

EYE Case Studies

Mike O'Rourke



83 Year Old Woman

- Decreased vision Right eye for 2 days
- Preceded by 1 week of TVO

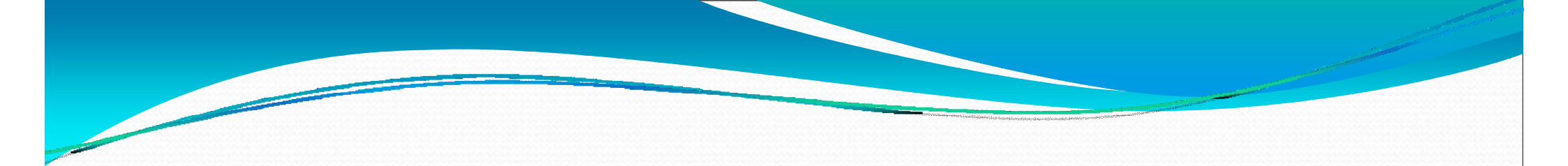
Neuro-ophthalmic Examination

Vision	LP	6/9
Pupil	RAPD	
External		
Visual Field	Nil	Normal
Fundus		



DIAGNOSIS?





GIANT CELL ARTERITIS

Clinical Clues for GCA

- Age
- Jaw claudication
- Temporal artery abnormalities
- TVO
- PMR

Ocular Manifestations of GCA

- AION
- PION
- CRAO
- TVO
- Ophthalmoplegia

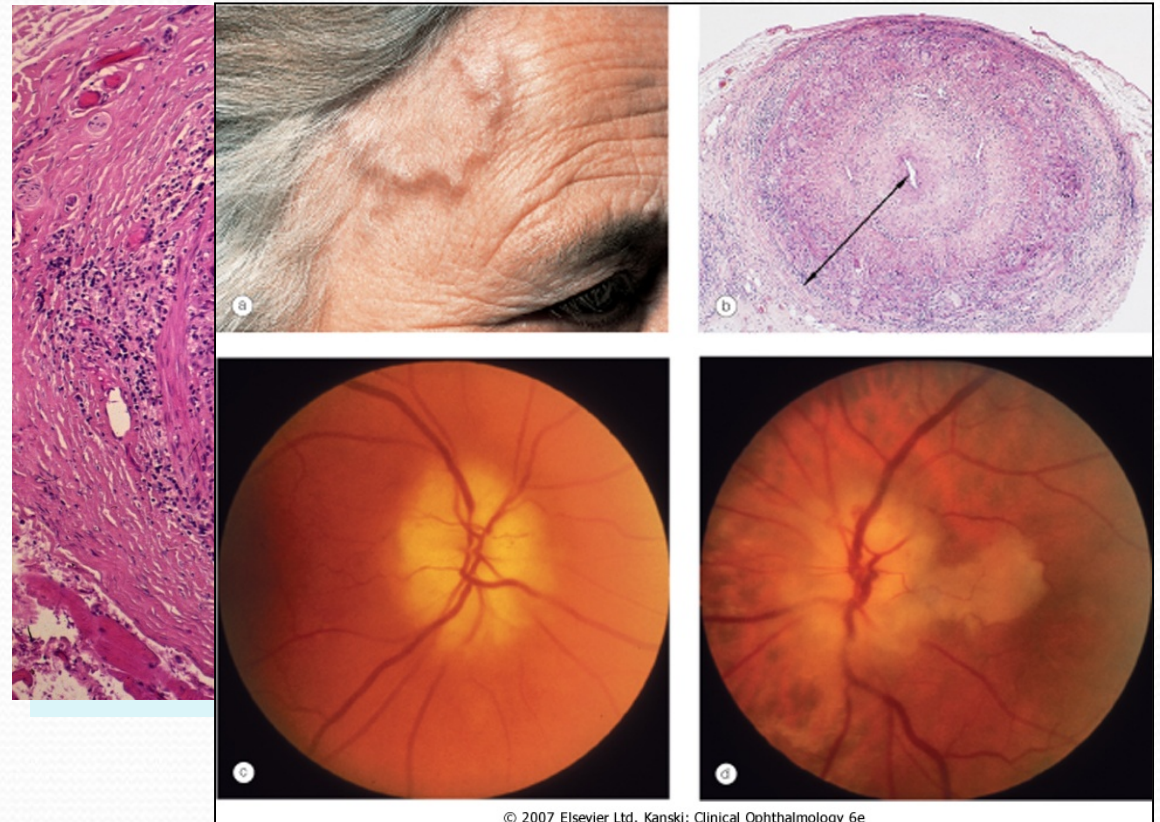


If You Suspect GCA

- Start corticosteroids immediately
- Draw blood tests for “confirmation”
- Perform TAB

Pathologic Changes of GCA

- 1) Giant cells need not be present
- 2) Evidence of inflammation in the artery wall
- 3) Disruption of the internal elastic lamina



Dose and Duration?

- Not absolutely known
- treat with at least **2mg/Kg** prednisone
- usually treat for years
- treat and manage medical side effects of steroids

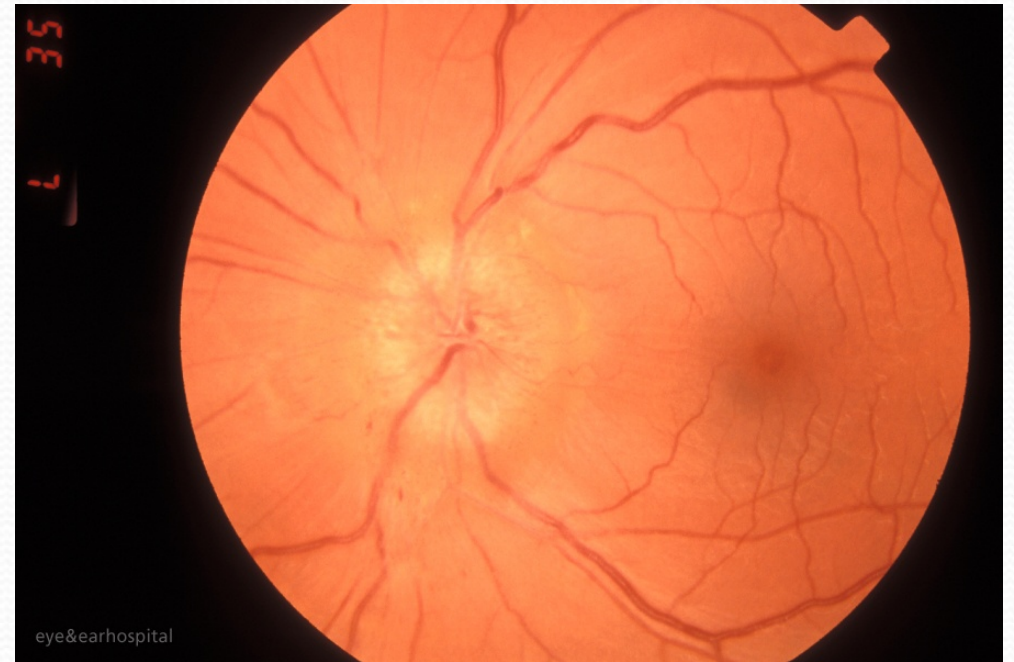
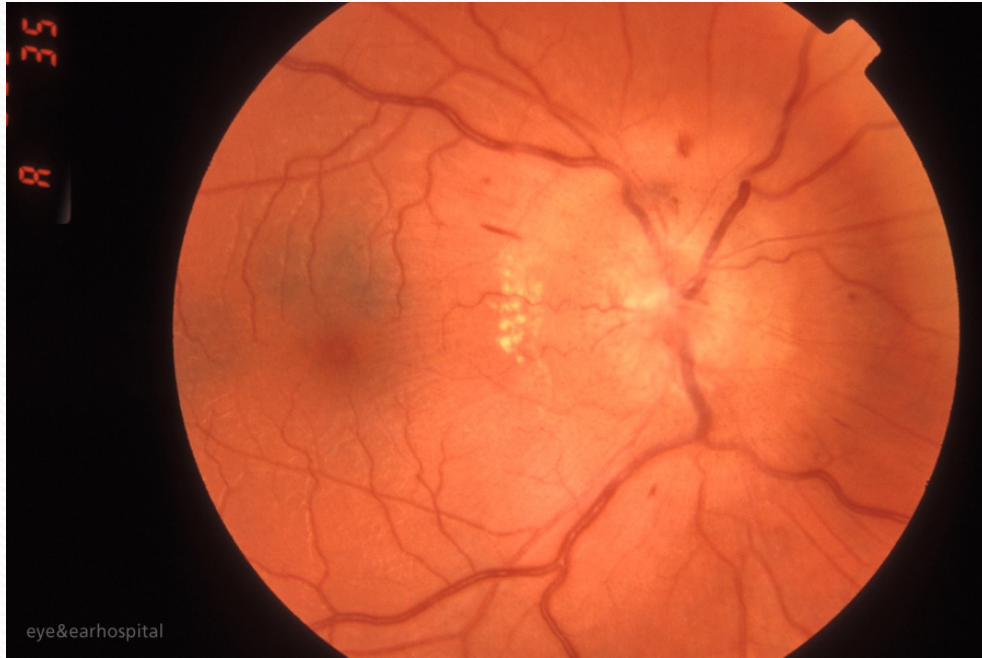


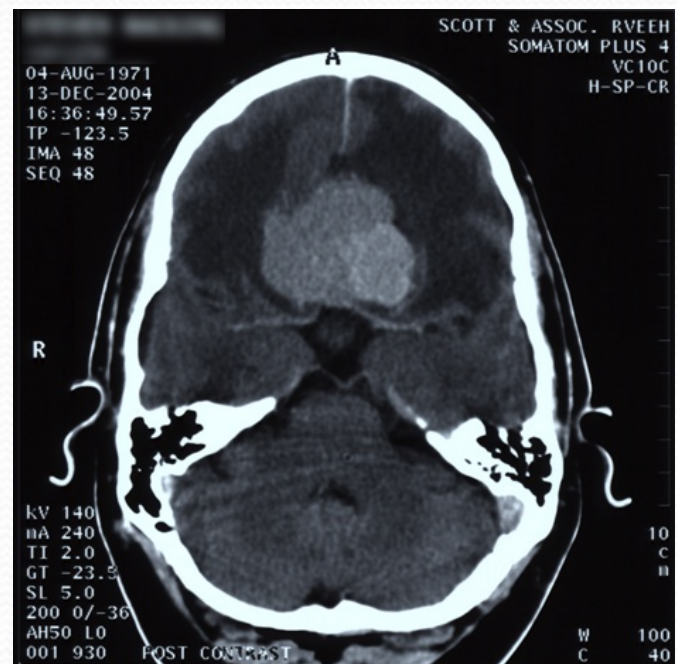
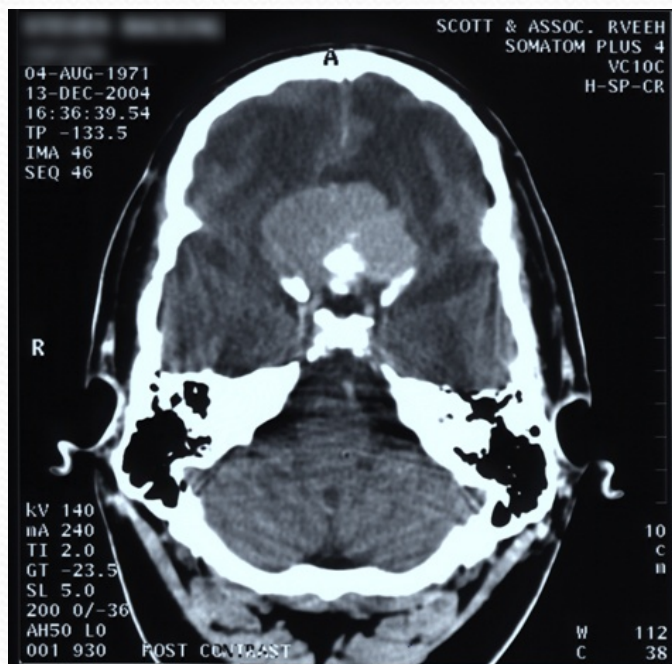
48 year old man

- Blurry vision bilateral - variable
- 1 month
- Headaches in the morning

Neuro-ophthalmic Examination

Vision	6/18	6/9
Pupil	Normal	Normal
External	Normal	Normal
Visual Field	Normal	Normal
Fundus		





