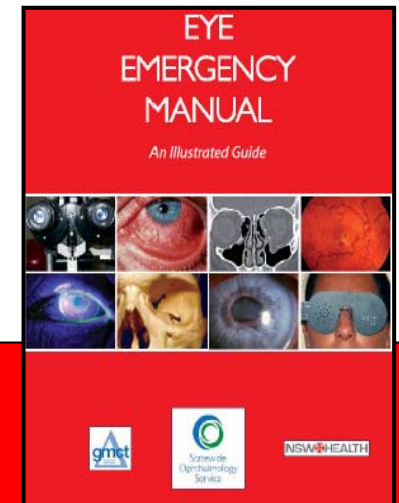


Education Session Two

Eye Examination



EYE EDUCATION FOR EMERGENCY CLINICIANS

These presentations have been prepared by:

- Jillian Grasso, *Clinical Nurse Consultant, Ophthalmology*
- Janet Long, *Clinical Nurse Consultant Community Liaison, Ophthalmology*
- Joanna McCulloch, *Transitional Nurse Practitioner, Ophthalmology*
- Cheryl Moore, *Nurse Educator, Ophthalmology*



Further information contact us at Sydney Hospital & Sydney Eye Hospital: 02 9382 7111



Modules originally designed for emergency nurses as a component of the Eye Emergency Manual Project.

December 2008

Aim and Objectives

Understand the fundamental principles and perform a systematic eye examination.

On completion of this session you will be able to:

- Recognise normal and abnormal anatomy
- Systematically examine an eye
- Correctly document examination findings

Equipment required to examine an eye

- Fine beamed torch (with optional blue filter for examination using Fluorescein)
- Cotton buds
- Local anaesthetic eye drops, eg Amethocaine 0.5%, Oxybuprocaine 0.4%
- Fluorescein strips or Minims
- Magnification – slit lamp, indirect ophthalmoscope, loupes or Woods lamp

Patient Assessment

- If injury is SELF EVIDENT
 - Eg, impaled object
 - OR totally closed, tightly swollen eyelid associated with trauma
 - Do not try to examine this eye
 - Patient requires an immediate referral to an Ophthalmologist

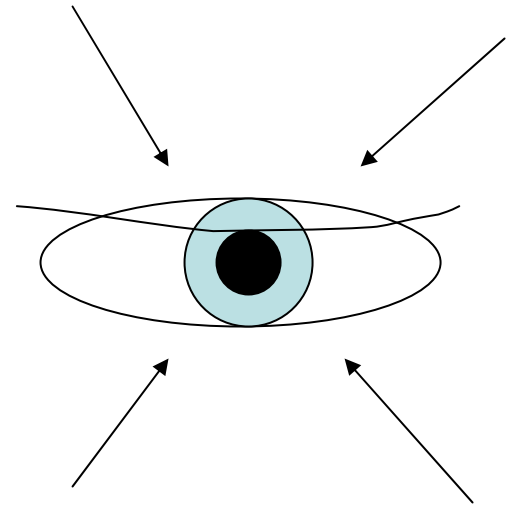
Patient Preparation

- Head well supported (eg. chair back against the wall prevents head moving back and away)
- If using a slitlamp make sure patient is correctly positioned.
- Appropriate lighting for patient comfort
 - e.g. dim lights if photophobic

