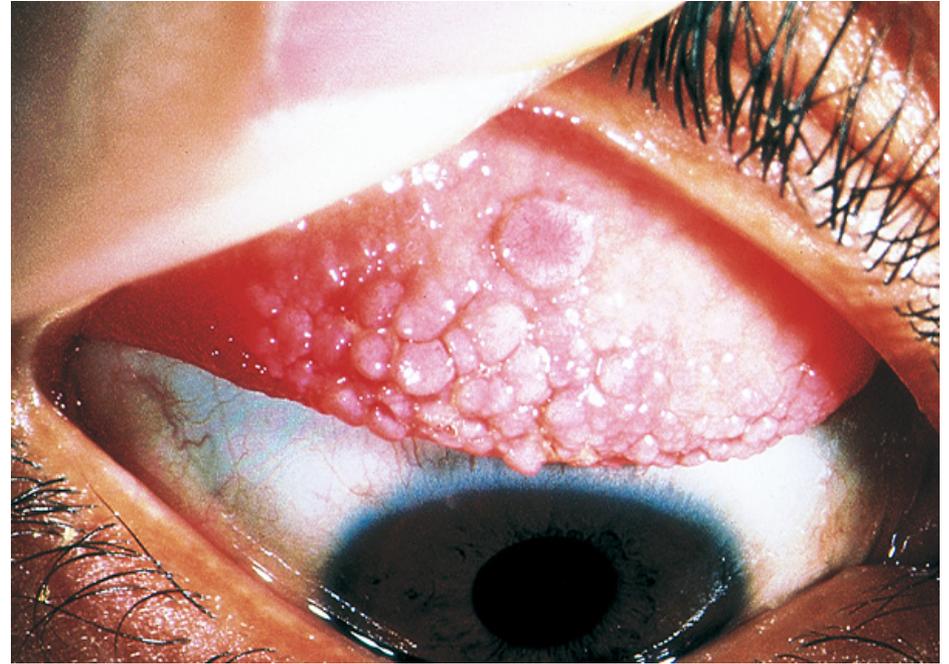
Chemical burn: acid



Chemical burn: alkali



Corneal ulcer



Giant papillary conjunctivitis

INFECTIOUS KERATITIS

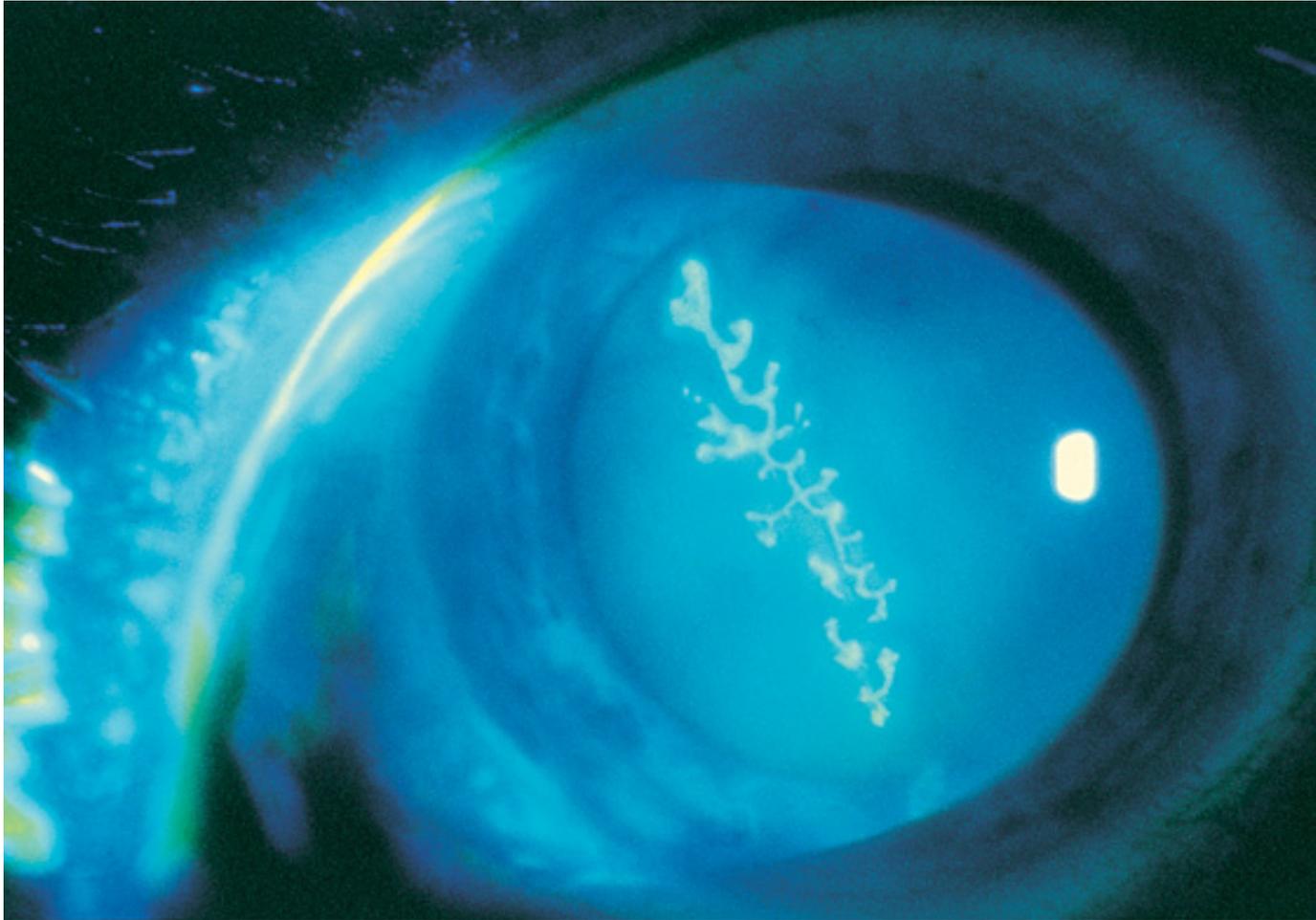
- Frequently result from mechanical trauma
- Can cause permanent scarring and decreased vision
- Early detection, aggressive therapy are vital