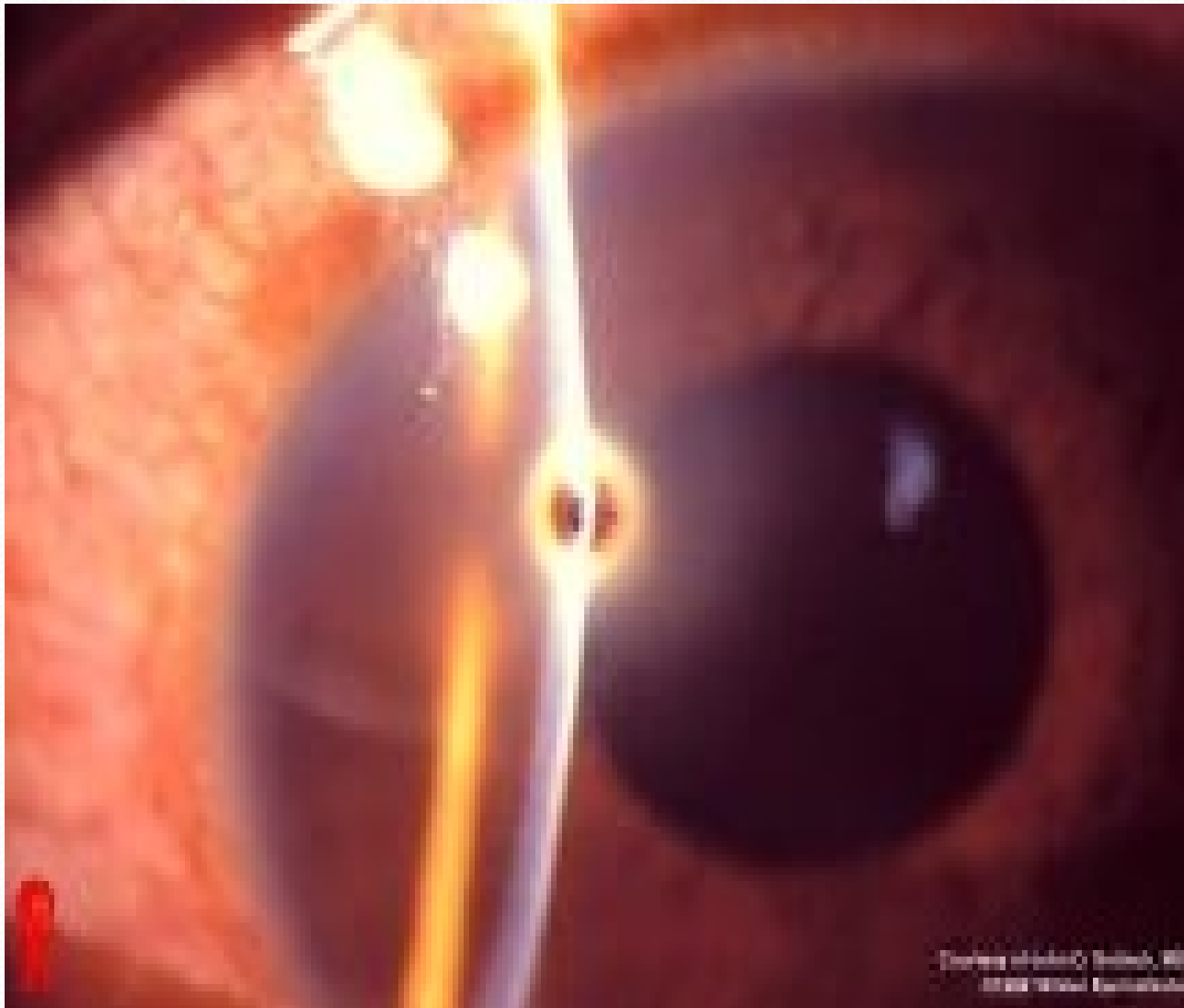


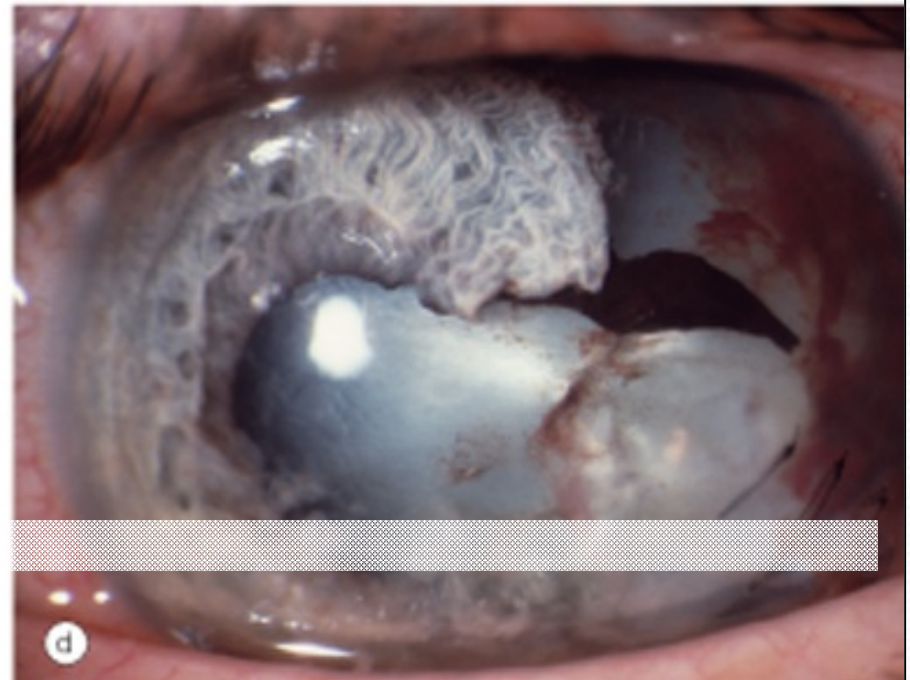
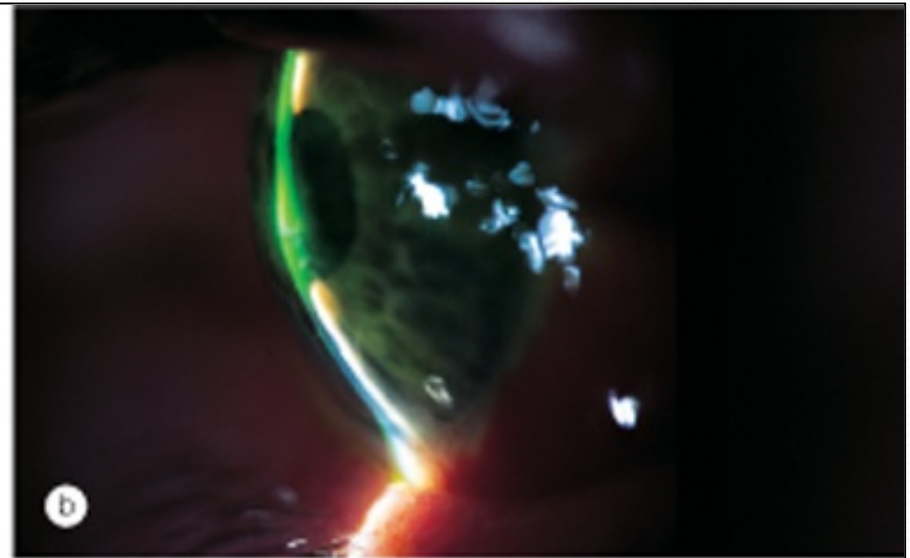
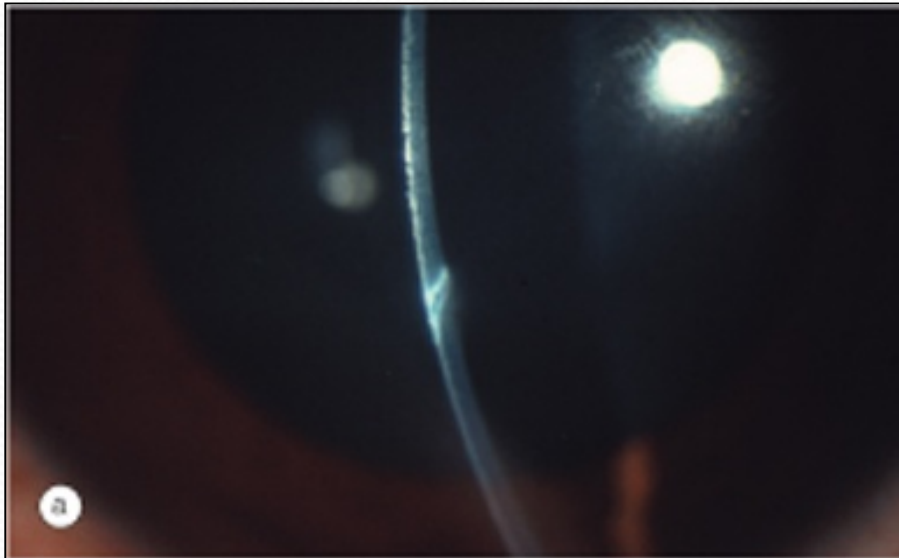
Red Eye

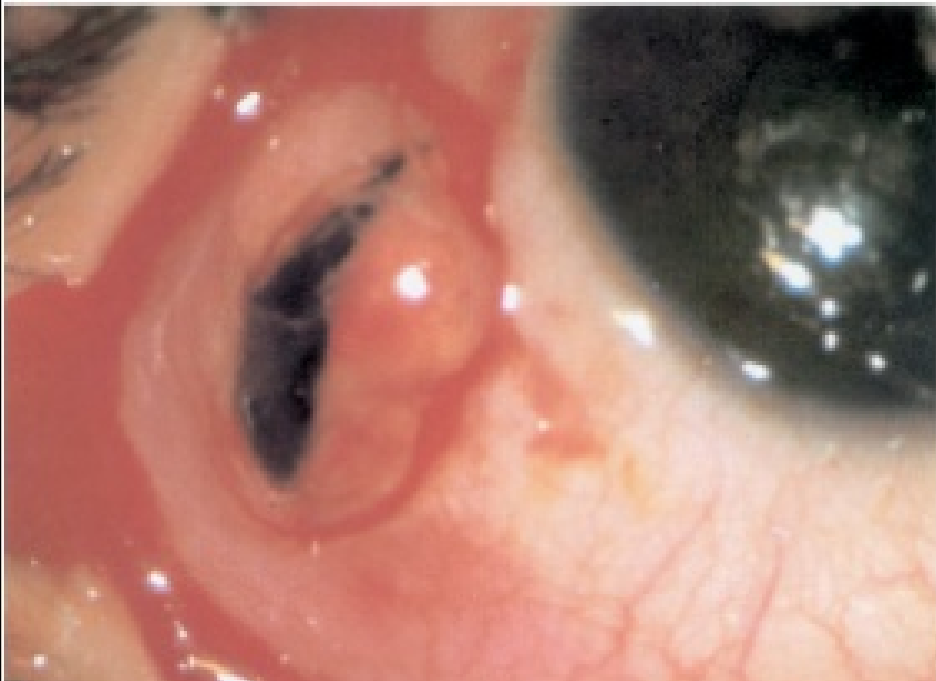
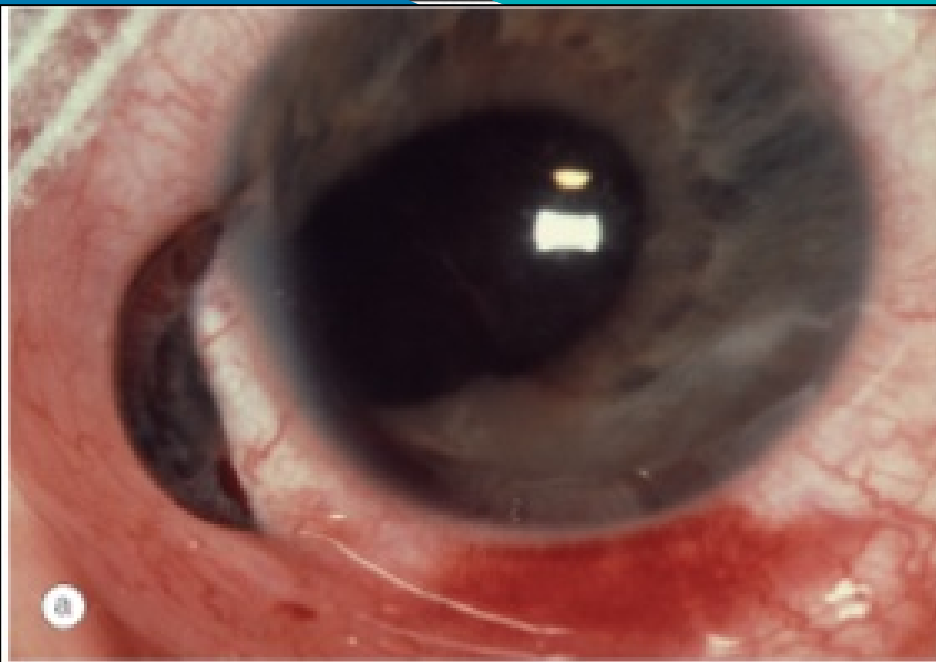
- ? Onset pattern
- ? Unilateral or Bilateral
- ? Vision
- ? Pain
- ? Associations

-
- ? Visual Acuity
 - ? Pupils
 - ? Flourescein
 - ? Pattern of redness

Exclude Trauma







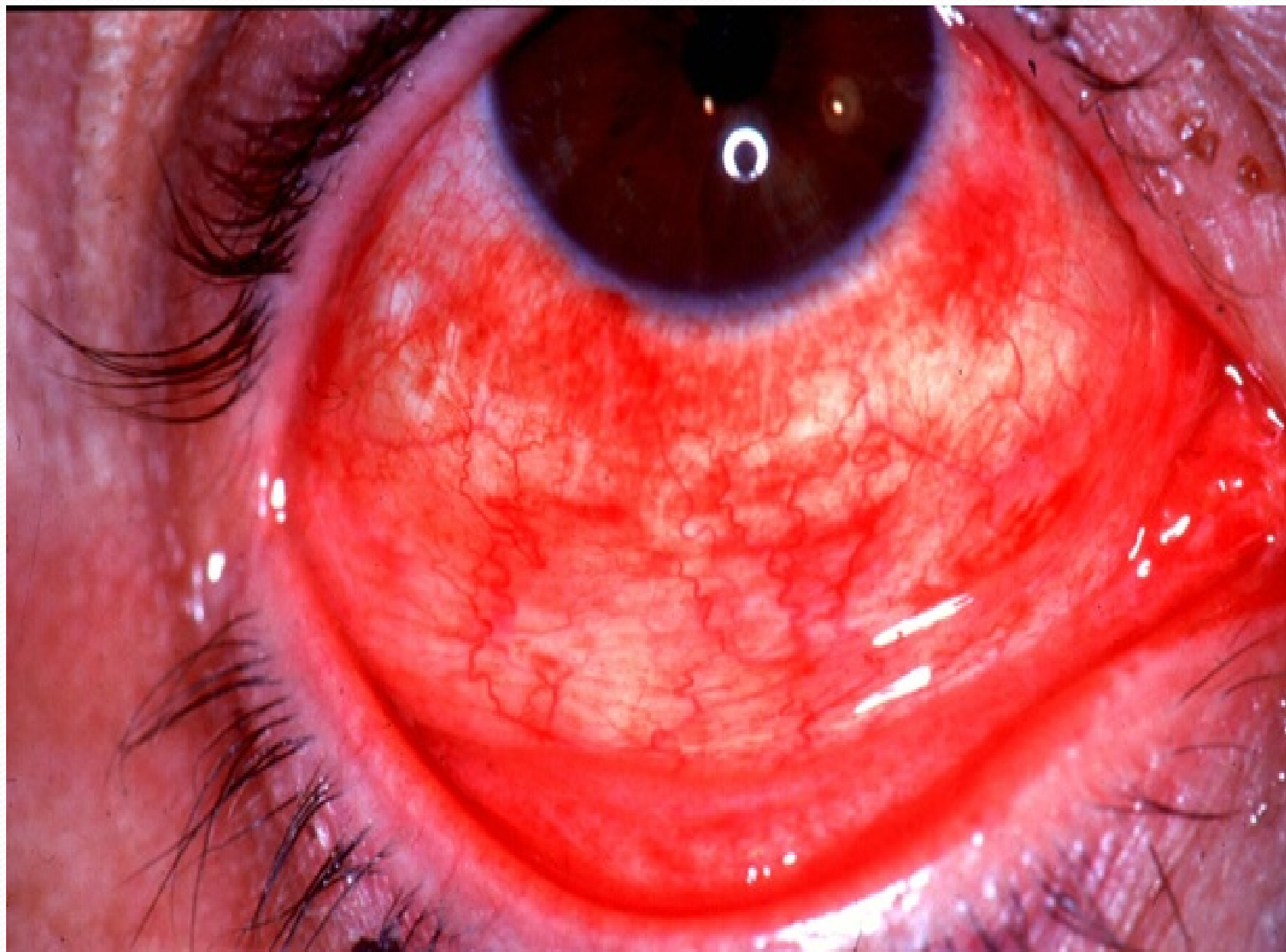
Subconjunctival Haemorrhage



23 year old female

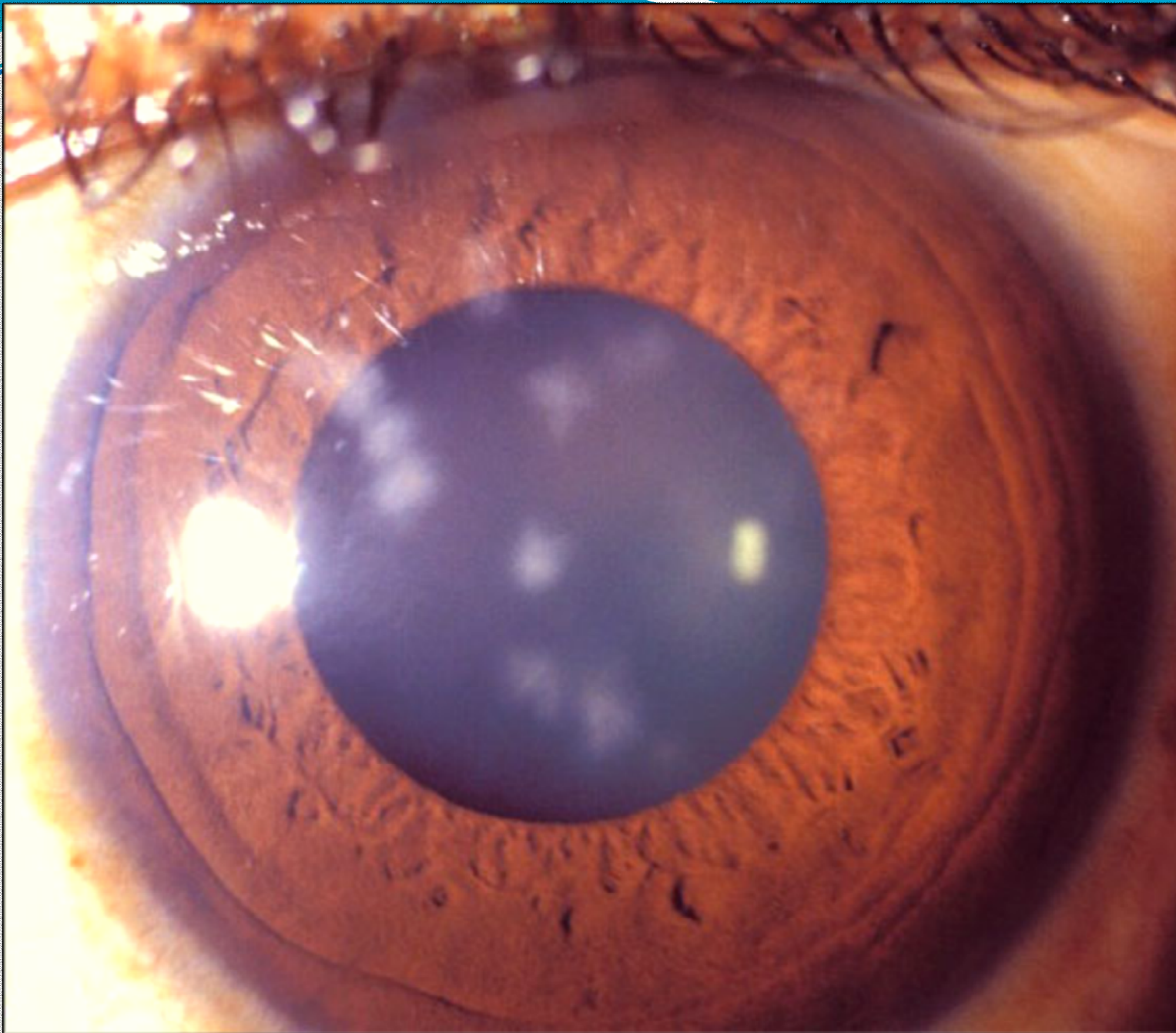
- Sore watery eyes 5 days
- ? Onset pattern - right first
- ? Bilateral - after 3 days
- ? Vision - OK
- ? Pain - NO
- ? Associations - Sore throat

-
- ? Visual Acuity - 6/6 6/9 (PH 6/6)
 - ? Pupils - Normal
 - ? Flourescein Normal
 - ? Pattern of redness ?



Adenovirus, Conj. Follicles.