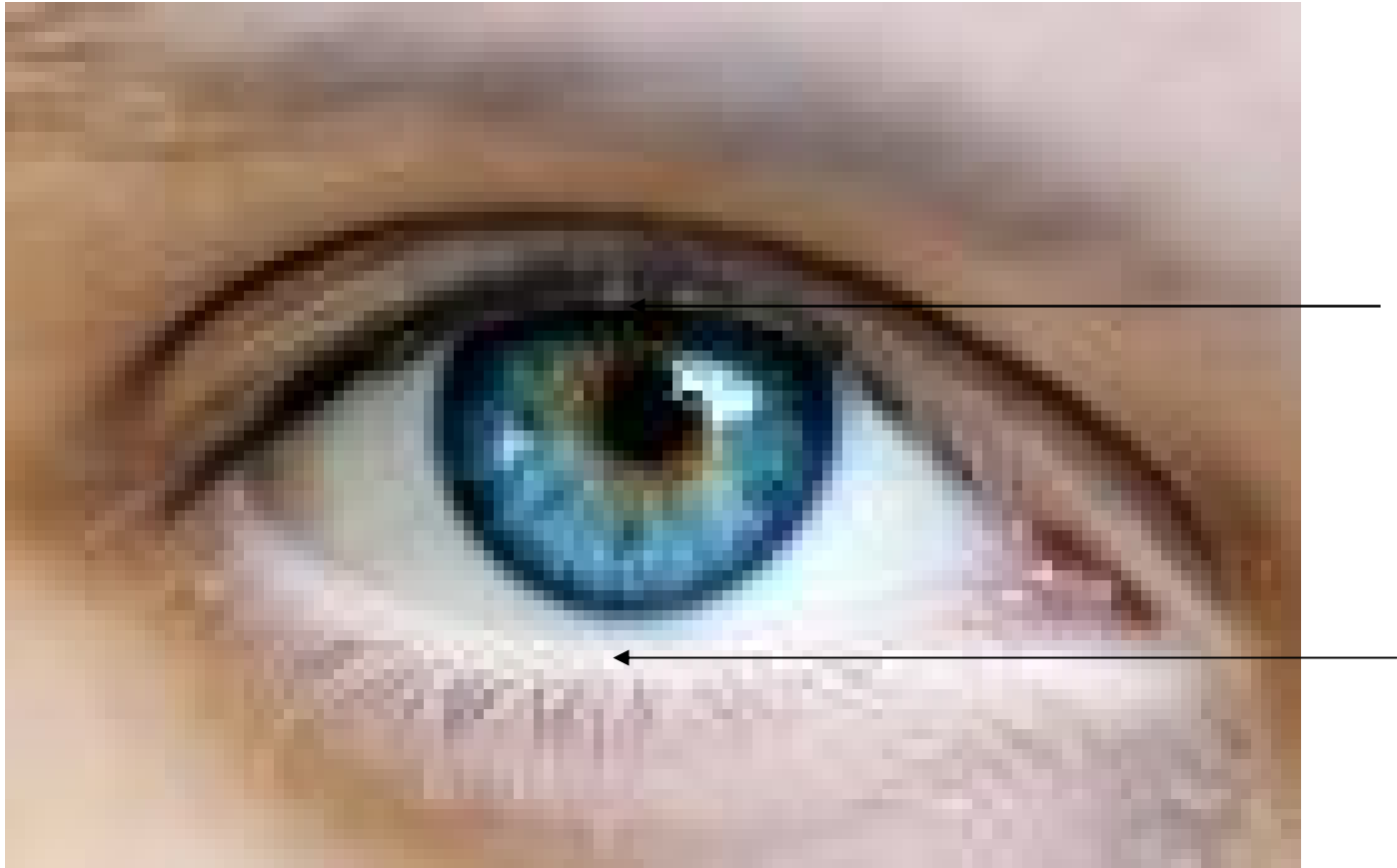
Examine from the outside – in

Using a systematic approach to examine the eye

1. Lids and lashes
2. Conjunctiva
3. Cornea
4. Anterior chamber
5. Iris and pupil
6. Lens and posterior chamber



Normal Lid and Lashes

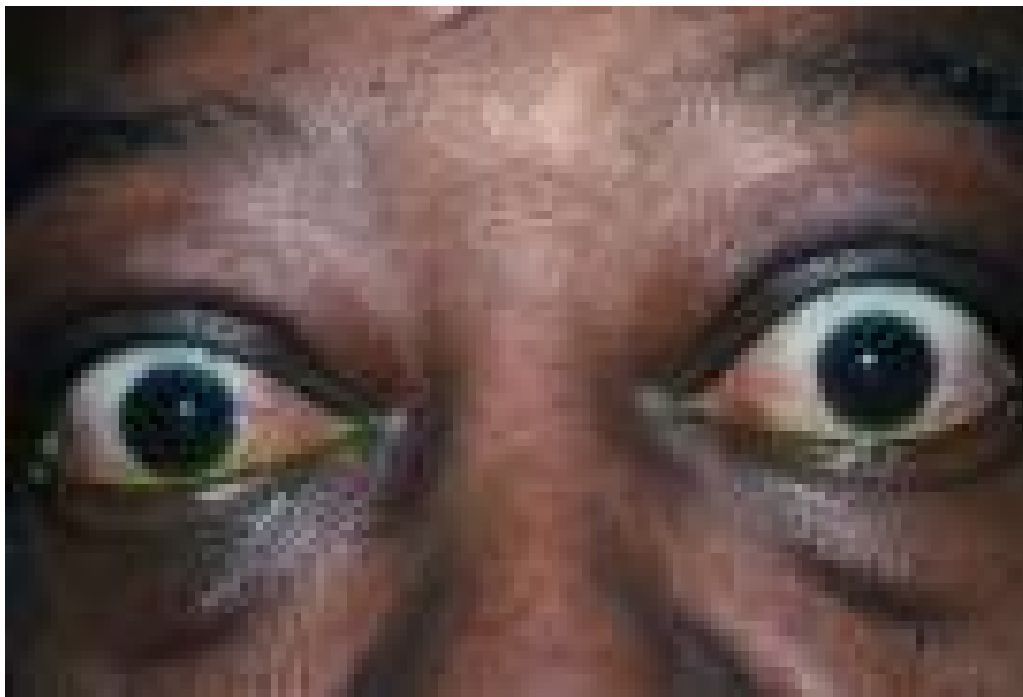


Normal position of lids: 2mm below top of iris;
2mm below bottom edge of iris

Lids and Lashes

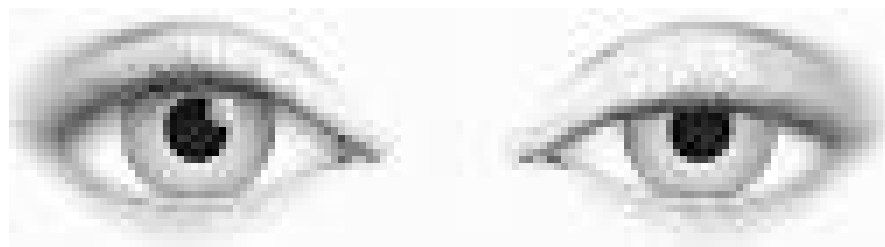
Abnormal

- Lesions
- Crusting
- Redness
- Swelling / bruising
- Lacerations



Abnormal lid position





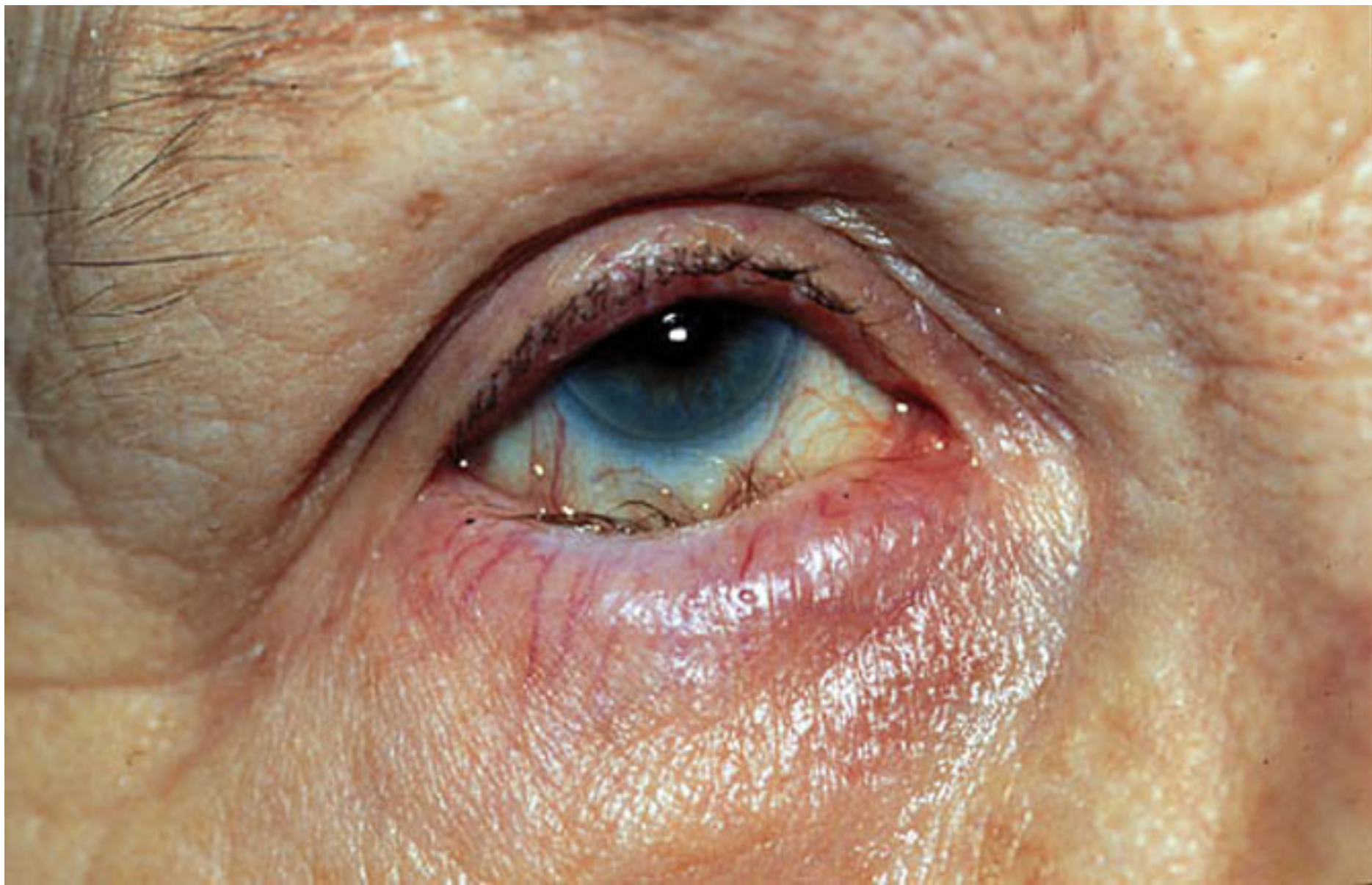
Left ptosis