Bacterial infection of the cornea



Primary herpes simplex infection



Corneal herpes simplex dendrites, stained with fluorescein



TOPICAL STEROIDS: SIDE EFFECTS

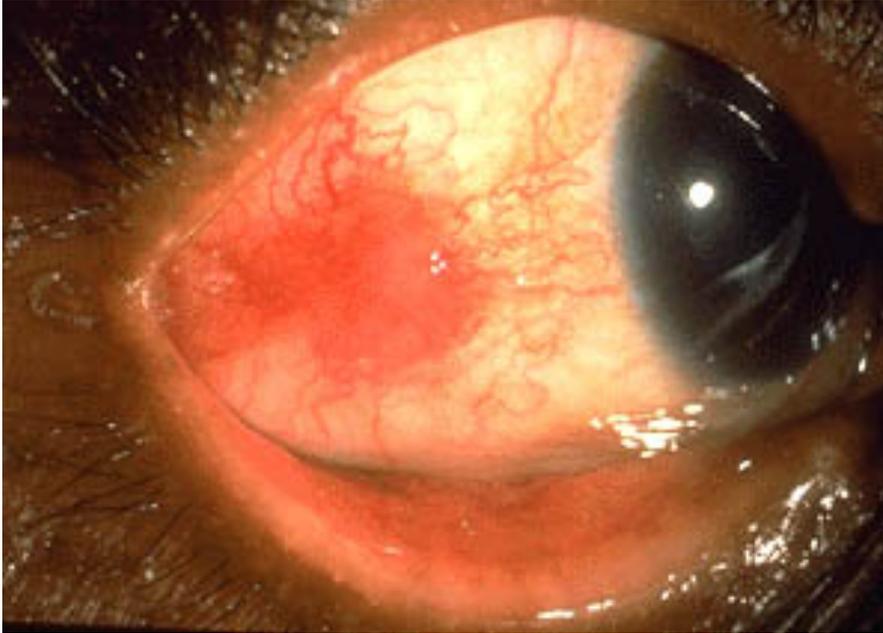
- Facilitate corneal penetration of herpes virus
- Elevate IOP (steroid-induced glaucoma)
- Cataract formation and progression
- Potentiate fungal corneal ulcers