Conjunctivitis

Conjunctivitis

History

Vision

Discharge

Appearance

Pupils



Associated features

- Viral:
 - URTIs
 - Preauricular lymphadenopathy
- Allergic:
 - Atopy/hayfever
 - CL wear
- Chlamydial:
 - Urethritis (Reiters)

Conjunctivitis

History

Vision



Discharge

Appearance

Pupils

- Generally normal unless:
 - Excessive lid swelling
 - Excessive discharge
 - Corneal involvement

Conjunctivitis

History

Vision

Discharge

Appearance

Pupils



- Viral
 - Watery
- Allergic:
 - Mucoïd/watery
- Bacterial:
 - Purulent
- Chlamydial:
 - Mucopurulent

Conjunctivitis

History

Vision

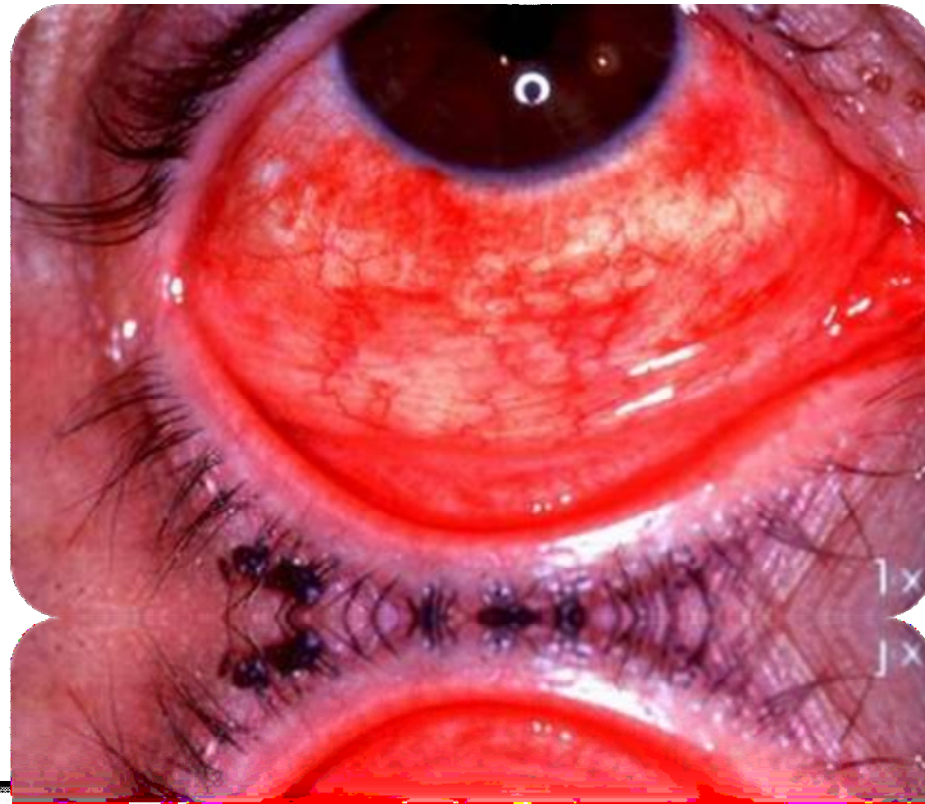
Discharge

Appearance

Pupils



Viral



Conjunctivitis

History

Vision

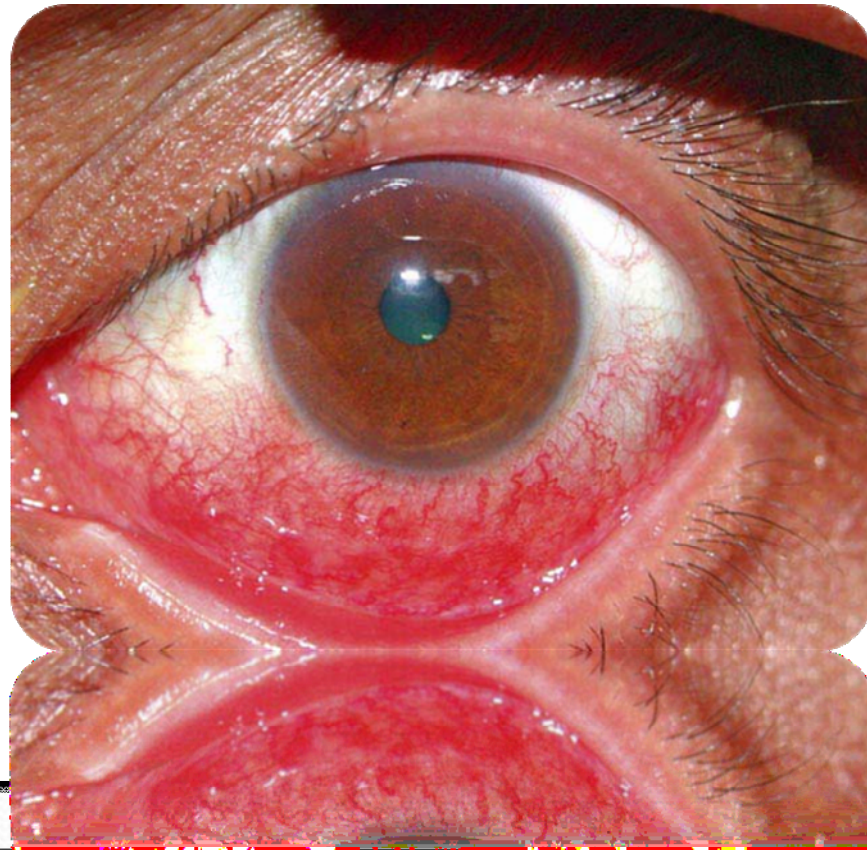
Discharge

Appearance

Pupils



Allergic



Conjunctivitis

History

Vision

Discharge

Appearance

Pupils



Bacterial



Conjunctivitis

History

Vision

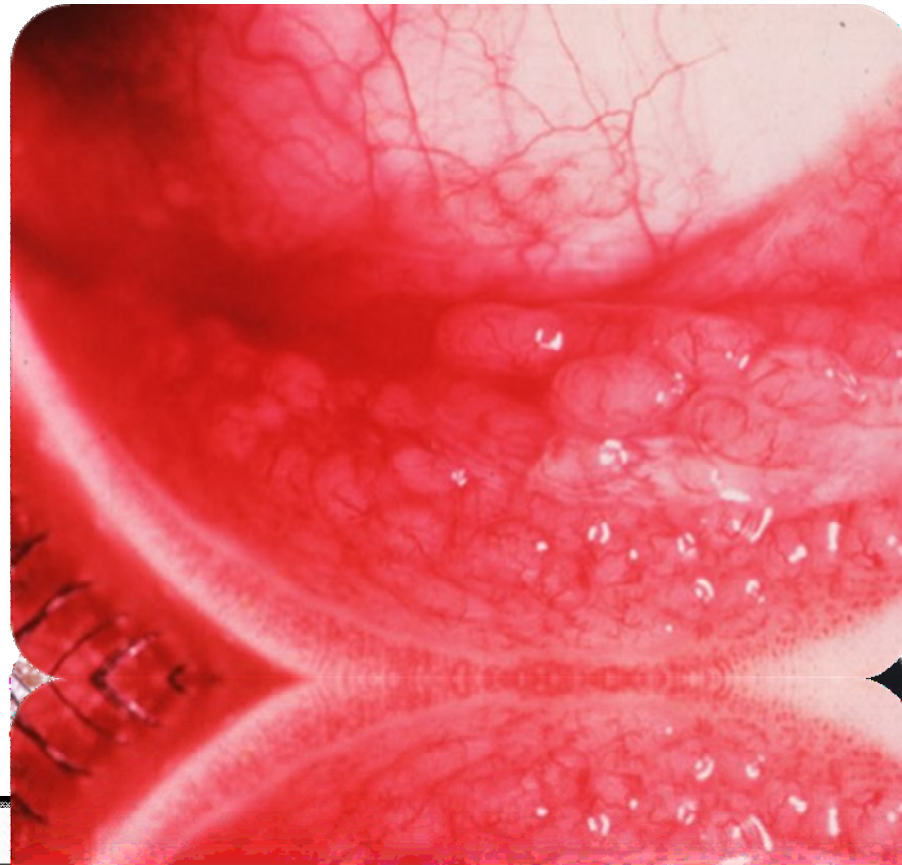
Discharge

Appearance

Pupils



Follicles/Papillae



Conjunctivitis

History

Vision

Discharge

Appearance

Pupils



Normal

Adenovirus Keratoconjunctivitis



Pseudomembranous conjunctivitis



Conjunctivitis - Management

- Swab and isolate responsible organism
- Bacterial = Topical Chloramphenicol
- Viral = Supportive Rx (compresses, lubricants)
- Chlamydia = Oral Azithromycin/doxycycline
- NSAIDs Drops



56 year old male

- Sudden realisation of vision loss Right eye.

- Painless

- No other symptoms

- -----

- Vision corrected 6/60 6/9

- Field ??

- Pupil ??

Sudden Painless Vision loss

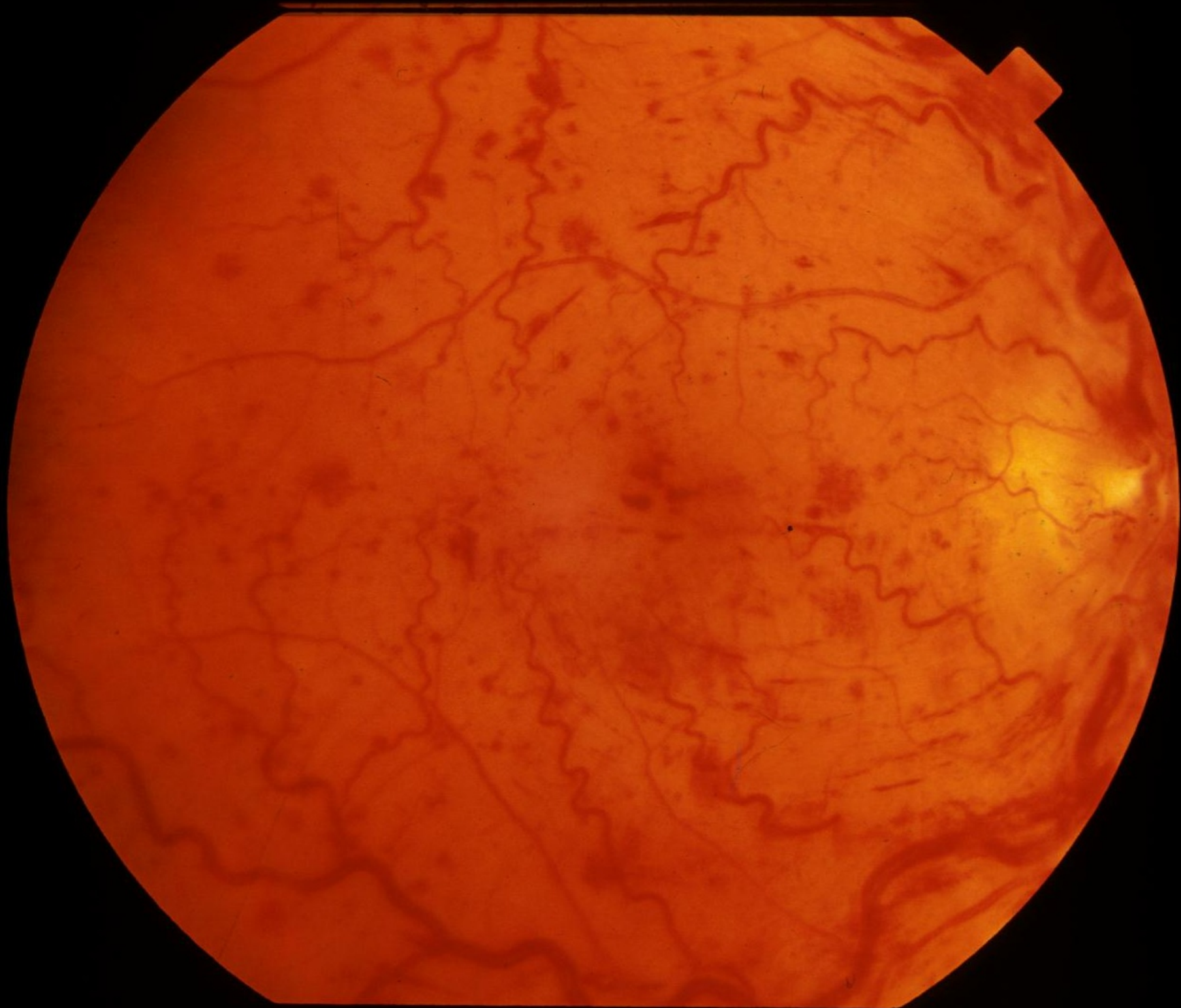
- ? Monocular
- ? Headache
- ? Flashes/ Floaters
- ? Pattern of field loss
- ? Acuity
- ? Pupils
- ? Retinal Appearance













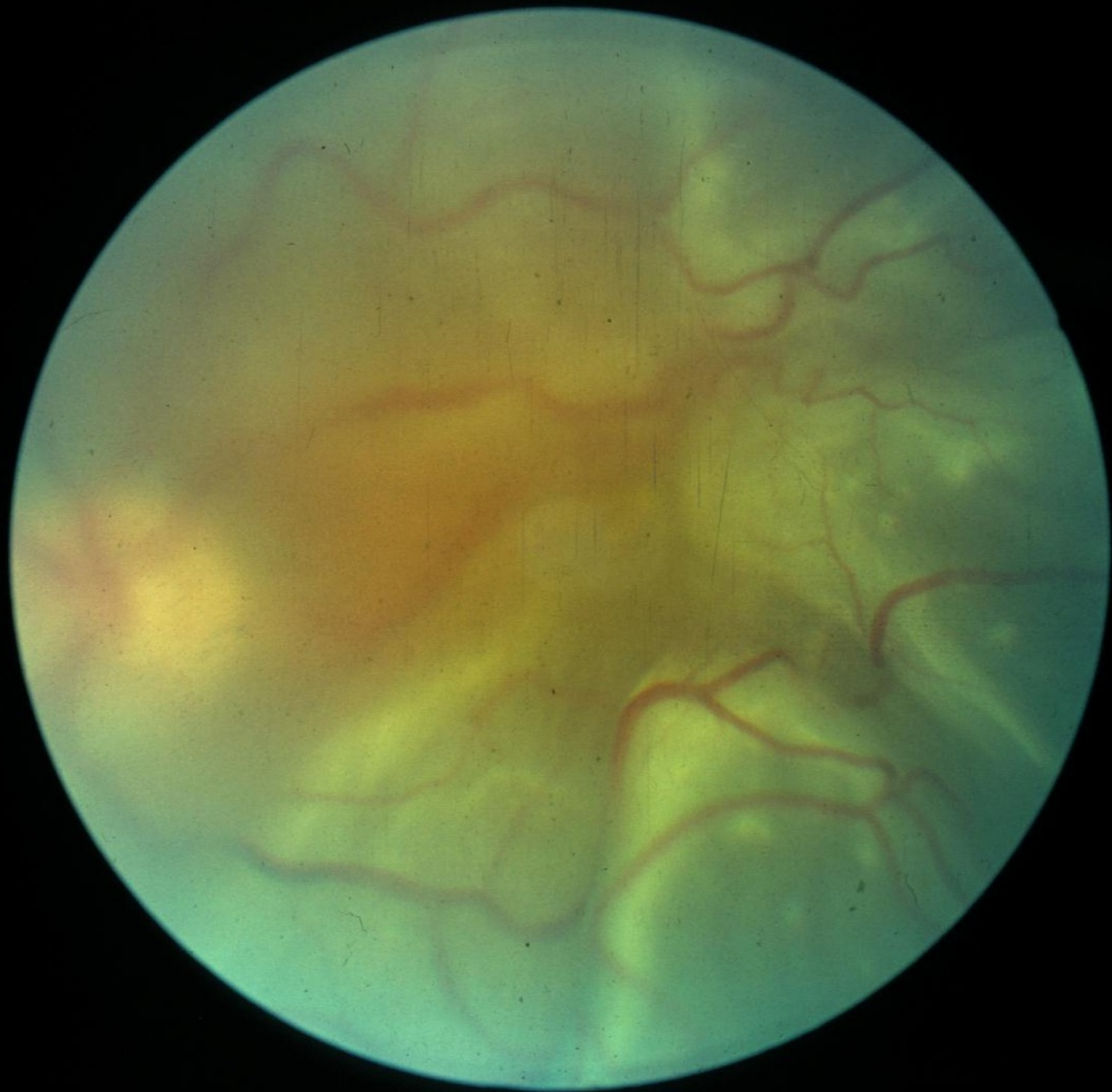














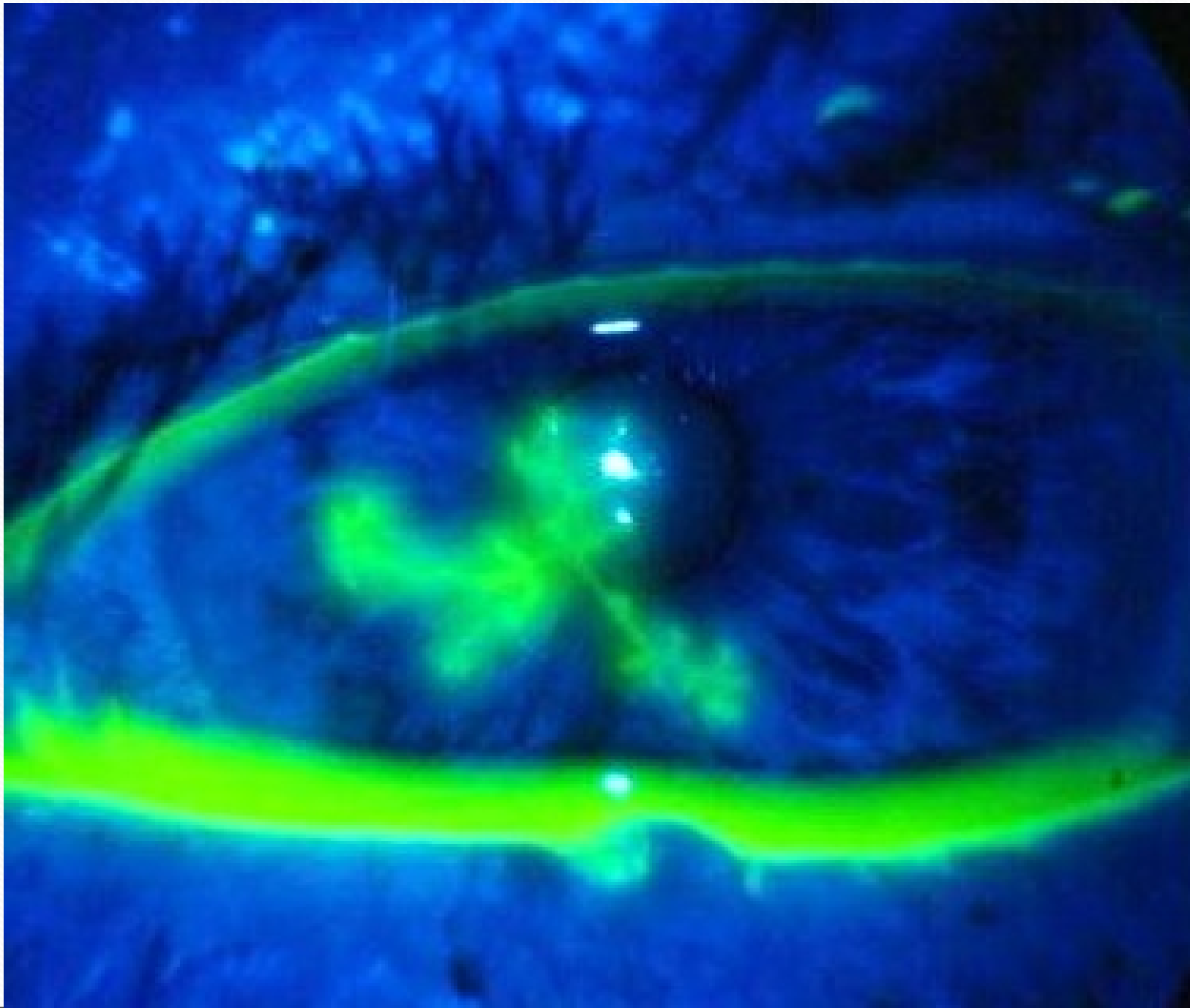
Sudden Painless Vision Loss

- Ischaemic Optic Neuropathy (?GCA)
- Central Retinal Artery Occlusion
- Central Retinal Vein Occlusion
- Vitreous Haemorrhage
- Retinal Detachment / Vitreous detachment
- Cortical/Subcortical
- Optic Neuritis



17 year old male

- ? Onset pattern - 3 Days
 - ? Unilateral - Right
 - ? Vision - poor
 - ? Pain - Yes
 - ? Associations - None
-
- ? Visual Acuity - 6/12 6/6
 - ? Pupils - Normal
 - ? Flourescein -
 - ? Pattern of redness - Limbal



Herpes simplex blepharo -conjunctivitis



A fluorescence microscopy image showing a dendritic ulcer. The ulcer is a branching, tree-like structure with a bright green/yellow core and blue outer edges, set against a dark background. A bright blue oval structure is visible in the upper right.