Bilateral
lagophthalmos –
unable to close eyes
completely



Right ptosis



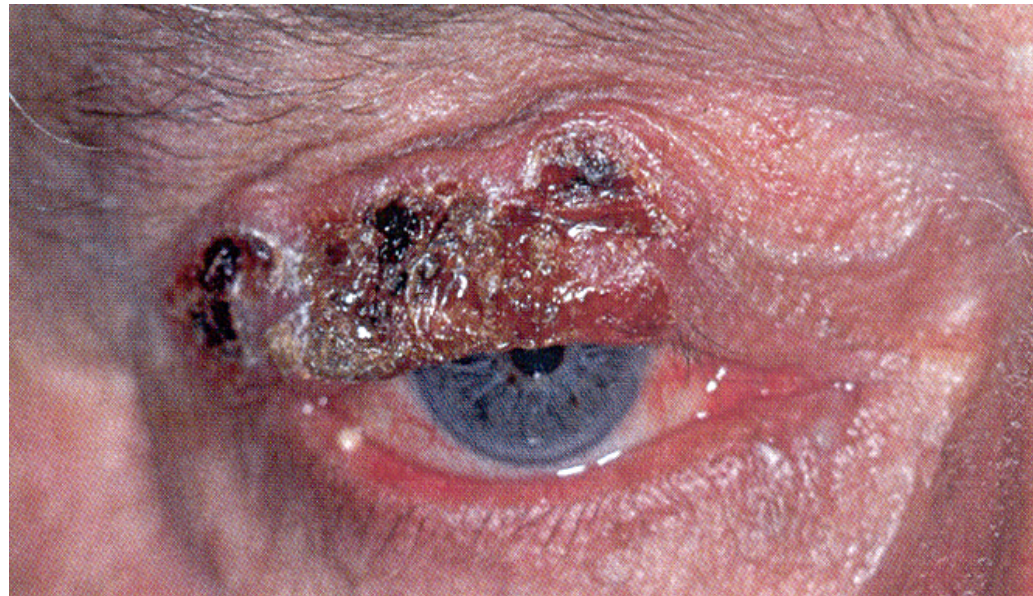
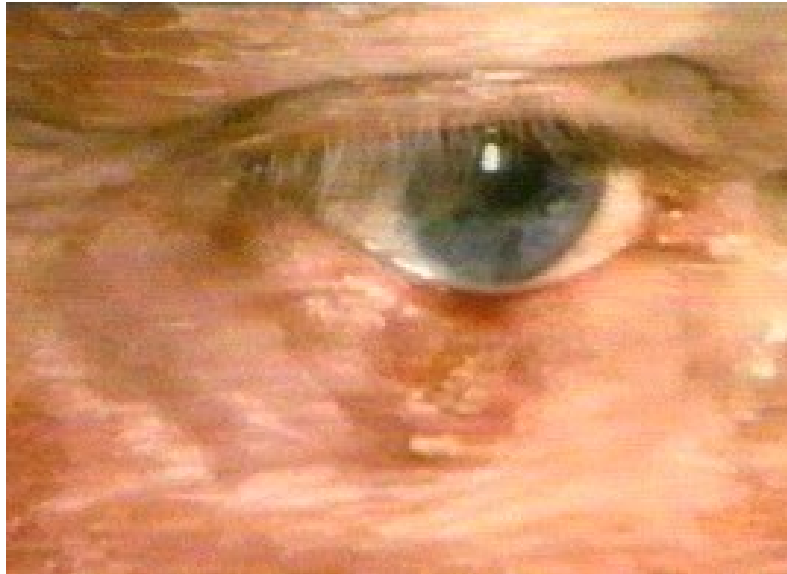
Entropion

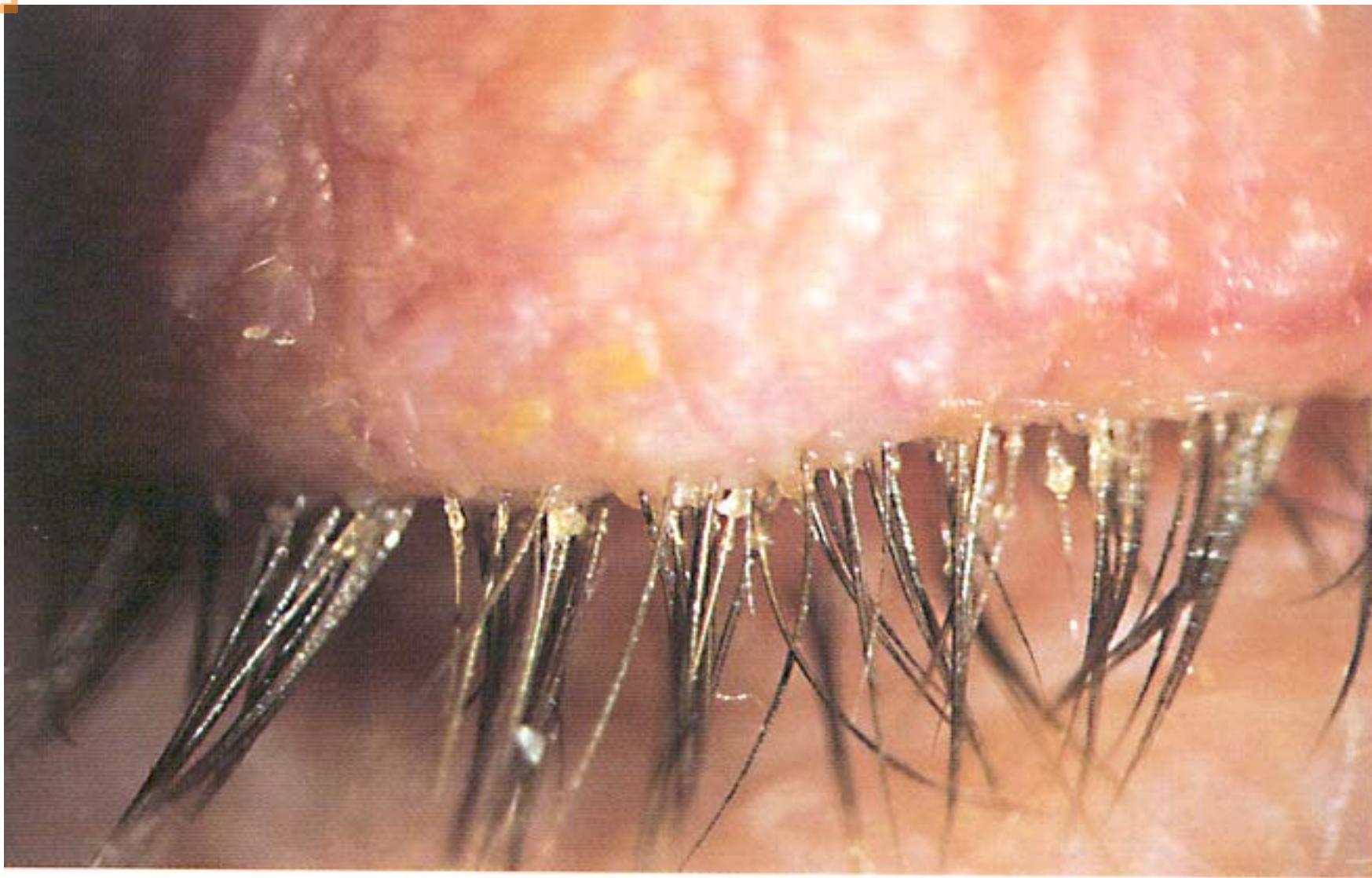


Ectropion



Eyelid lesions





Crusting on eyelids (blepharitis)



Gross swelling of lids – infective in this case



Exploration of an extensive lid laceration



Torn eyelid with avulsed lower lacrimal canaliculus

Lid lacerations

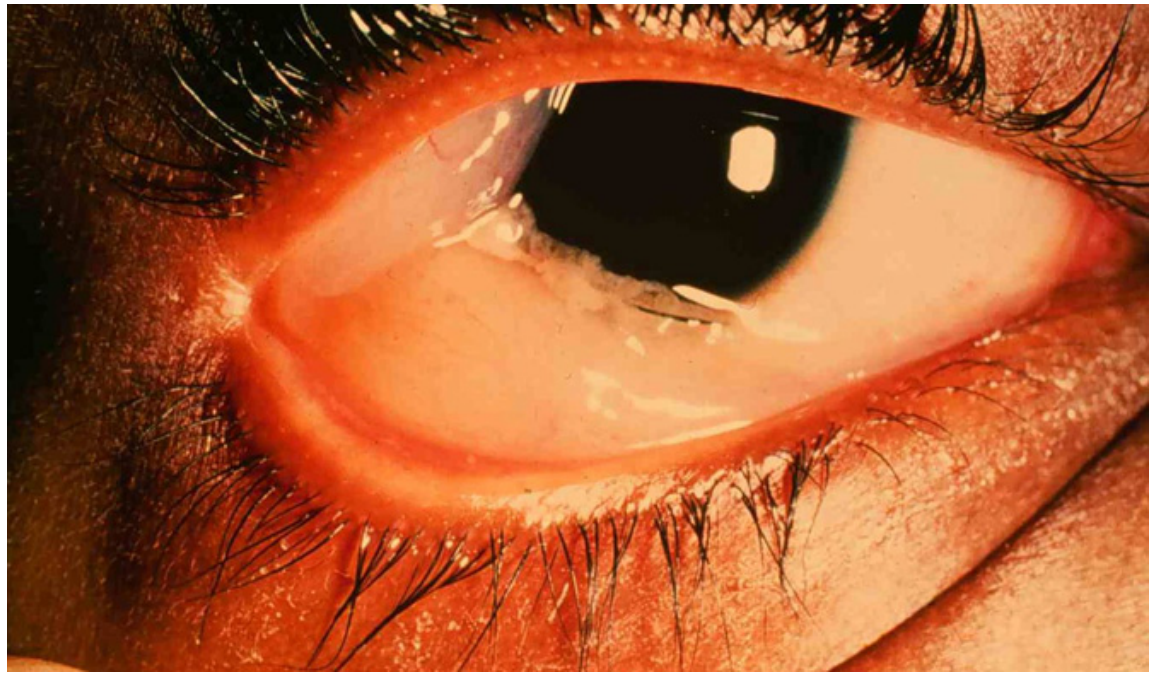
Conjunctiva

Covers the inside of eyelids and the sclera – does not pass over the cornea; is vascular.