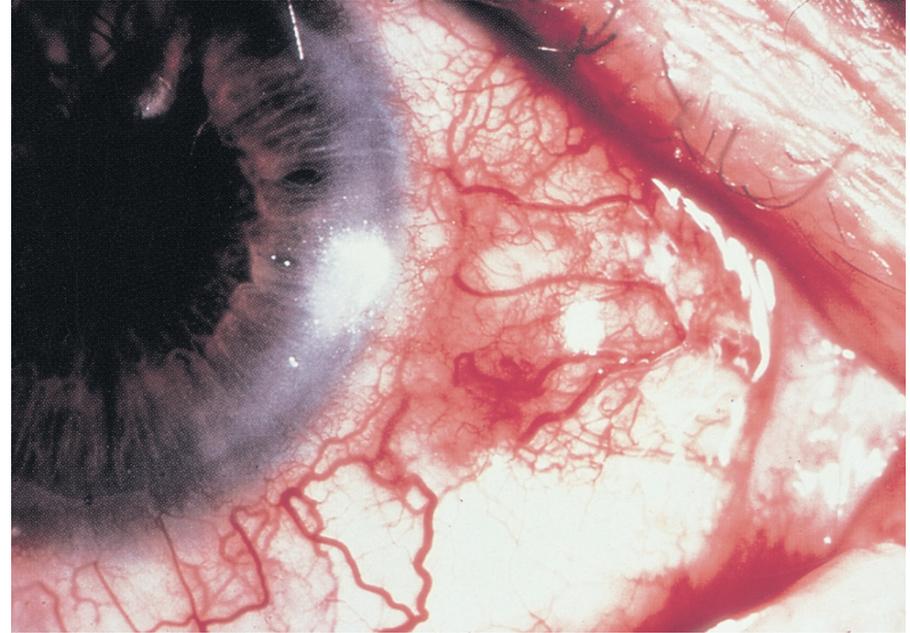
Hyphema

INFLAMMATORY CONDITIONS CAUSING A RED EYE:

- Episcleritis
- Scleritis
- Anterior uveitis (iritis)



Episcleritis



Scleritis

IRITIS

Signs and Symptoms

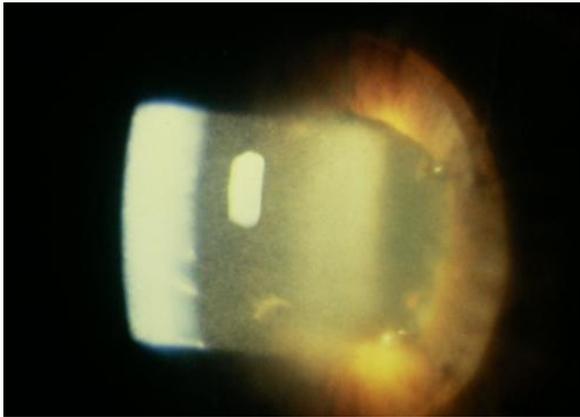
- Circumlimbal redness
- Pain
- Photophobia
- Decreased vision
- Miotic pupil

Rule Out

- Systemic inflammation
- Trauma
- Autoimmune disease
- Systemic infection

Recognize and refer.