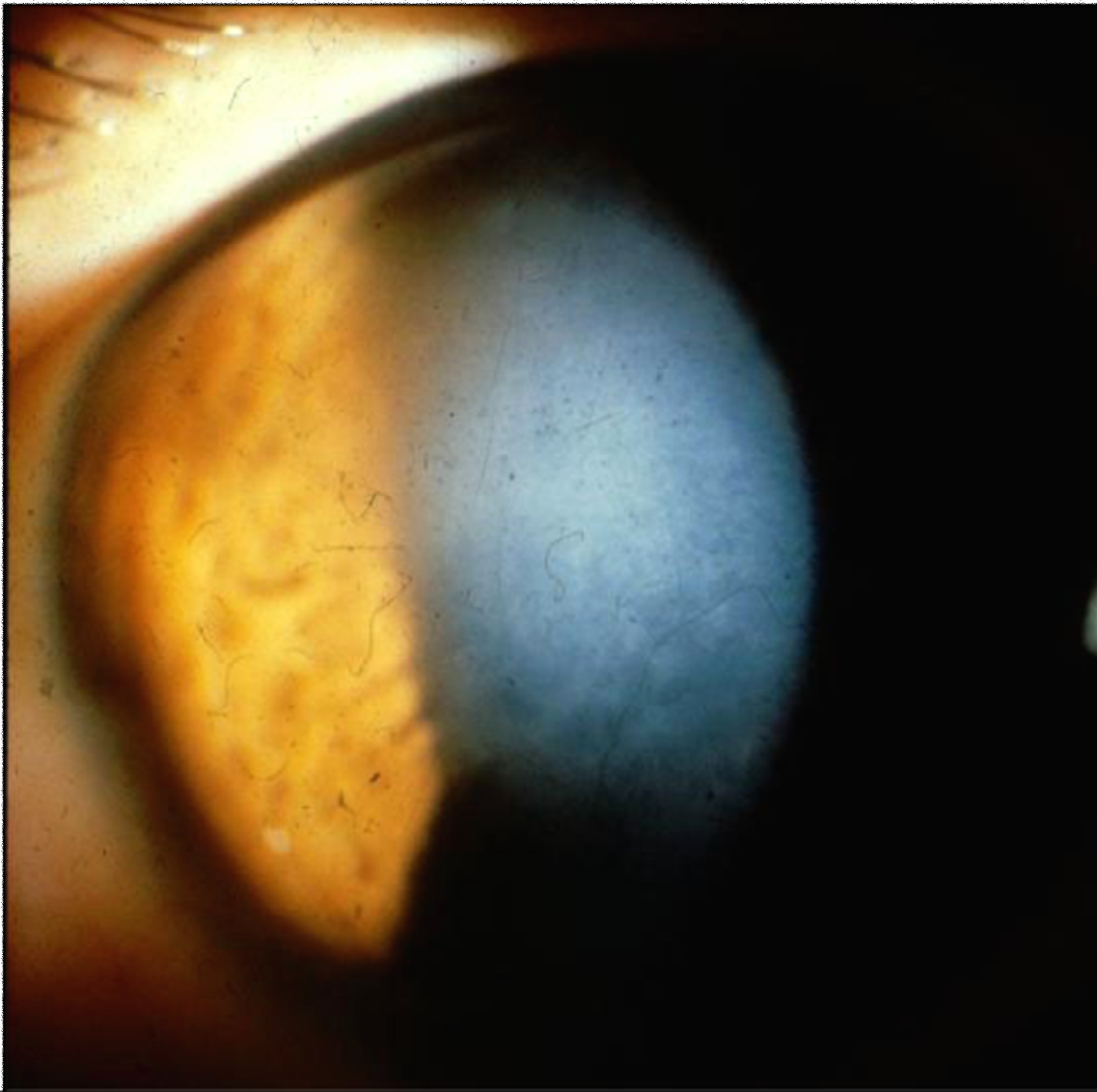
Dendritic Ulcer

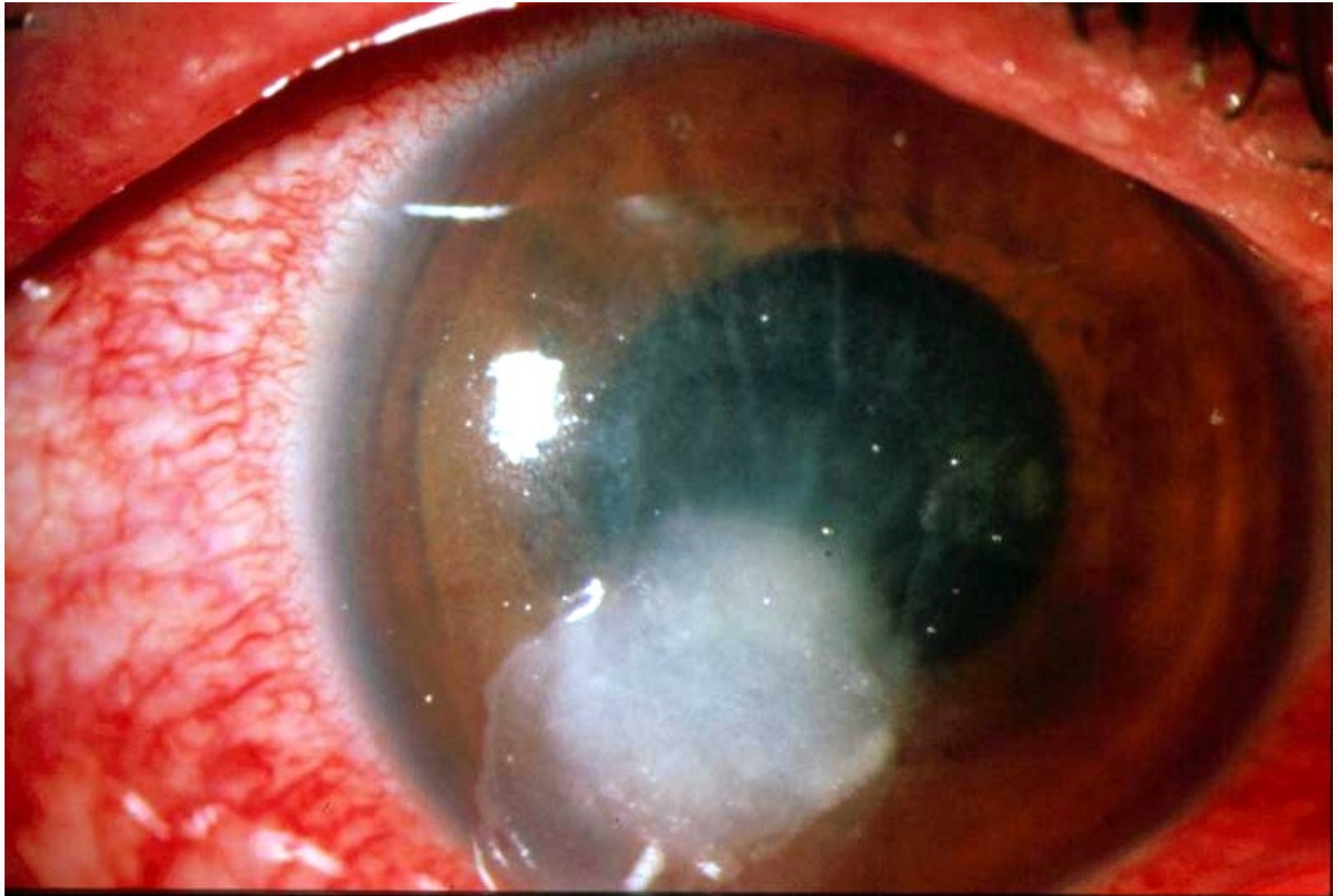
50% will heal without Rx

Acyclovir 95% heal within 2 weeks

25% risk recurrence within 5 years

Disciform Keratitis

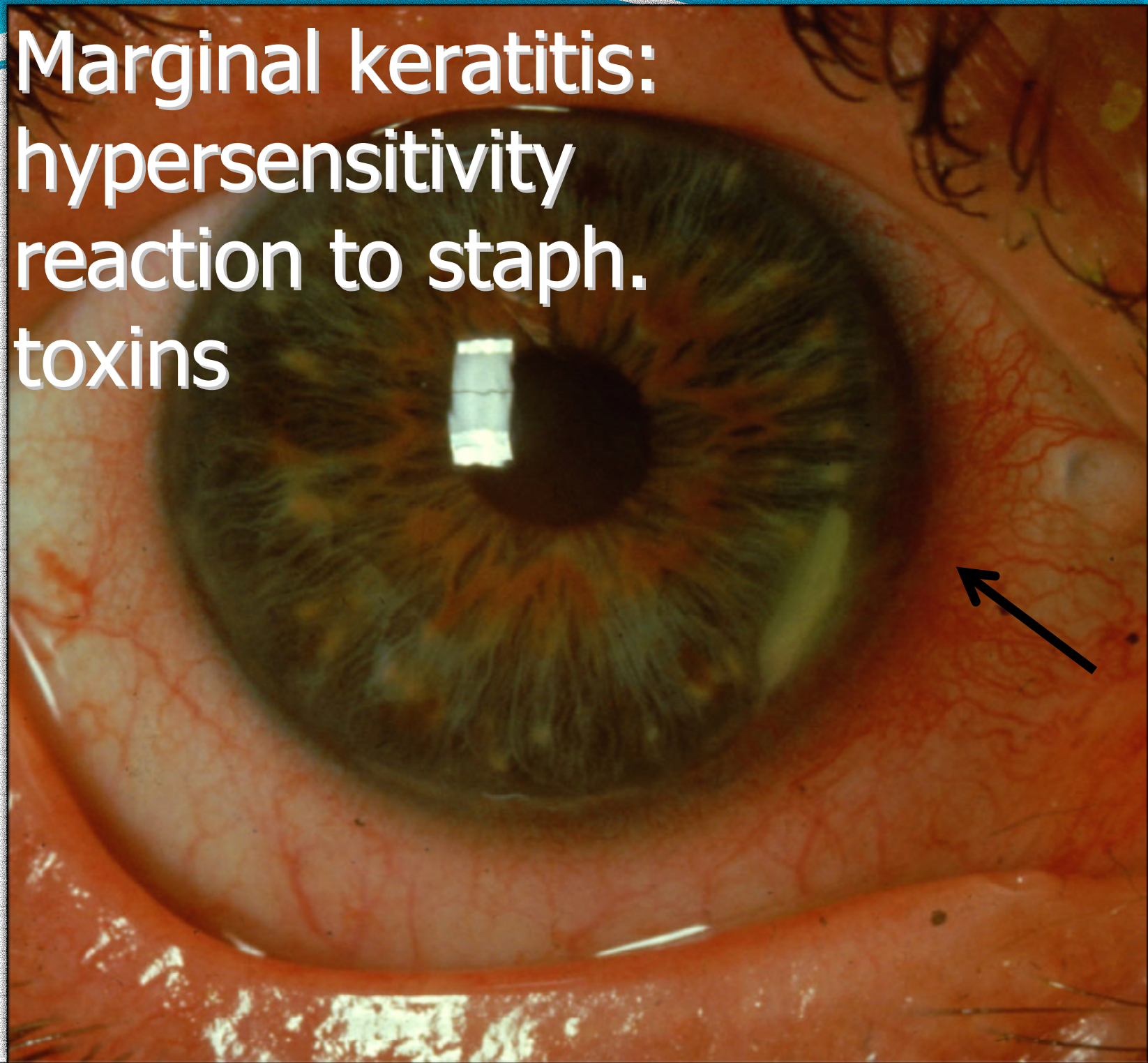




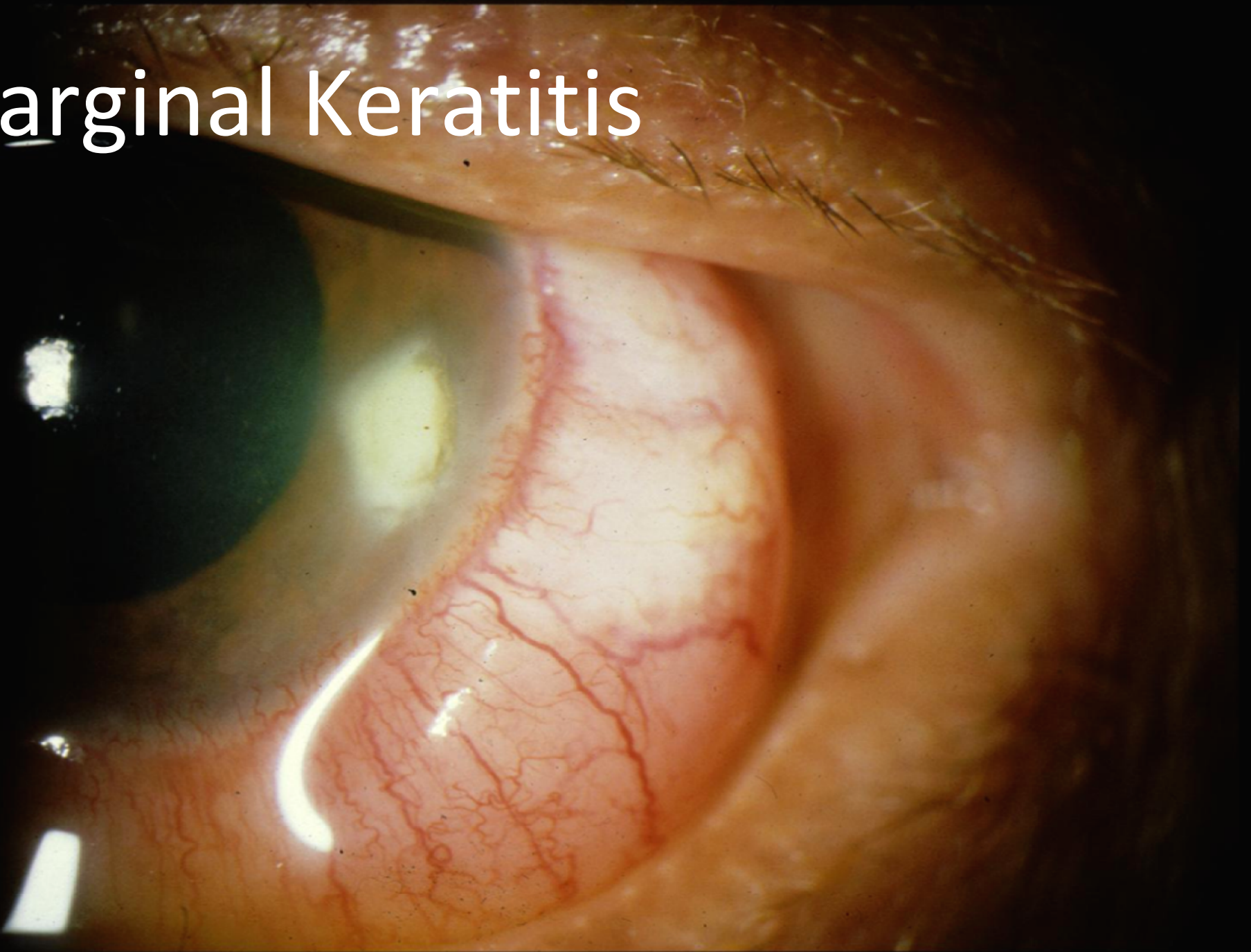
Amoeboid Ulcer



Marginal keratitis:
hypersensitivity
reaction to staph.
toxins



Marginal Keratitis



Keratitis

Keratitis

History



Vision

Discharge

Appearance

Pupils

- Painful (foreign body sensation)
- Photophobic
- Tearing
- Hx of CL wear/trauma

Keratitis

History

Vision



Discharge

Appearance

Pupils

- Decreased
 - Especially if involves visual axis

Keratitis

History

Vision

Discharge

Appearance

Pupils



- Watery, purulent
 - (depends on cause)

Keratitis

History

Vision

Discharge

Appearance

Pupils



- Circumcorneal injection
- Corneal infiltrate/hazy cornea
- Overlying epithelial defect