- Normal
 - translucent, flat, sclera visible beneath
- Abnormal
 - Injected - bloodshot
 - Chemosis (oedema)
 - Discharge
 - Subconjunctival haemorrhage
 - Lacerations
 - Lesions

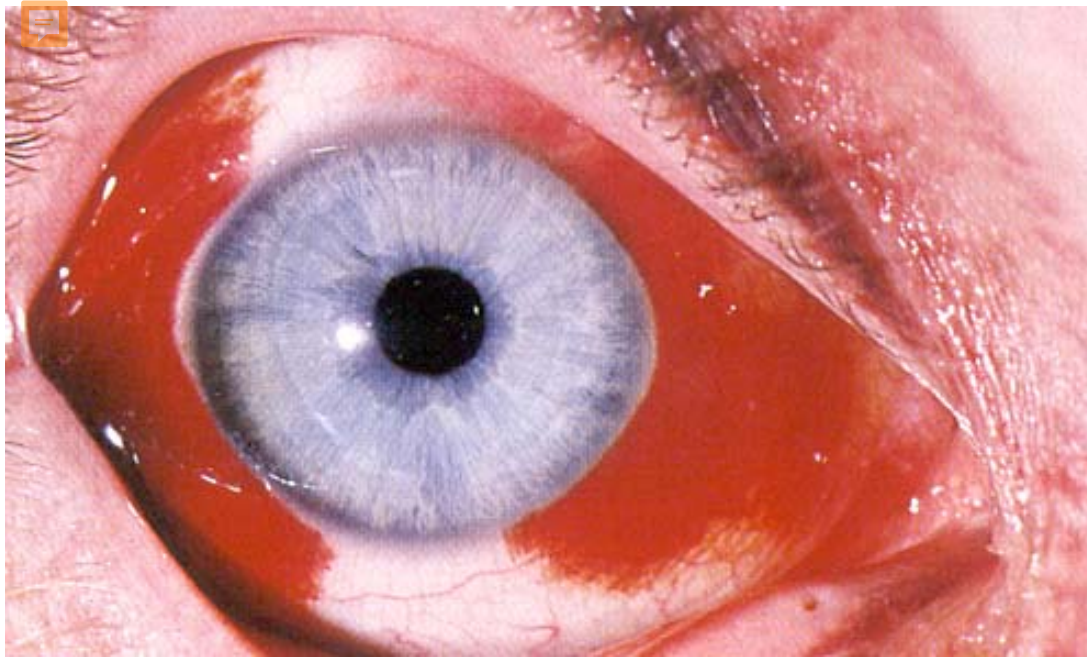


Chemosis (oedema)

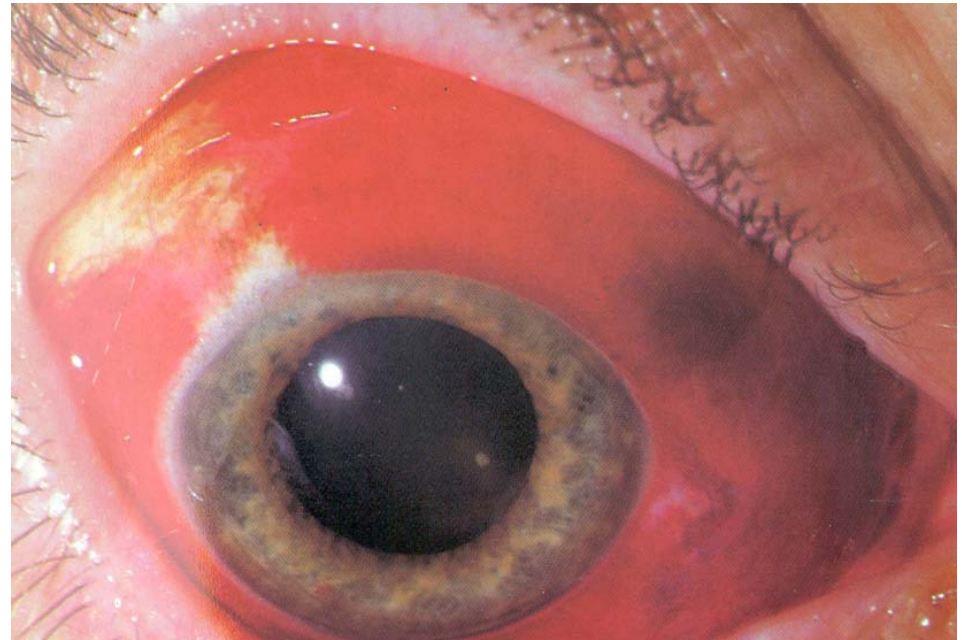




Purulent Discharge (probably bacterial infection)



Subconjunctival
haemorrhage





Pterygium – wing of
overgrown conjunctiva



Cornea

Avascular circular 'window' of the eye

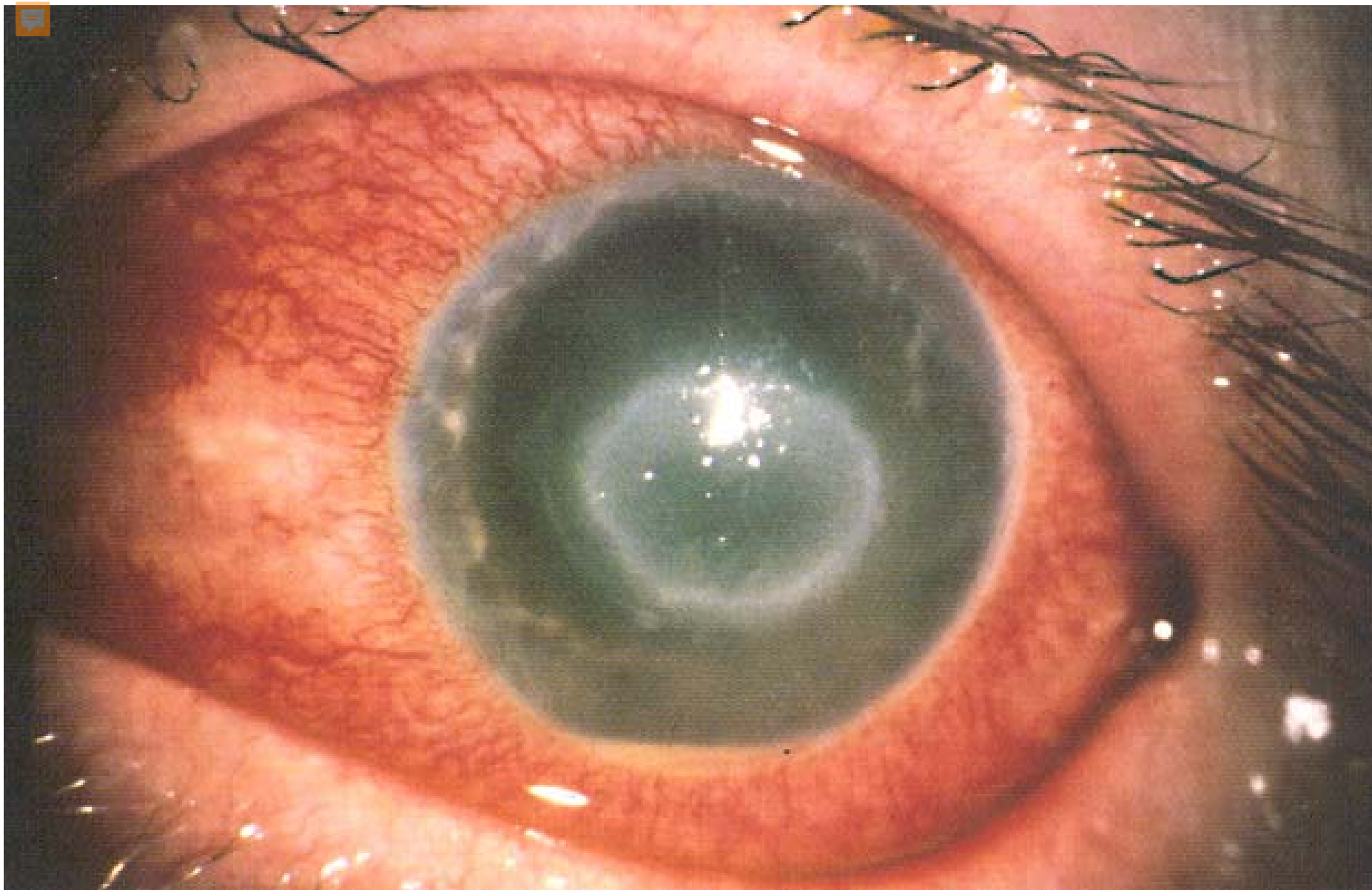
- Normal
 - clear, bright, smooth surface
- Abnormal
 - Cloudy – iris may be difficult to see
 - Scarring - milky line, localised opacity
 - Foreign body
 - Rust ring
 - Abscess
 - Laceration