UVEITIS: SLIT LAMP FINDINGS



White cells in
anterior
chamber

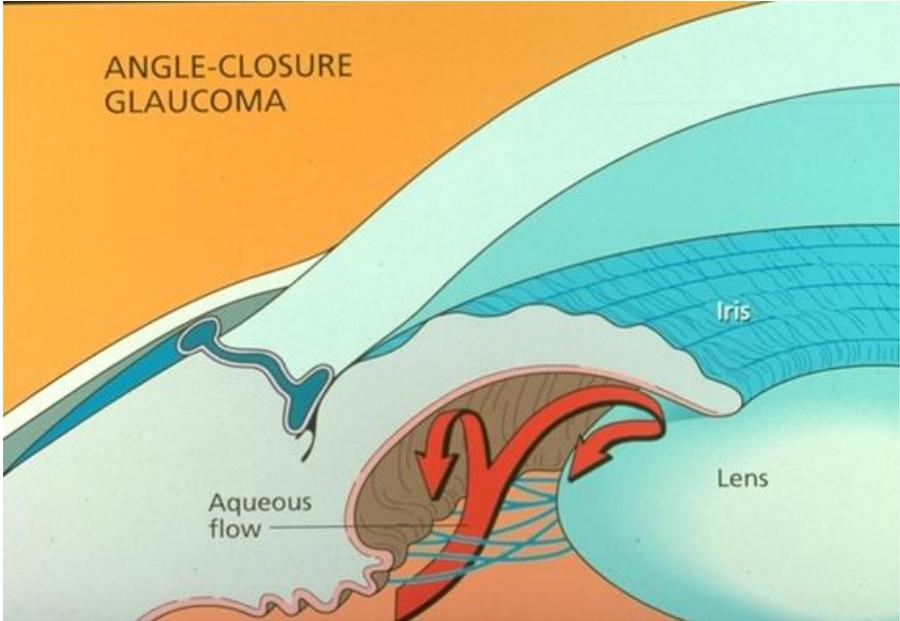
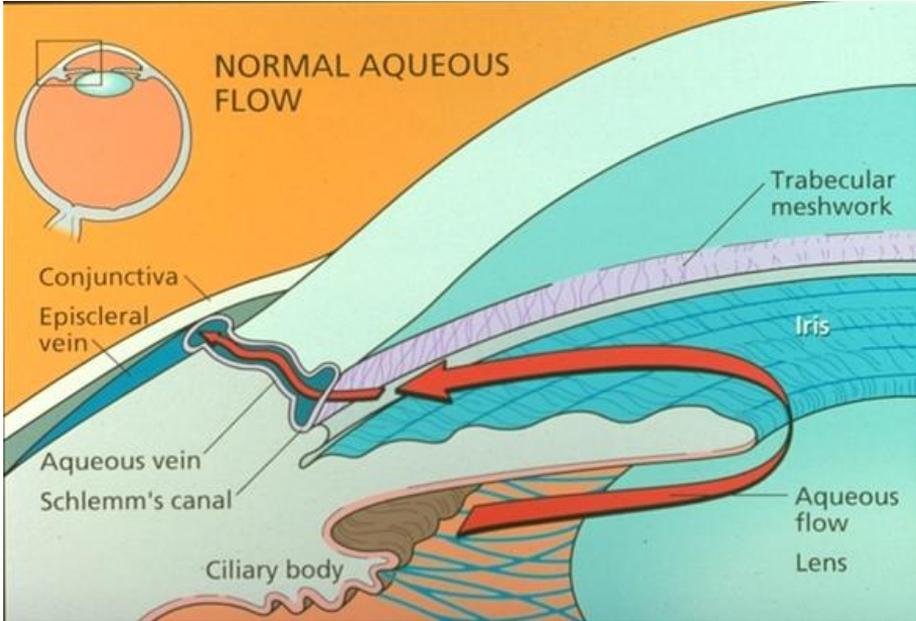


Hypopyon



Keratic
precipitates

Anterior Segment Disorders



ACUTE GLAUCOMA: SIGNS AND SYMPTOMS

- Red eye
- Severe pain in, around eye
- Frontal headache
- Blurred vision, halos seen around lights
- Nausea, vomiting
- Pupil fixed, mid-dilated, slightly larger than contralateral side
- Elevated IOP
- Corneal haze



Acute angle-closure glaucoma

ACUTE GLAUCOMA: INITIAL TREATMENT

- Pilocarpine 2% drops q 15 min x 2
- Timolol maleate 0.5%, 1 drop
- Apraclonidine 0.5%, 1 drop
- Acetazolamide 500 mg po or IV
- IV mannitol 20% 300–500 cc

COMMON RED EYE DISORDERS:

TREATMENT INDICATED

- Hordeolum
- Chalazion
- Blepharitis
- Conjunctivitis
- Subconjunctival hemorrhage
- Dry eyes
- Corneal abrasions (most)

VISION-THREATENING RED EYE SIGNS & SYMPTOMS: REFERRAL INDICATED

- Decreased vision
- Ocular pain
- Photophobia
- Circumlimbal redness
- Corneal edema
- Corneal ulcers/ dendrites
- Abnormal pupil
- Elevated IOP

VISION-THREATENING RED EYE

- Orbital cellulitis
- Scleritis
- Chemical injury
- Corneal infection
- Hyphema
- Iritis
- Acute glaucoma

DISORDERS: URGENT REFERRAL

MANAGING THE RED EYE: PCP AND OPHTHALMOLOGIST

- Clinical expertise
- Cooperation
- Communication