Keratitis

History

Vision

Discharge

Appearance

Pupils



Bacterial



Keratitis

History

Vision

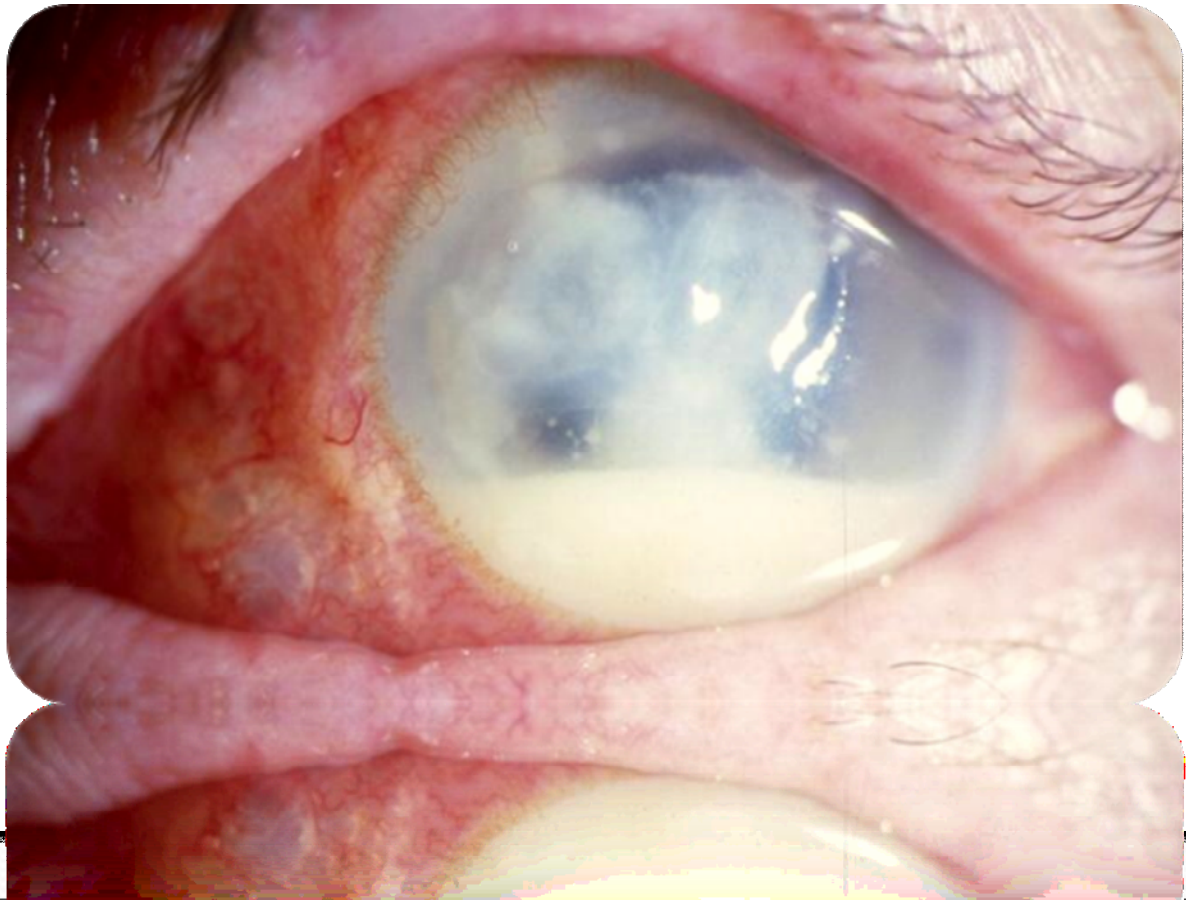
Discharge

Appearance

Pupils



Fungal



Keratitis

History

Vision

Discharge

Appearance

Pupils



Viral



Keratitis

History

Vision

Discharge

Appearance

Pupils



Normal

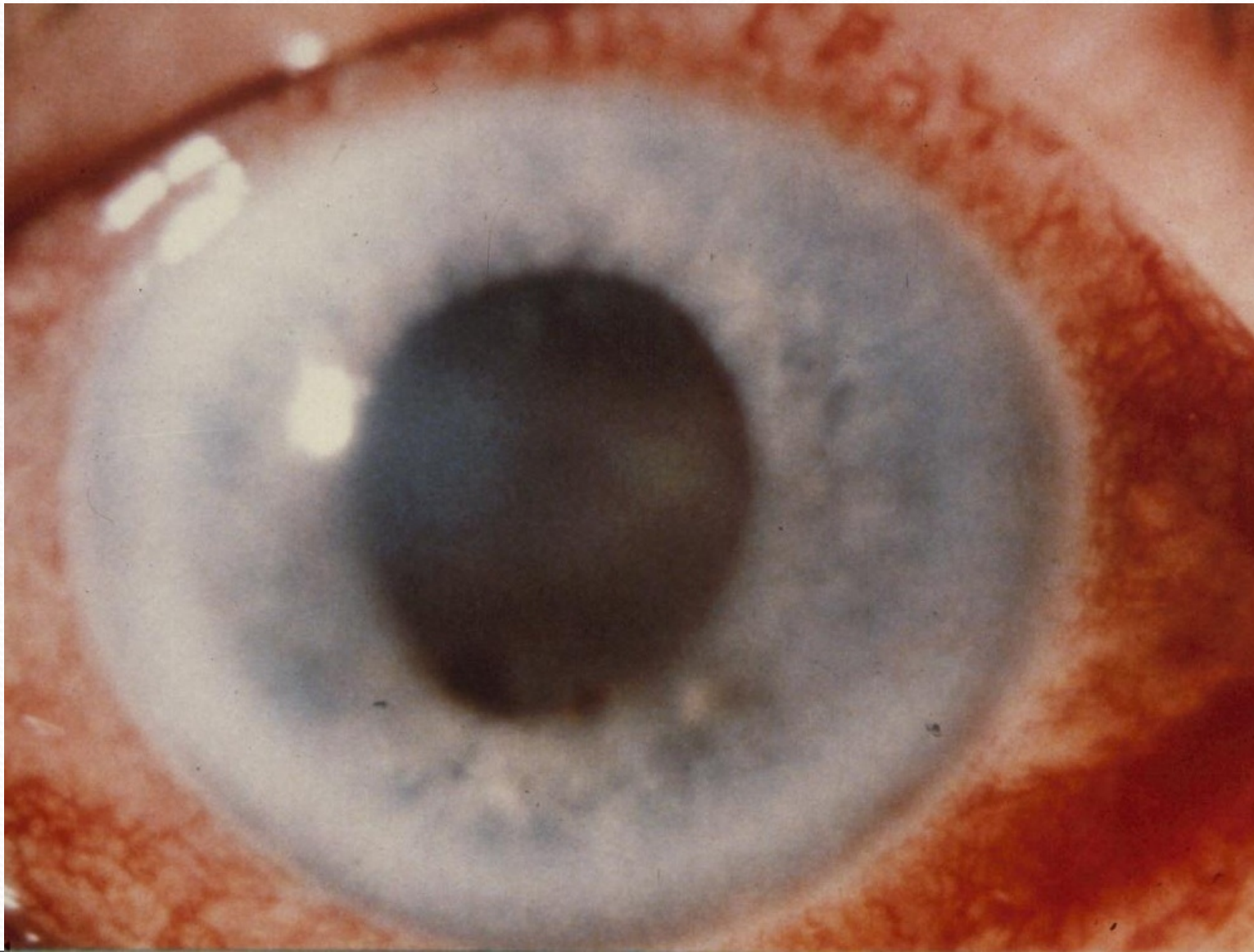


62 Year old Female

- ? Onset pattern - Over hours
 - ? Unilateral
 - ? Vision - Poor
 - ? Pain - Severe
 - ? Associations - vomiting, headache, abdominal pain.
-

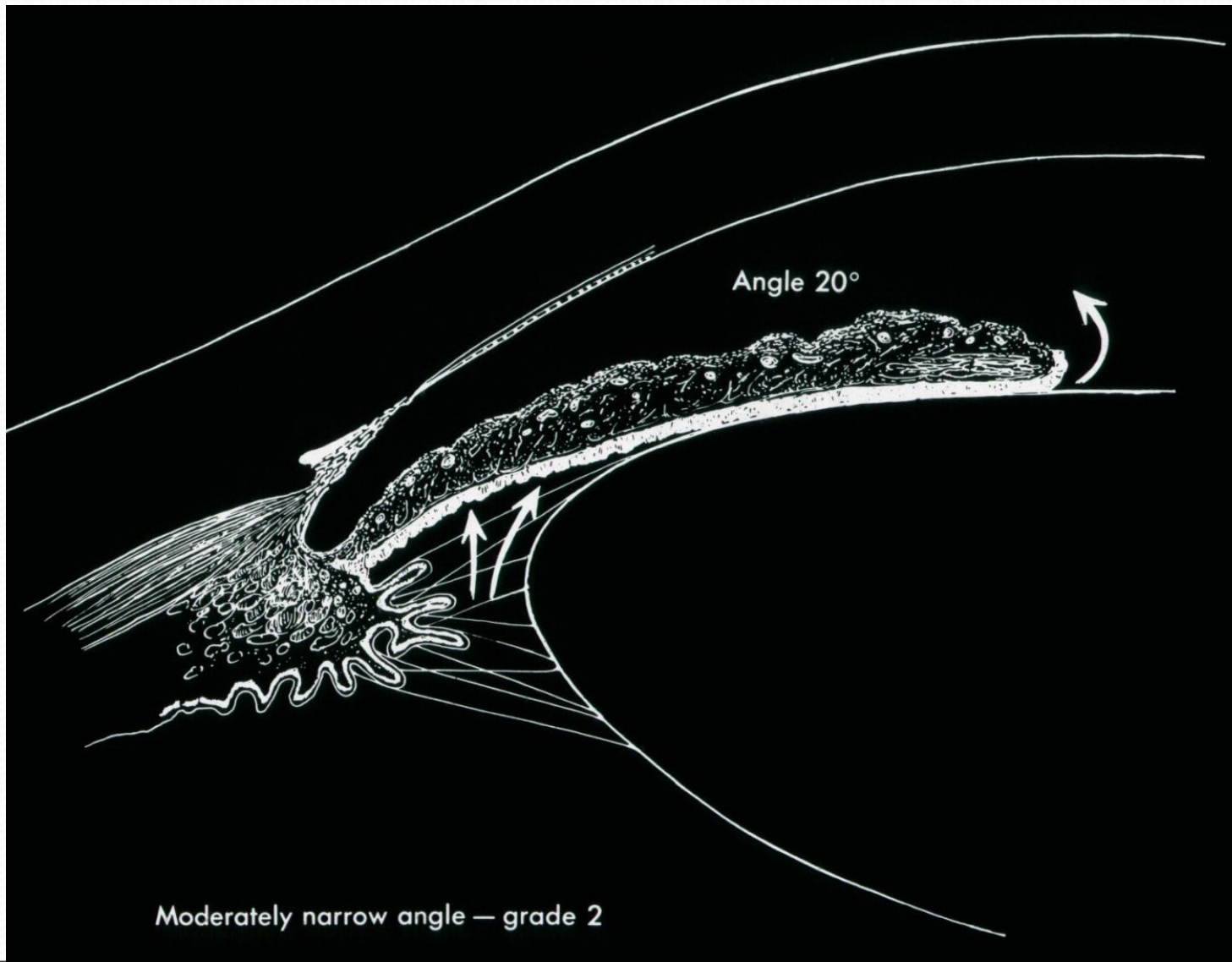
- ? Visual Acuity - HM 6/9
- ? Pupils - Fixed mid dilated
- ? Flourescein - Negative
- ? Pattern of redness

Acute closed angle glaucoma



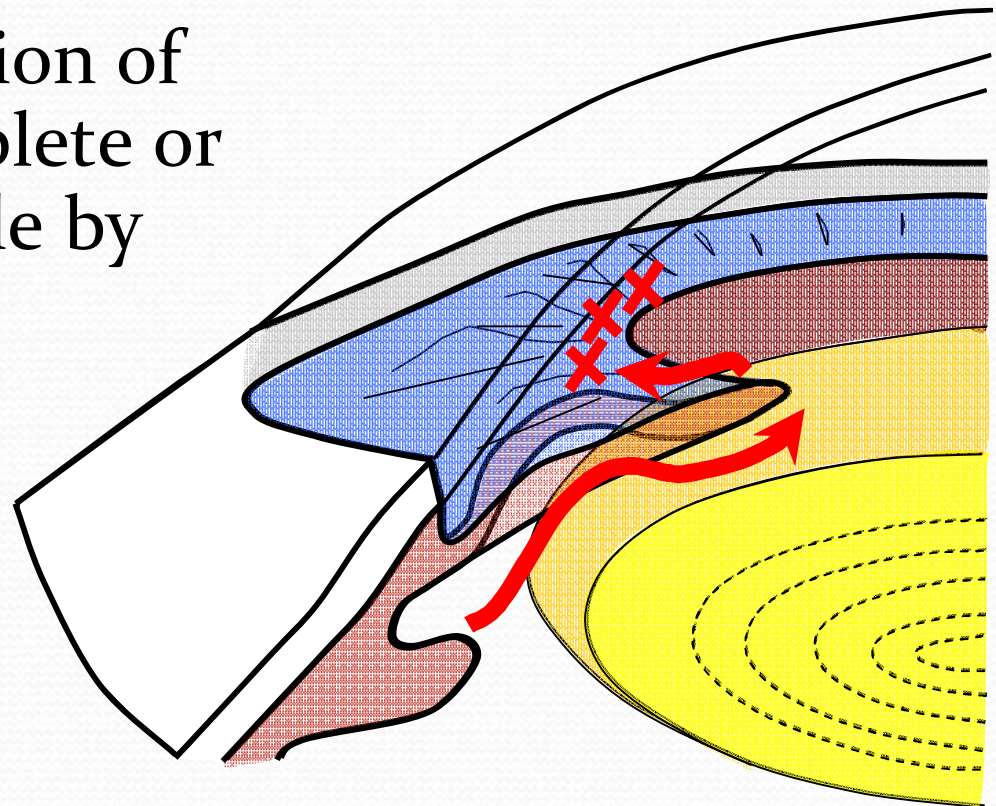
Acute angle closure crisis

Acute closed angle glaucoma: Anatomical Predisposition



Acute angle closure crisis

- in IOP due to obstruction of aqueous outflow by complete or partial closure of the angle by peripheral iris
- Incidence
 - 1/1000 in > 50 y.o.
- Male: Female
 - 4:1



Acute angle closure crisis

History



Vision

Discharge

Appearance

Pupils

- Intense ocular pain & headache
- Nausea & vomiting
- Photophobia
- Premonitory symptoms
- Hypermetropes

Acute angle closure crisis

History

Vision



Discharge

Appearance

Pupils

- Very blurred
 - Secondary to corneal oedema

Acute angle closure crisis

History

Vision

Discharge

Appearance

Pupils

• None

Acute angle closure crisis

History

Vision

Discharge

Appearance

Pupils



- Circumcorneal injection
- Cloudy cornea
- Optic nerve head swelling
 - If prolonged attack