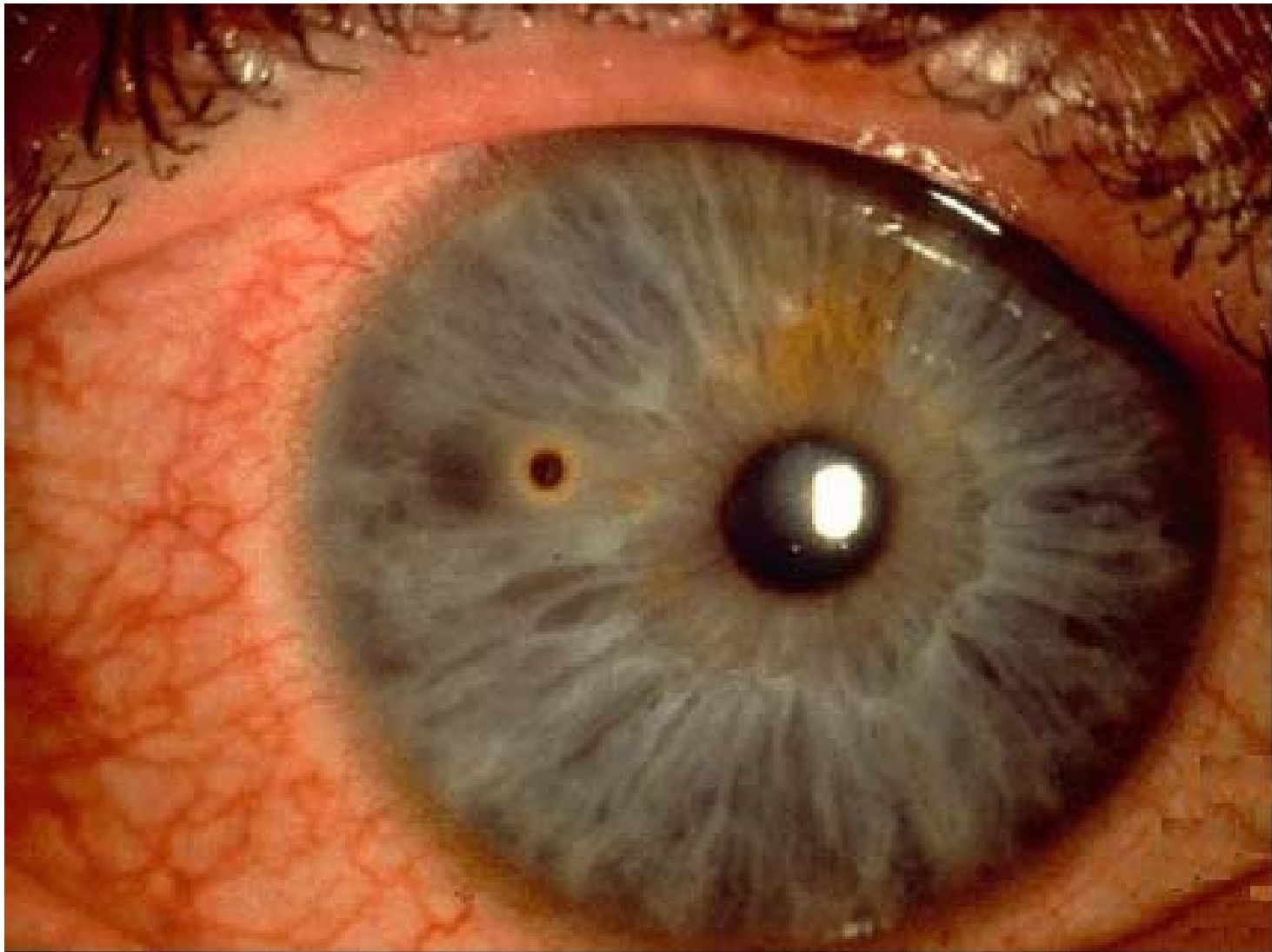
Normal cornea: Clear, bright, smooth surface



Cloudy cornea: difficult to view iris



Cloudy cornea with central scarring



Corneal foreign body



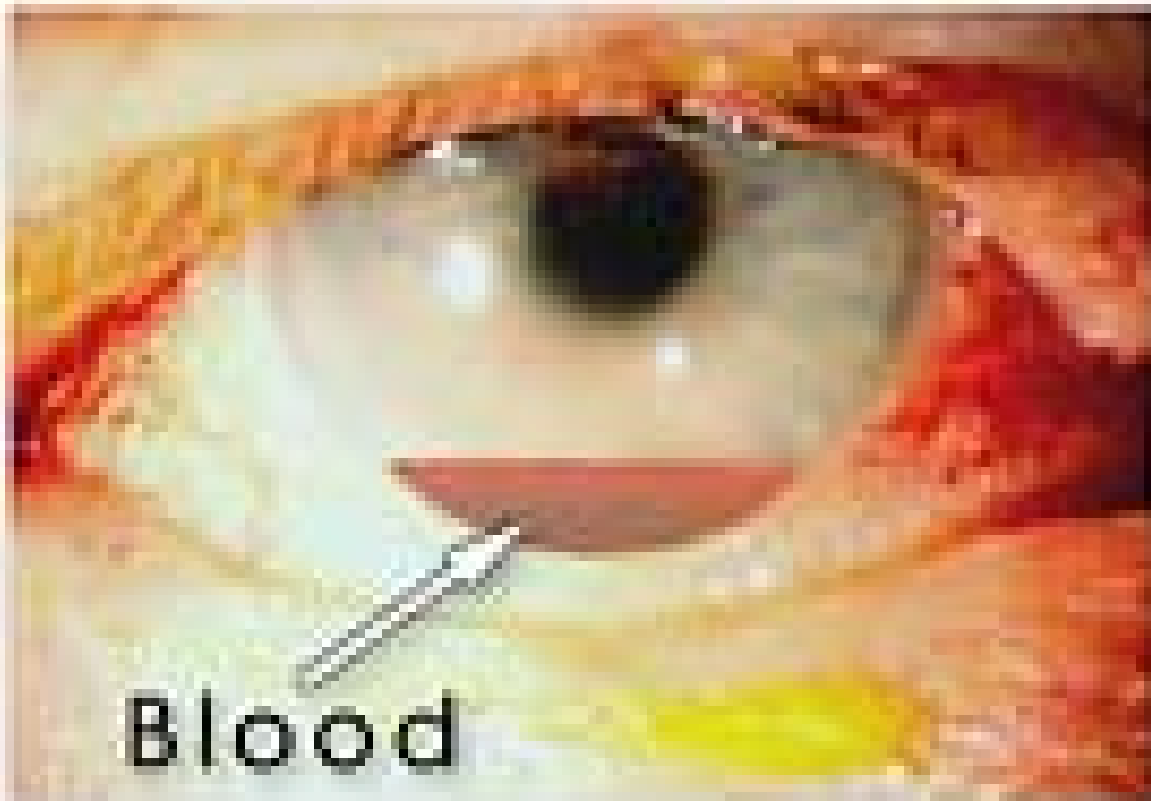
Dendritic (“shaped like a tree”) ulcer – Herpes Simplex Virus

Viewed with a blue light under fluoroscein stain.