Acute angle closure crisis

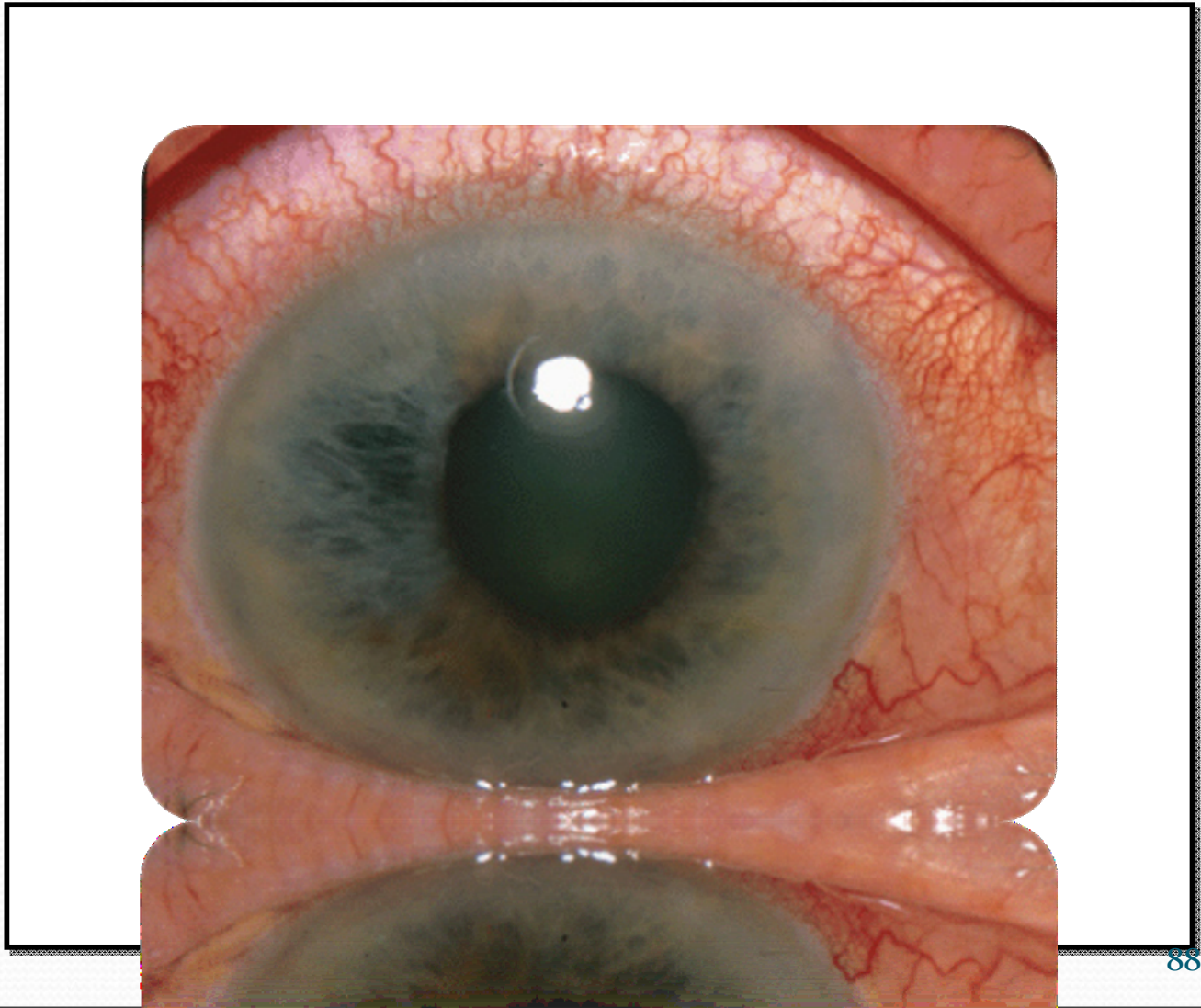
History

Vision

Discharge

Appearance

Pupils



Acute angle closure crisis

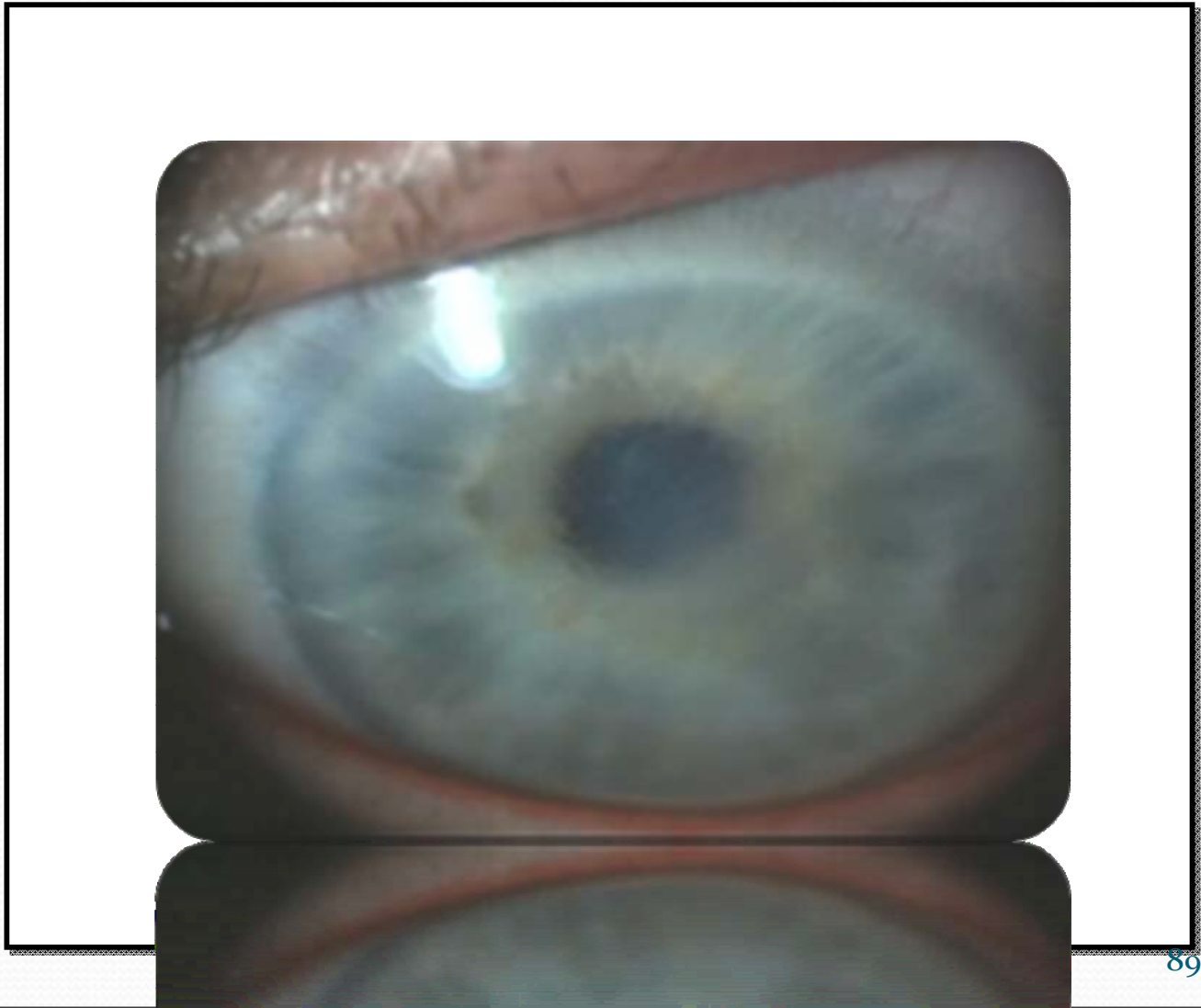
History

Vision

Discharge

Appearance

Pupils



Acute angle closure crisis

History

Vision

Discharge

Appearance

Pupils



Acute angle closure crisis

History

Vision

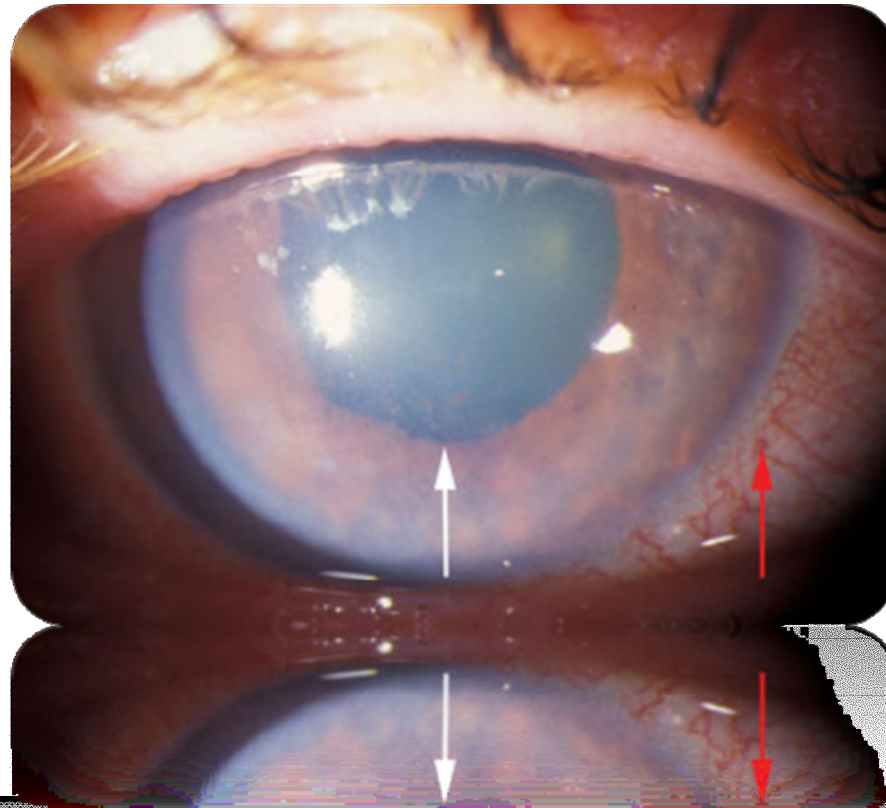
Discharge

Appearance

Pupils



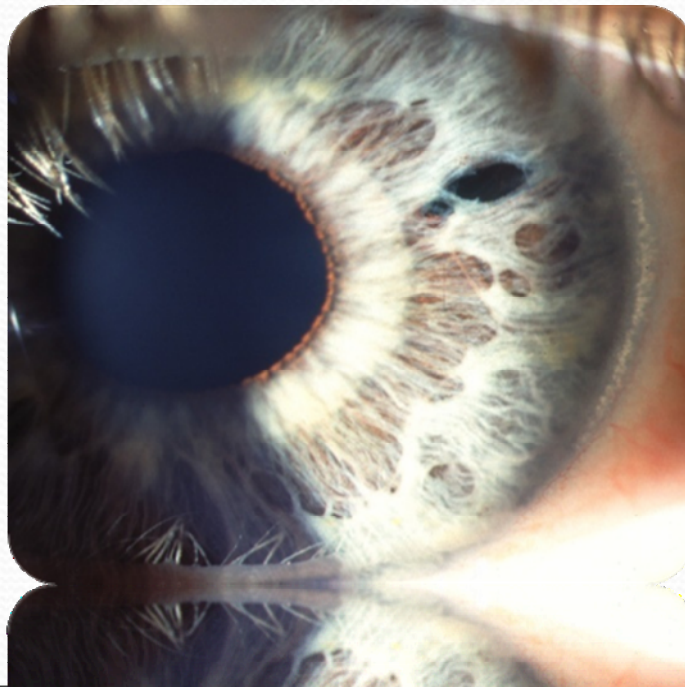
Mid-fixed, dilated



AACC - Management

- Reduce IOP (often starts > 50 mmHg)
 - Medical
 - Topical:
 - Alpha-agonist, Beta-blockers, Mitotics (Pilocarpine)
 - Systemic:
 - Carbonic anhydrase inhibitors (Diamox), Osmotics (Mannitol)
 - Surgical
 - Peripheral iridotomy
 - Clear lens extraction/trabeculectomy

Peripheral Iridotomy

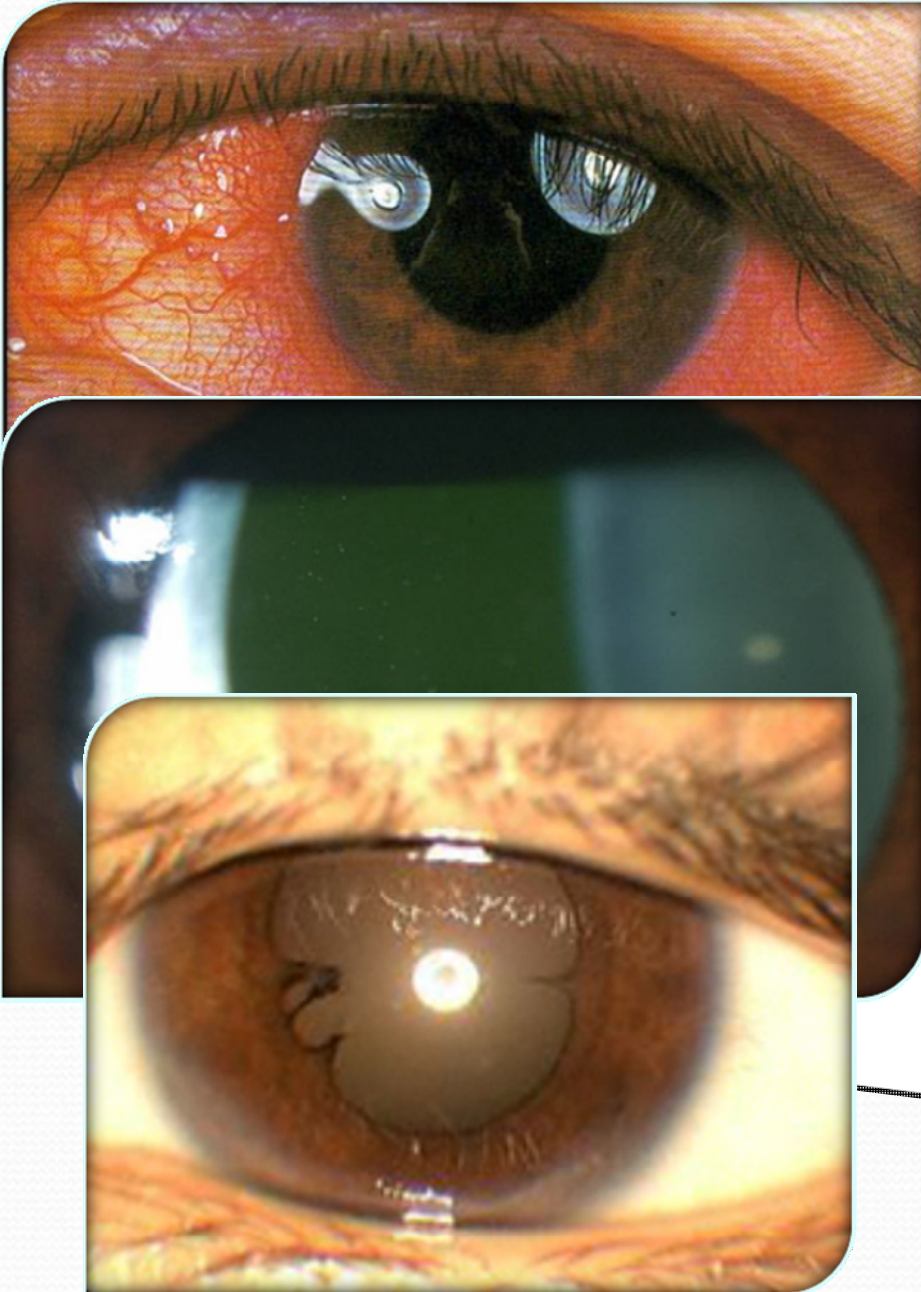




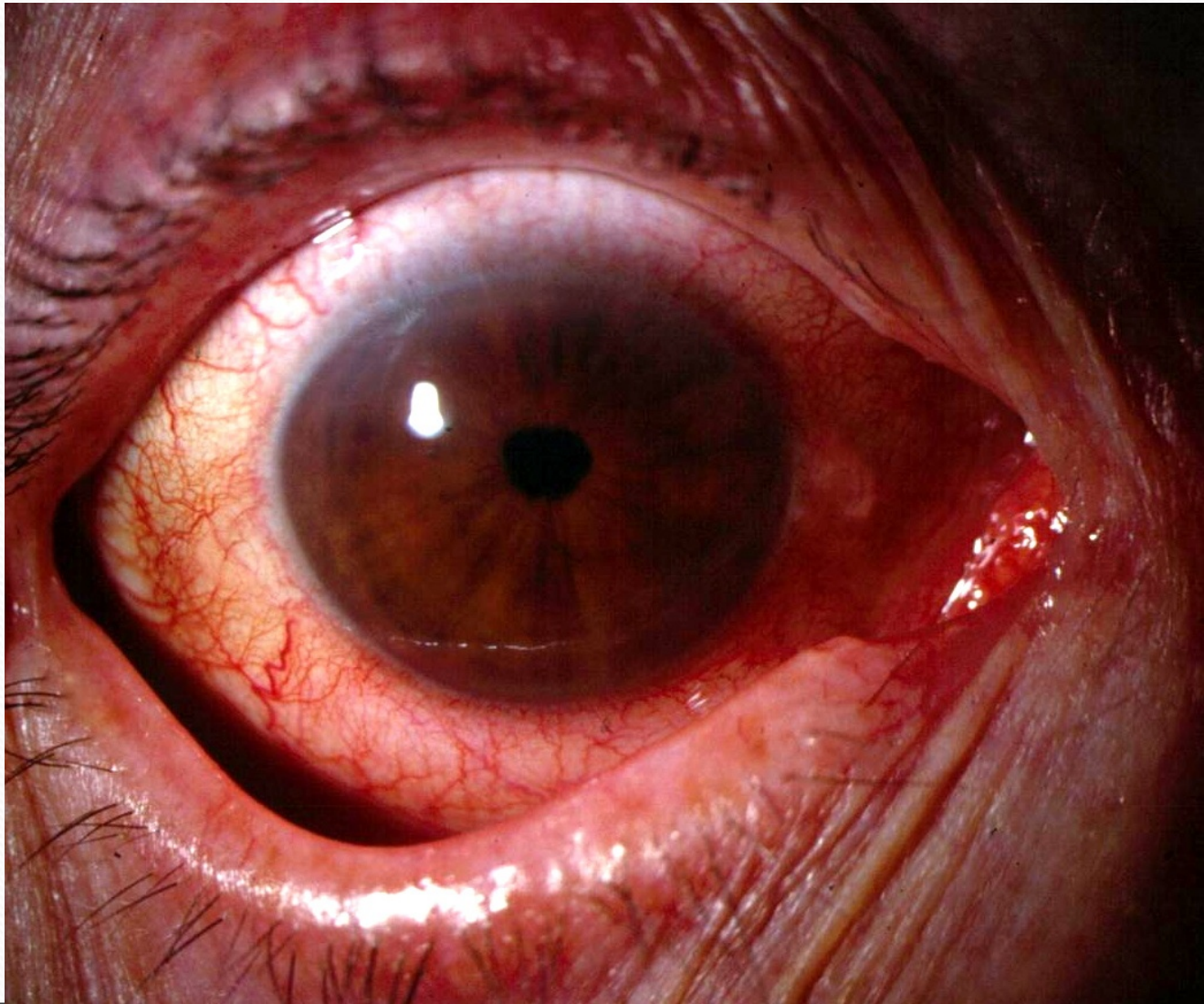


More red eyes, no precipitating event

- Treated for viral conjunctivitis and no improvement with chloramphenicol
 - Sore red eye for last week
 - Happened out of the blue.
 - Similar episode in past but did not seek help
 - VA L 6/18
-
- What features in the history are you interested in?
 - What examination findings are consistent with diagnosis?
 - What investigations would you like to do (if any) and why?



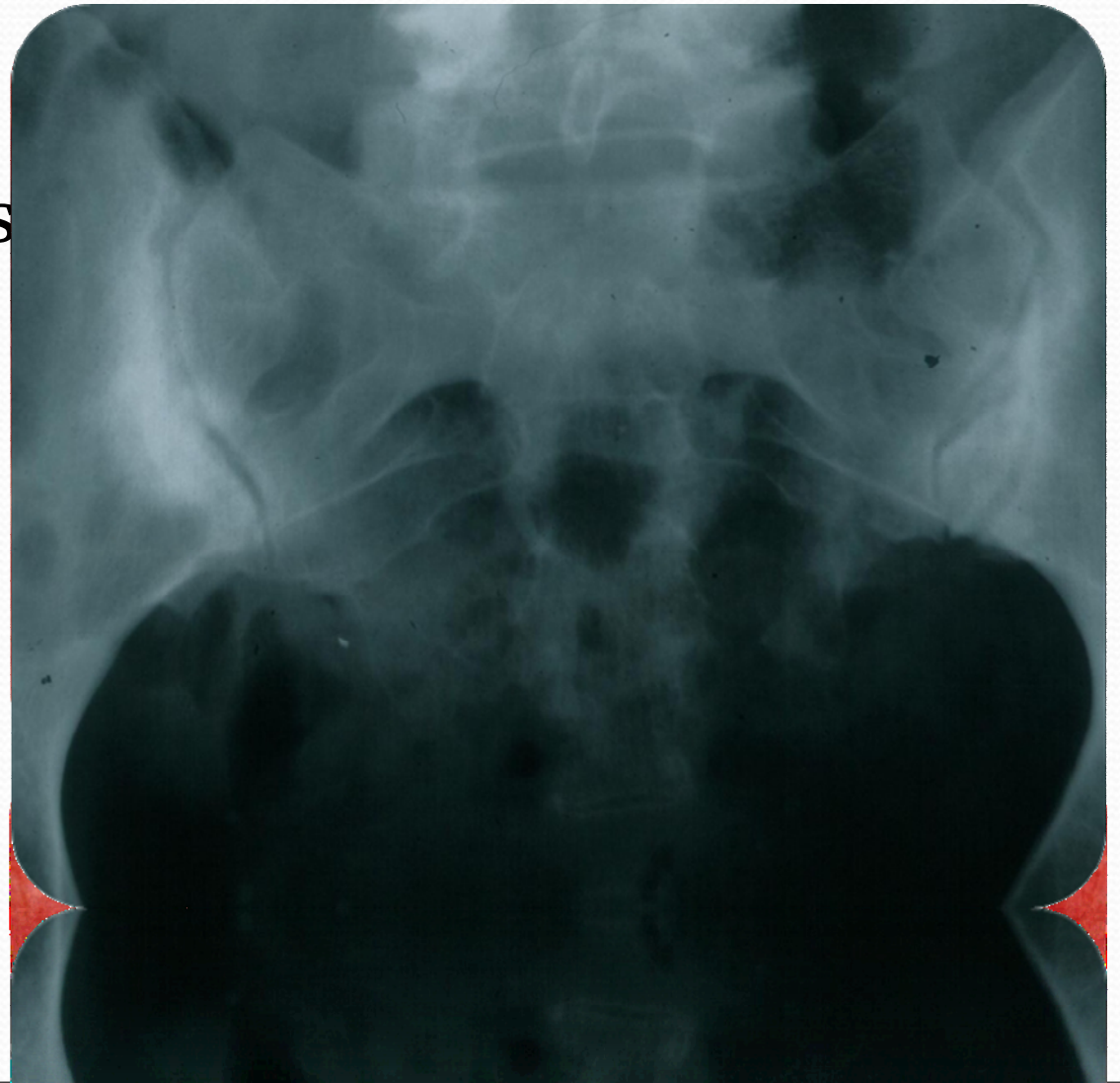
**Corneal edge - a pinky colour,
called “ciliary flush”.**



Acute Anterior uveitis/iritis

Acute anterior uveitis - aetiology

- Idiopathic
- Ankylosing spondylitis
- Reiter's syndrome
- Juvenile arthritis
- Psoriatic arthropathy
- Sarcoidosis



Acute anterior uveitis

History



Vision

Discharge

Appearance

Pupils

- Moderate aching pain
- Photophobia
- Past history (esp if HLA-B27)
- Systemic symptoms

Acute anterior uveitis

History

Vision



- Blurred

Discharge

Appearance

Pupils

Acute anterior uveitis

History

Vision

Discharge

Appearance

Pupils



- None

Acute anterior uveitis

History

Vision

Discharge

Appearance

Pupils



- Circumcorneal injection
- Clear cornea

Acute anterior uveitis

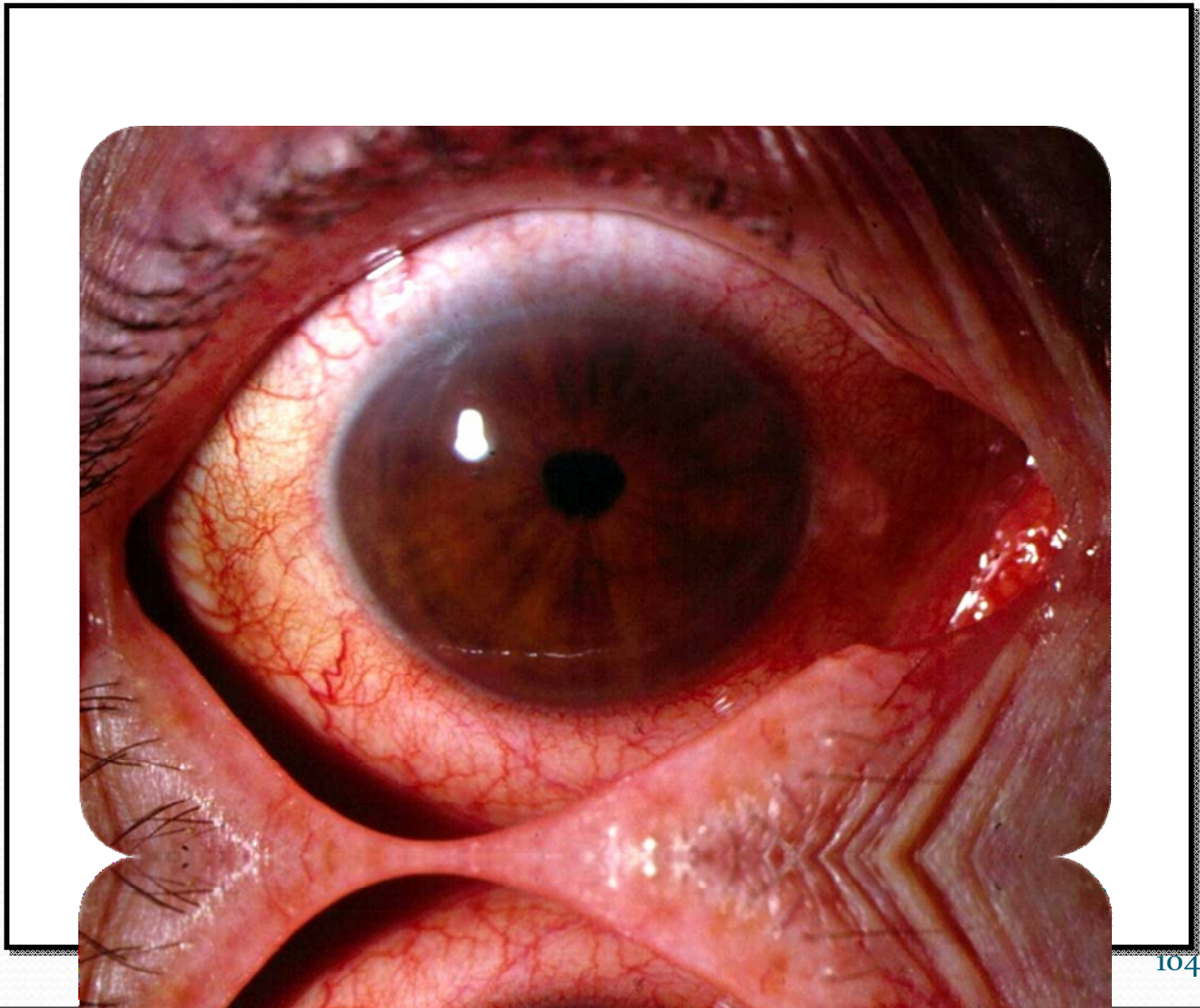
History

Vision

Discharge

Appearance

Pupils



Acute anterior uveitis

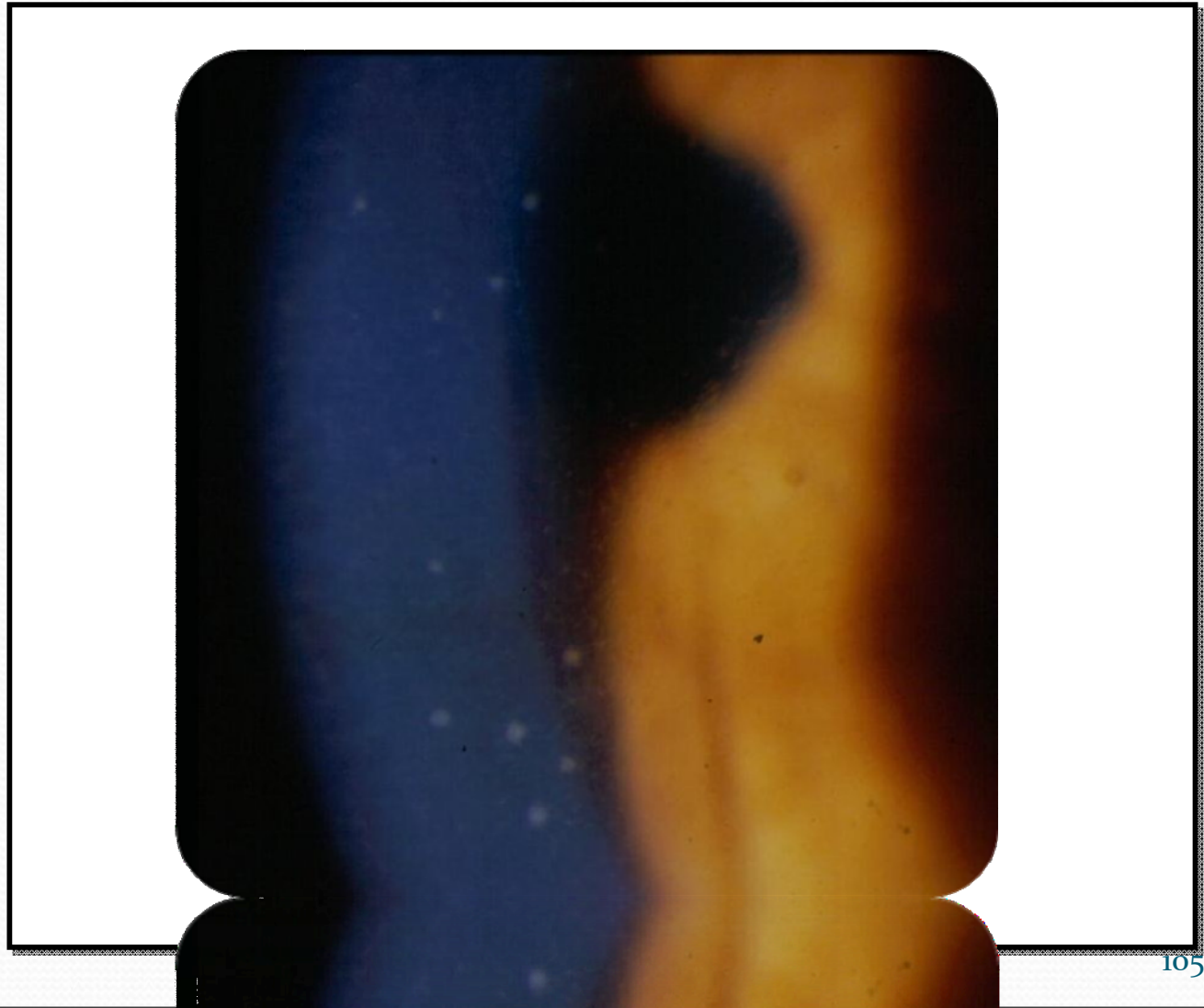
History

Vision

Discharge

Appearance

Pupils



Acute anterior uveitis

History

Vision

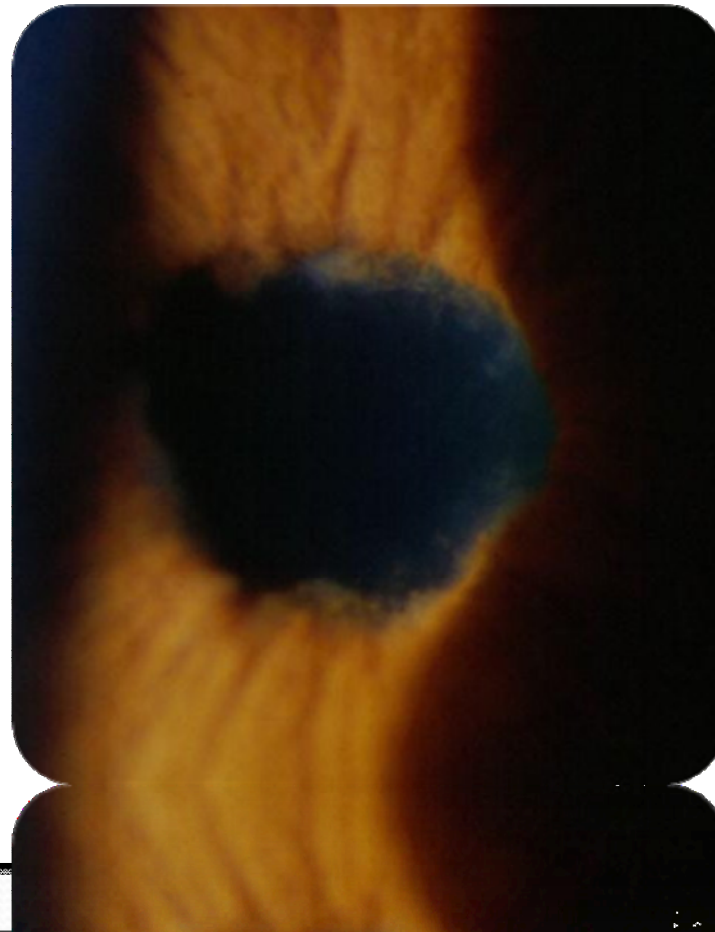
Discharge

Appearance

Pupils



Miotic/sluggish response to light



Acute anterior uveitis

History

Vision

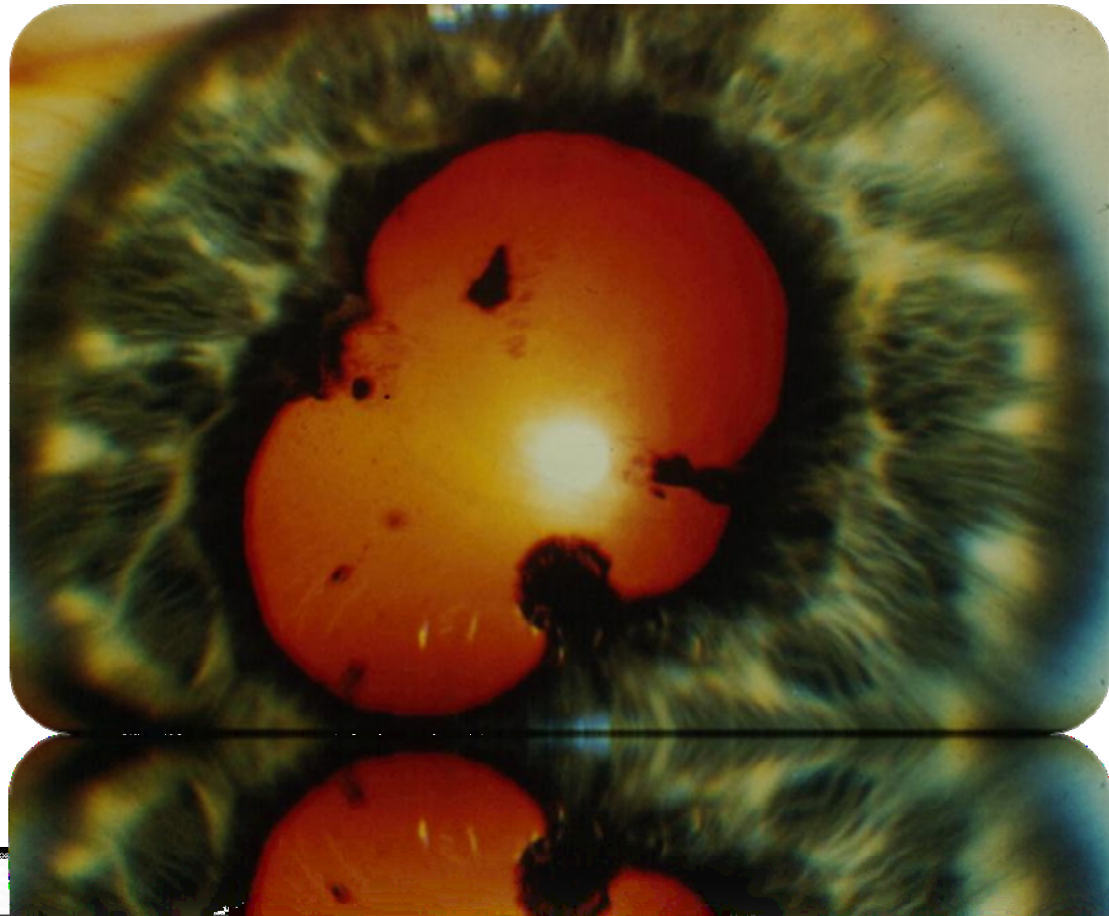
Discharge

Appearance

Pupils



Posterior synechiae



AAU - Management

- Subdue inflammation
 - Topical corticosteroids (g.predforte)
- Prevent posterior synechiae
 - Mydriatics (g.cyclopentolate)
- Watch for elevated IOP
 - Topical ocular hypotensives (g.timolol)

Scleritis/EPIISCLERITIS

Scleritis

- Relatively uncommon

Episcleritis

- Relatively common

Scleritis

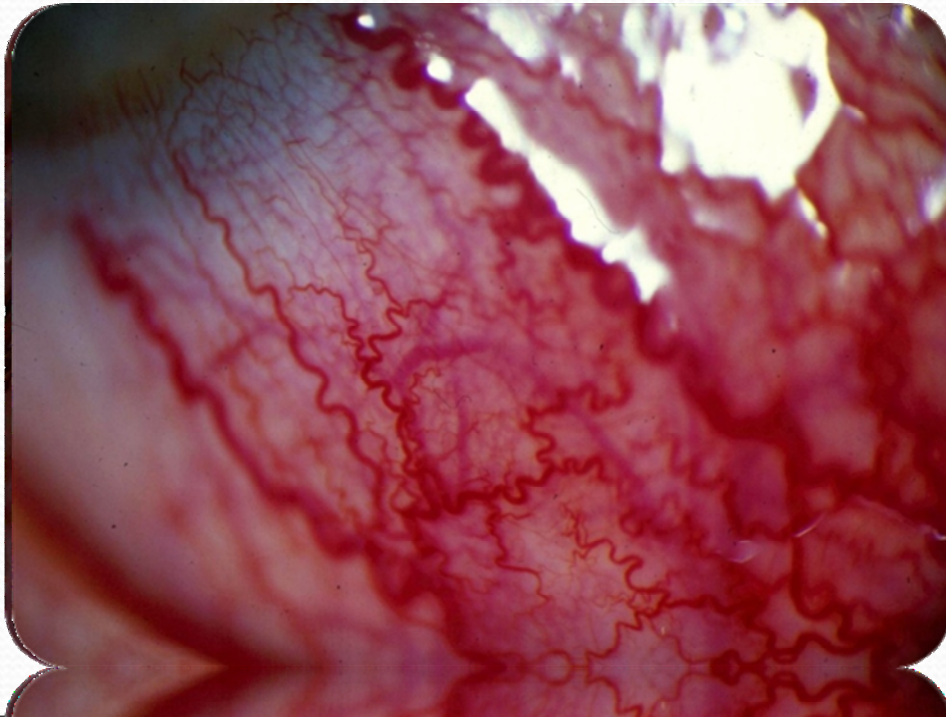
- Relatively uncommon
- Severe boring pain
 - “wakes from sleep”