Anterior Chamber

Space between posterior cornea and iris
filled with aqueous fluid

- Normal- clear, bright & deep
- Abnormal-
 - flat, shallow
 - hyphaema
 - hypopyon
 - Anterior chamber Intraocular Lens (IOL)



Hyphaema

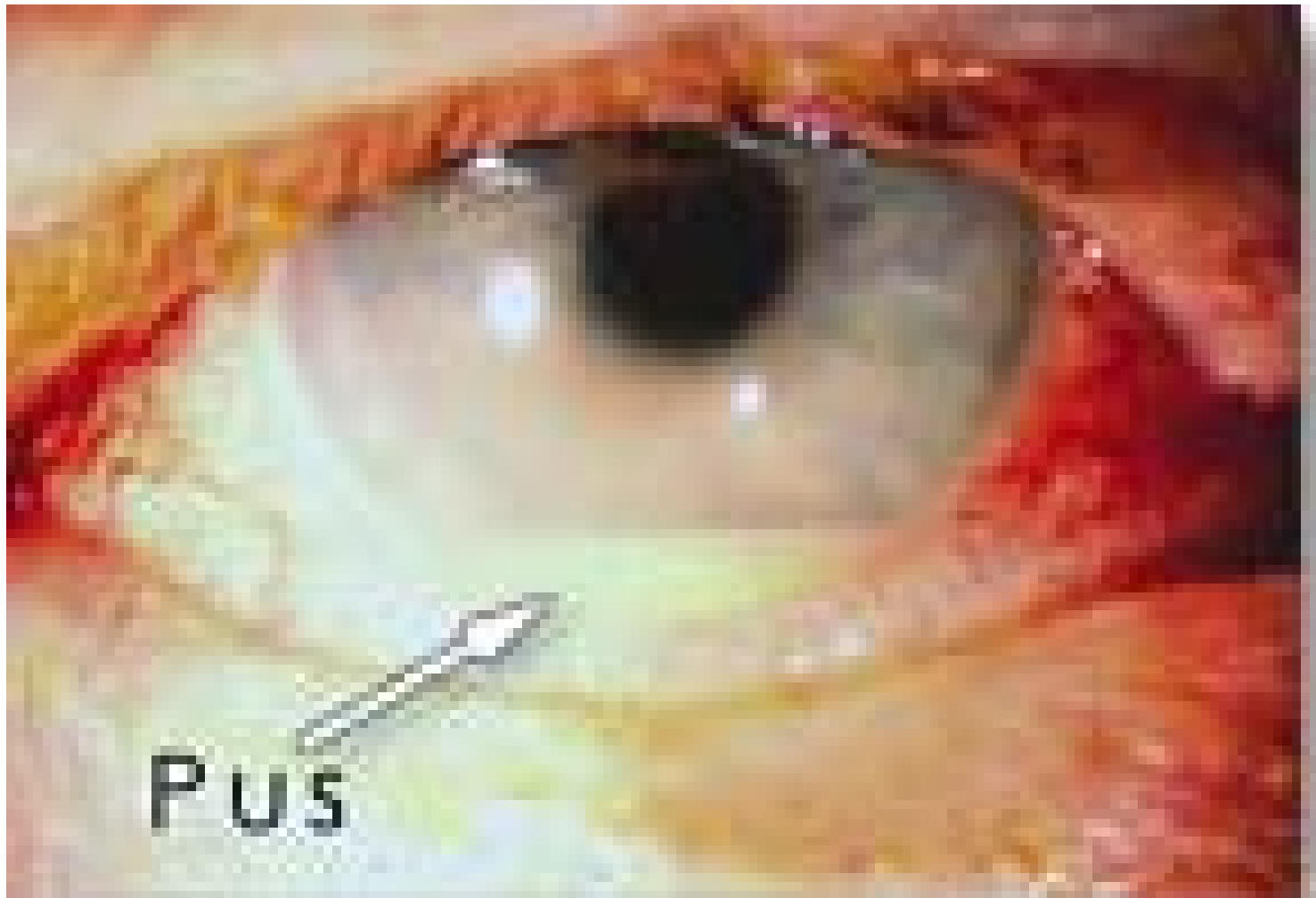


Side view showing
hyphaema

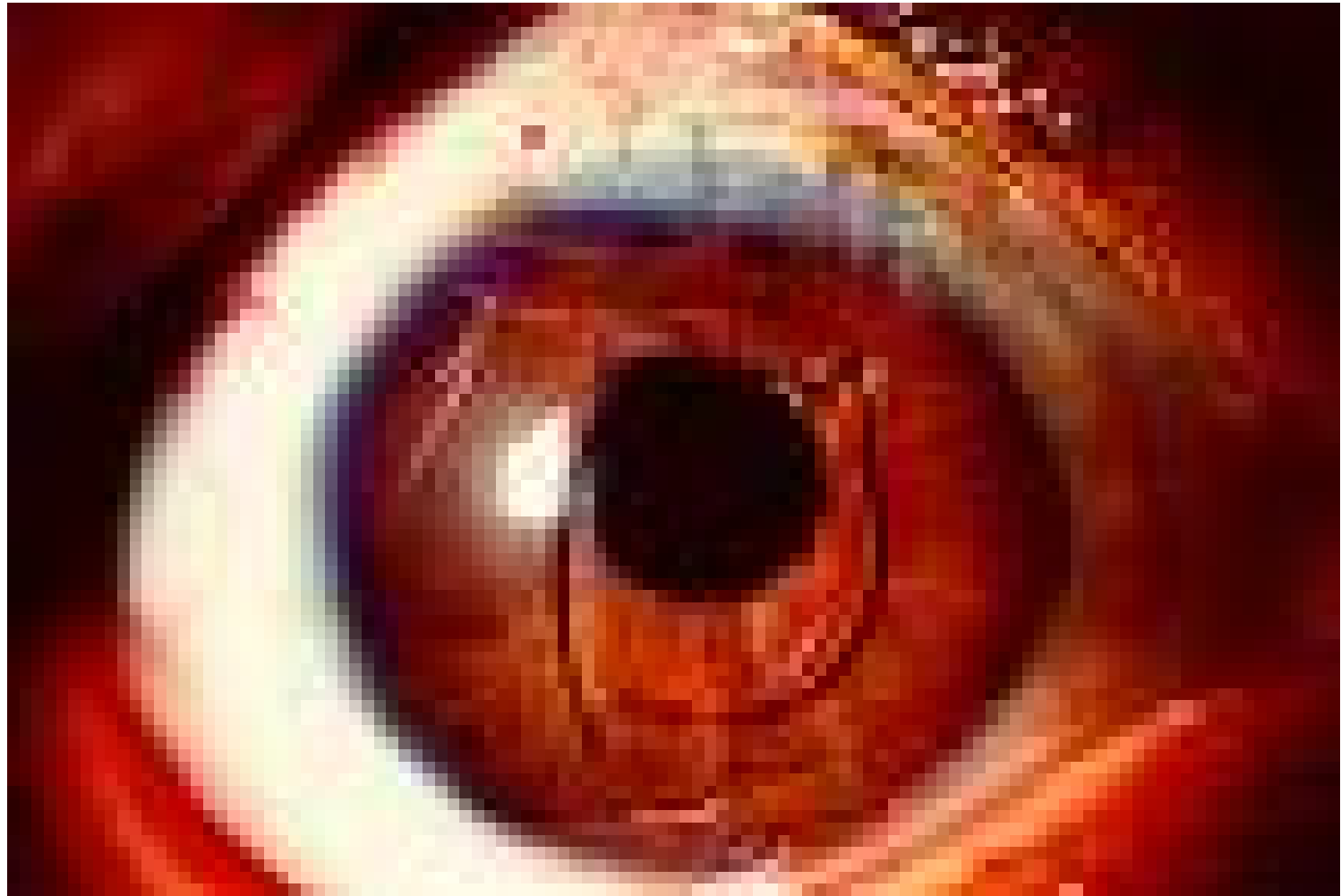


Total hyphaema (sometimes called '8 ball' or 'black ball').

EYE EDUCATION FOR EMERGENCY CLINICIANS



Hypopyon



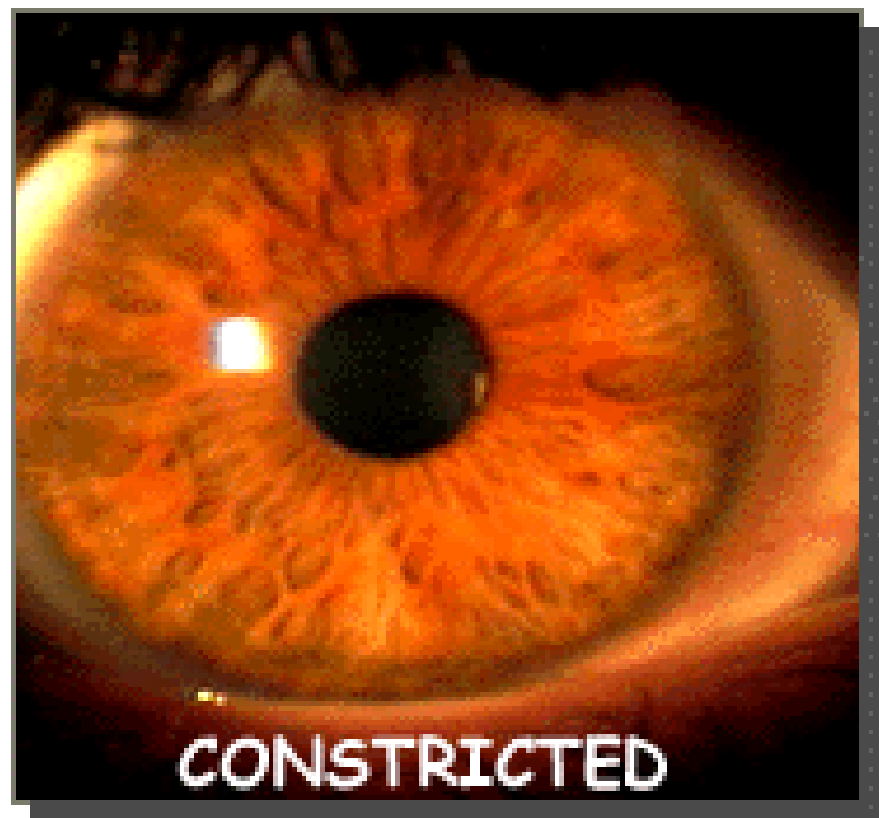
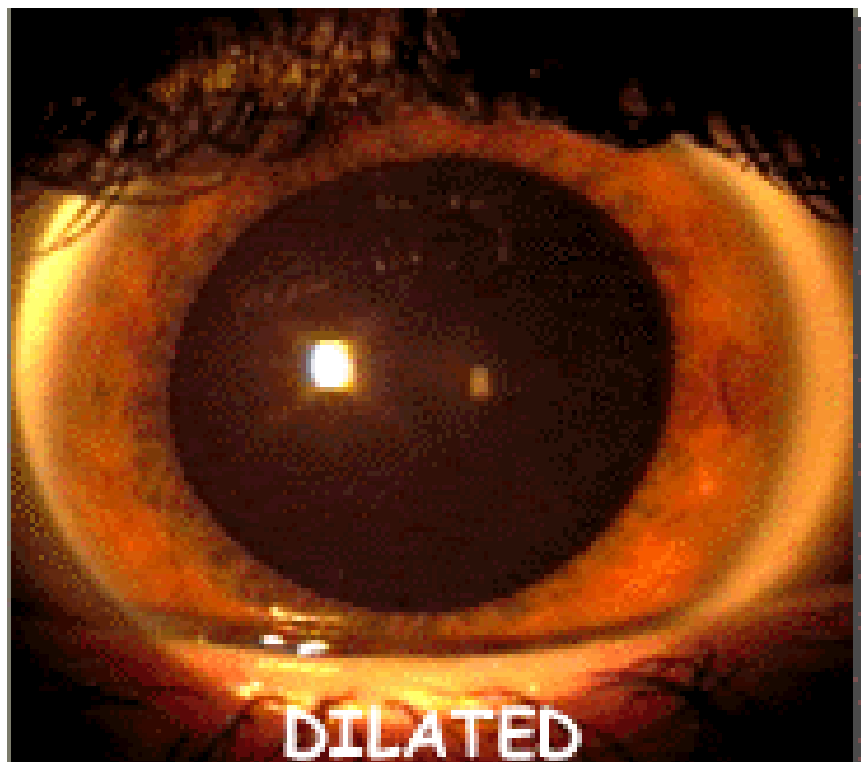
Anterior chamber Intraocular lens

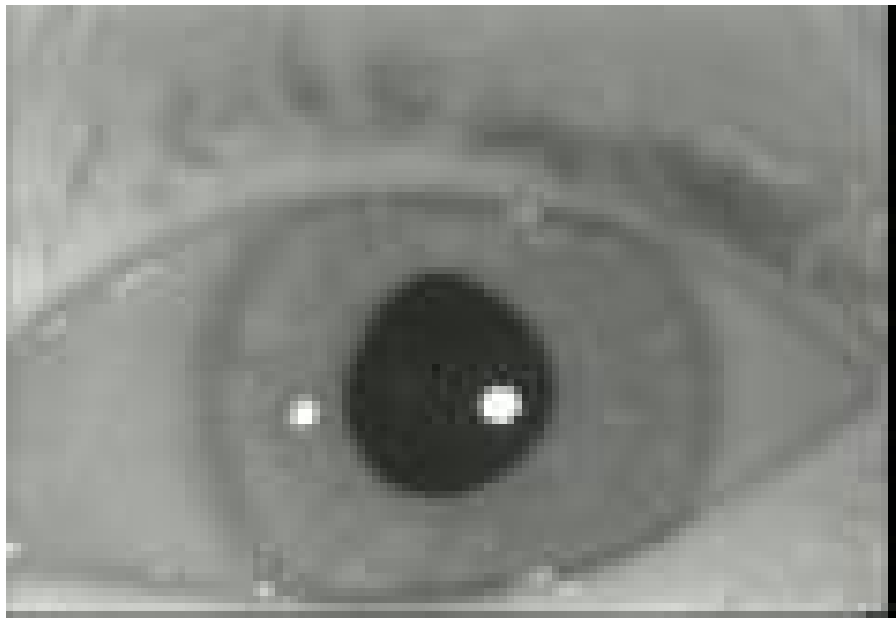
Pupil

- Normal
 - may be variable sizes but should be equal
 - react to light
 - central
 - round
- Abnormal
 - unequal
 - dilated or constricted
 - not reacting to light
 - irregular (eg tear drop)
 - not central