Episcleritis

- Relatively common
- Mild ocular discomfort

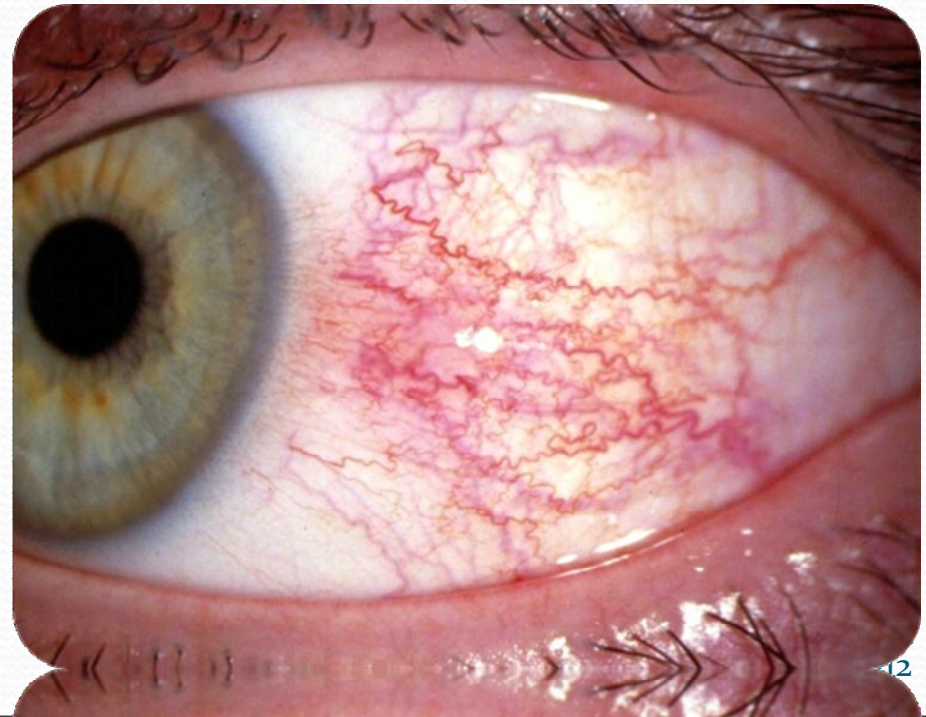
Scleritis

- Relatively uncommon
- Severe boring pain
- Focal injection of deep scleral vessels



Episcleritis

- Relatively common
- Mild ocular discomfort
- Focal injection of episcleral vessels



Scleritis

- Associations
 - Herpes Zoster Ophthalmicus
 - Severe Rheumatoid Arthritis

Episcleritis

- Generally no associations



Scleritis

- Associations
 - Herpes Zoster Ophthalmicus
 - Severe Rheumatoid Arthritis
- Can lead to blindness if untreated
 - po.prednisone

Episcleritis

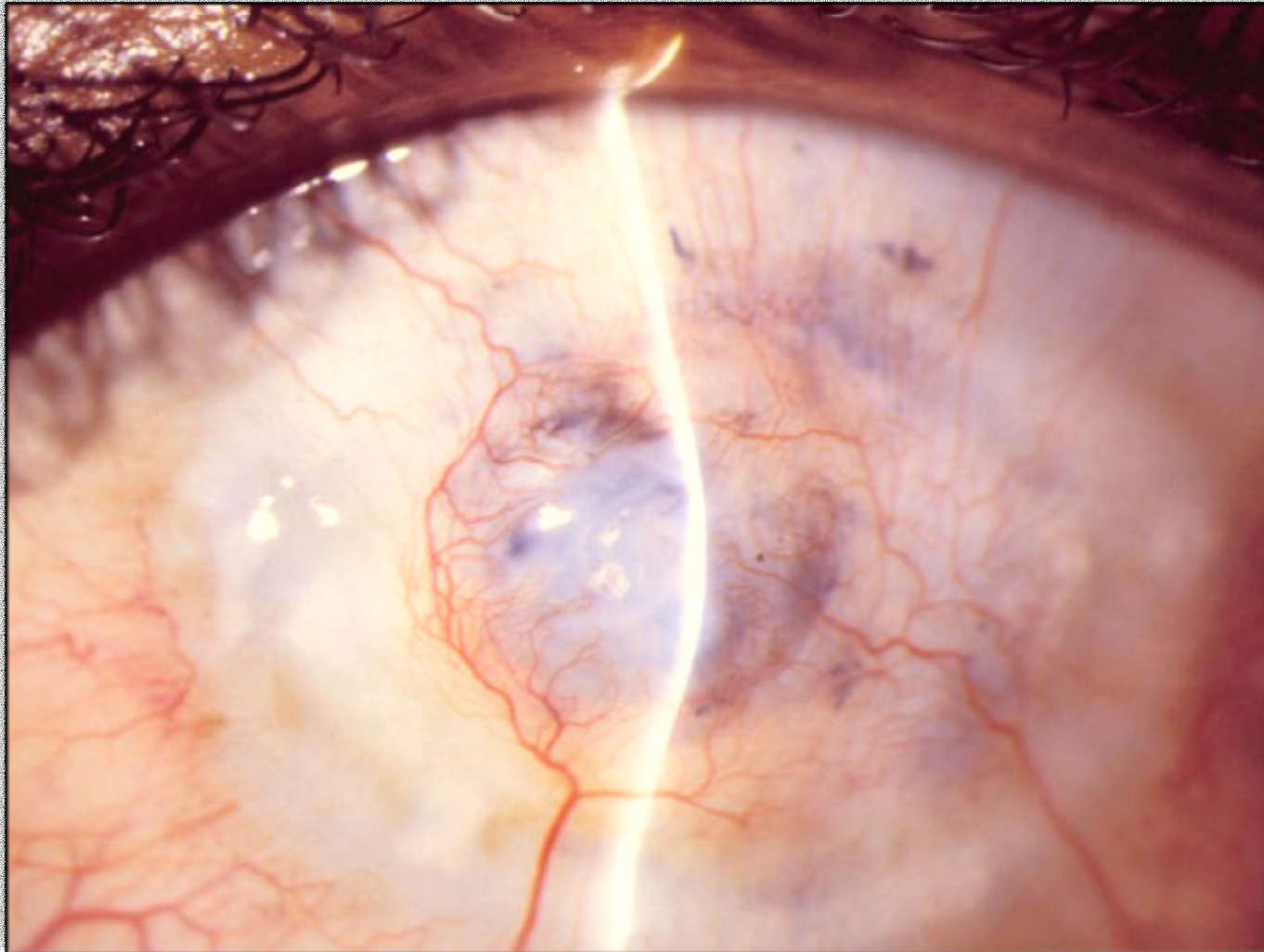
- Generally no associations
- Usually requires no treatment
 - g.lubricants/g.voltaren

Difficult Cases





Anaesthetic, Scarred Vascularised Cornea



Common A&E problems: red eyes, lids and cornea



- GP referral with red eyes 7/7
- No improvement with chloramphenicol
- Gritty, itchy eyes, started in RE then LE 2/7 later.
- VA 6/6, 6/6
- What important features must you ascertain from the history?
- What must you check on exam?
- How can you confirm the diagnosis?
- What treatment is indicated?

Common A&E problems: red eyes, lids and cornea



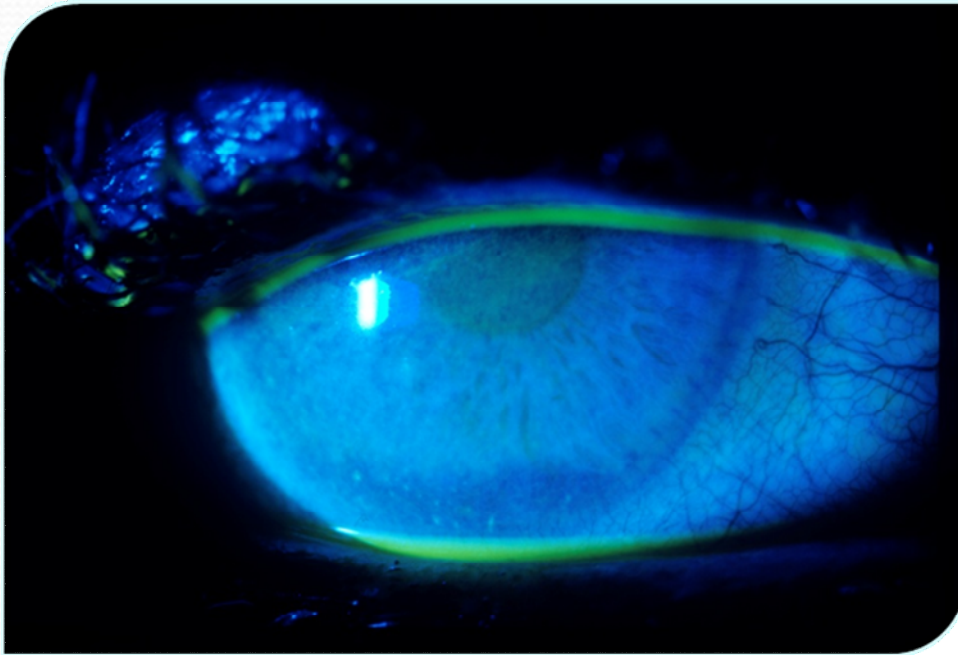
- GP referral with L corneal ulcer that stains with flourescein
- VA L 6/18
- What important features must you ascertain from the history?
- What should you check on exam before instilling flourescein and topical anesthetic?
- How can you confirm the diagnosis and what is your differential for corneal ulcers?

Chemical and thermal /UV injuries



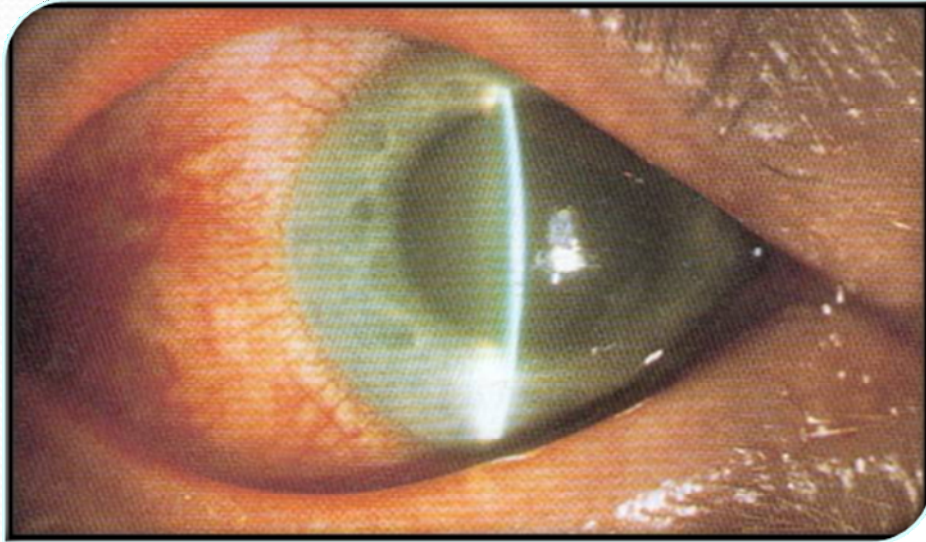
- Referral from Emergency Department with chemical injury to RE 2/7 ago.
- What is the immediate management of chemical injuries that involve the eye?
- What is worse acid or alkali?
- Why is it important to assess the limbus?

Chemical and thermal /UV injuries



- Grinding and welding a trailer at home 2/7 ago. LE sore and red from 10pm and now sensitive to bright light as well.
- What is the diagnosis?

Sight threatening problems (painful)



- GP referral with rapid onset (4/24) painful++ red eye cloudy cornea.
- VA 6/24
- What are the essential features of the examination you must check?
- Why is the cornea hazy?
- Why is the pupil mid dilated and sluggish?
- Why is this a sight threatening problem that requires urgent management?

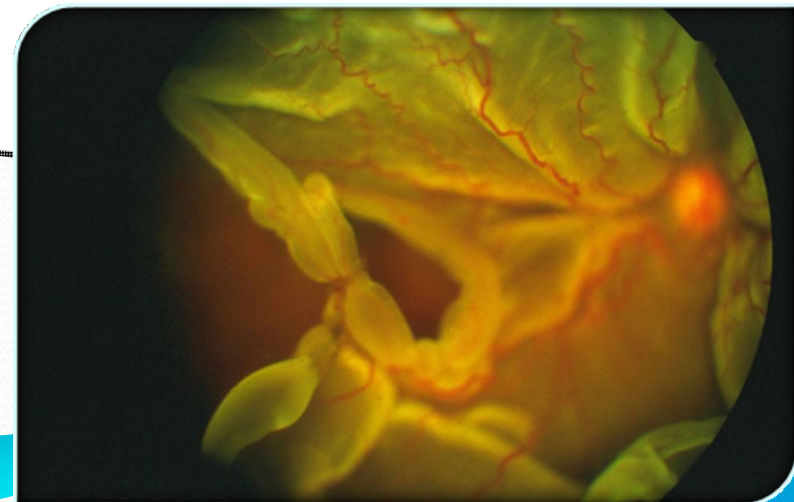
Sudden onset painless loss of vision

- Optometry referral –patient woke with painless loss of vision in one eye

- VA 6/60

Differential diagnosis includes:

- CRVO/BRVO
- CRAO/BRAO
- Retinal Detachment
- Ischaemic optic neuropathy
- Optic neuritis



Intermittant loss of vision

- GP calls with possible referral. 65 year old man with extensive history of left-sided headaches with general ache around his shoulders, mild weight loss and intermittent episodes of visual loss over past week.
- Any additional questions for GP?
- What is the differential diagnosis?
- What investigations would you like on arrival? What are the expected results in this condition?
- What should you include in your exam and why?
- How can you confirm the diagnosis? What is the treatment and when should it be started?

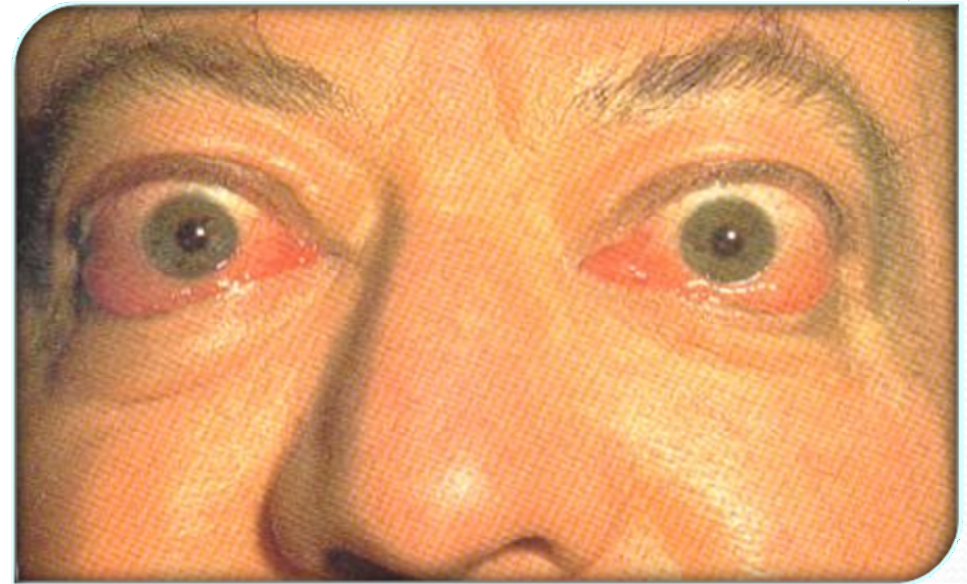
Orbital vs preseptal cellulitis



- Referral from Starship Hospital. 5 year old boy presents with swollen red RE. Not able to check vision ?orbital cellulitis.
- What is orbital cellulitis and how does it differ from preseptal cellulitis?
- How can you clinically differentiate these two conditions?
- What investigations or imaging is required?
- Why is orbital cellulitis a potentially life threatening problem?

What is going on here?

- GP referral with binocular diplopia for one month
- Patient complains of feeling hot at night but currently afebrile and FBC normal
- What is your differential diagnosis?
- What investigations would be helpful to confirm the diagnosis and plan management?



Ward call

- You are a house officer and have been asked by a nurse on the urology ward to see a man with double vision that started 2 hours ago and eyes look in “funny position”.
- What is the abnormality?
- Do you need to do anything about it now or can you leave a message for the team in the morning?
- What is the next step in management?



Don't forget...

Sight threatening

- Acute glaucoma
- Giant cell arteritis
- Intra ocular foreign body

Life threatening

- Third nerve palsy with pupil involvement
- Orbital cellulitis

Case study

- 65 year old man notices vision deteriorating “rapidly” over previous 3 weeks
- Copes well with hobby glasses for reading
- Right eye: can’t read top letter of vision chart
- Left eye: can read bottom line

Case study continued . . .

- Right field:
sees no points at all
- Left field:
advanced loss