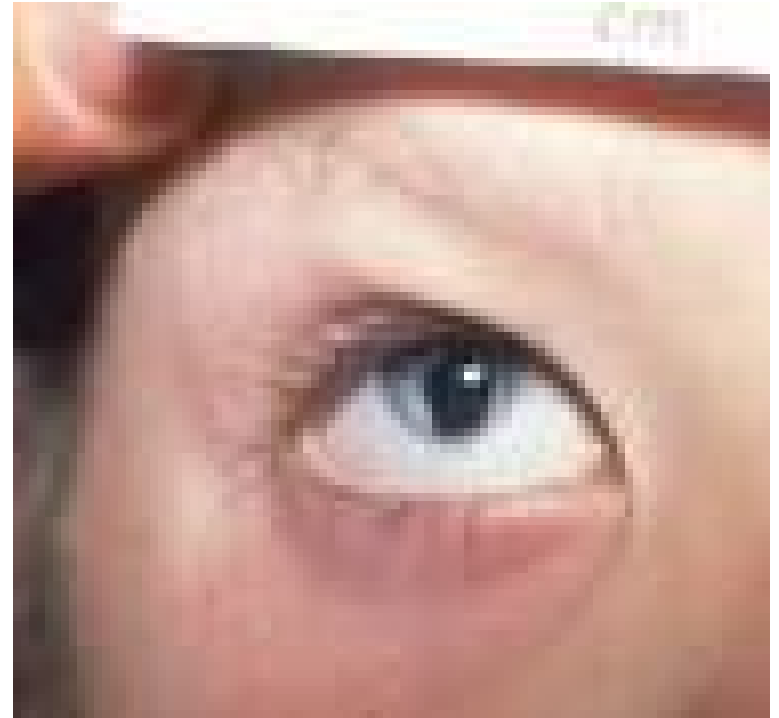
Iris

- Normal
 - similar appearance between eyes
 - Be aware of coloured contact lenses
- Abnormal
 - lesions
 - tears, lacerations
 - prolapse





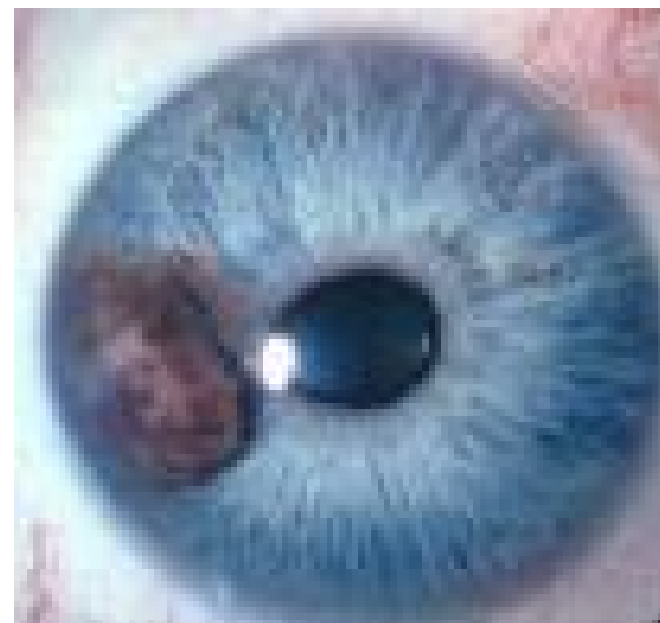
Irregular shaped pupils

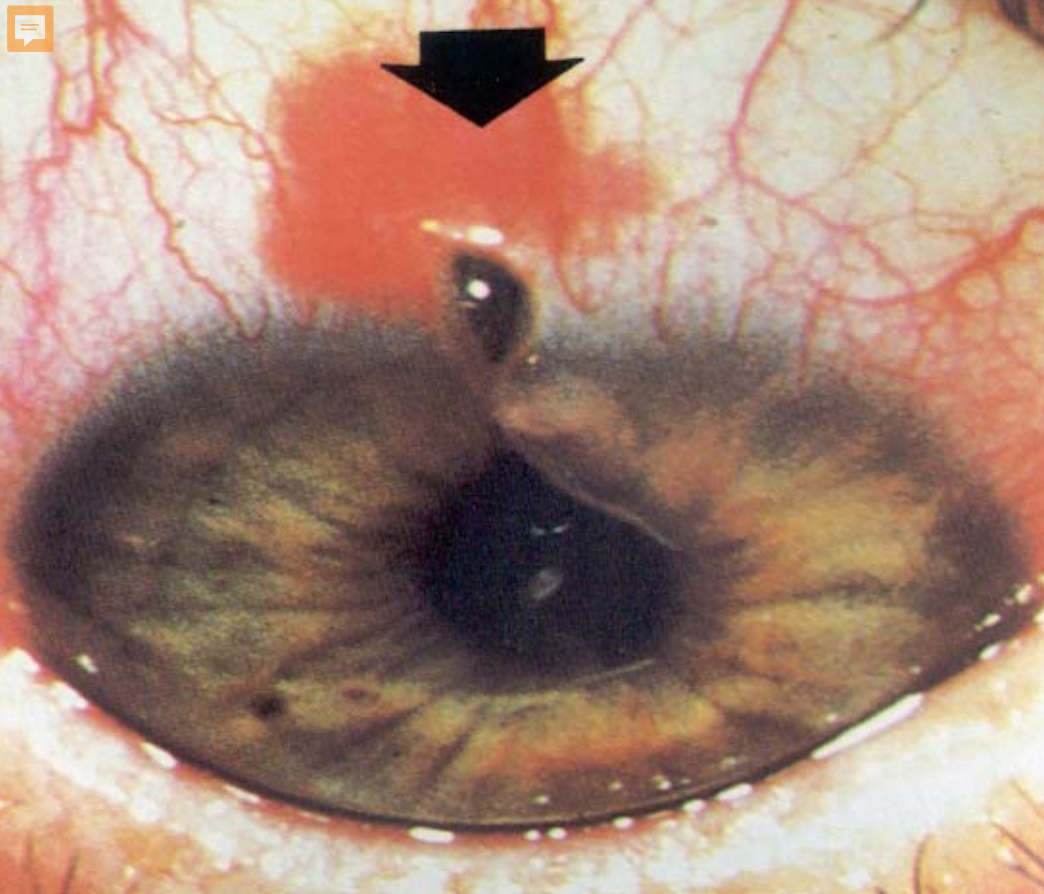


Iris coloboma: keyhole shaped (congenital abnormality)



Iris lesions





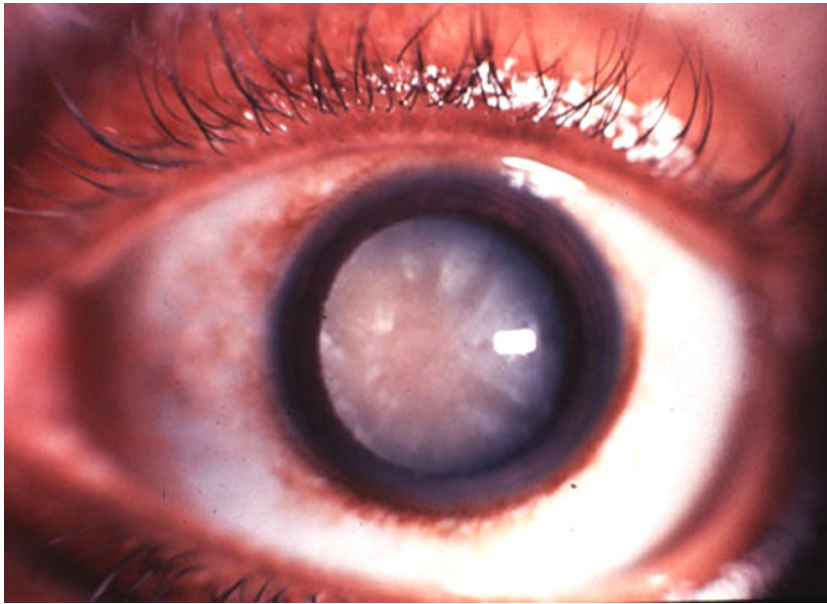
Iris prolapse with teardrop pupil caused by penetrating eye injury.
Refer immediately, do not touch.

DO NOT MISTAKE FOR FOREIGN BODY OR TRY TO REMOVE.

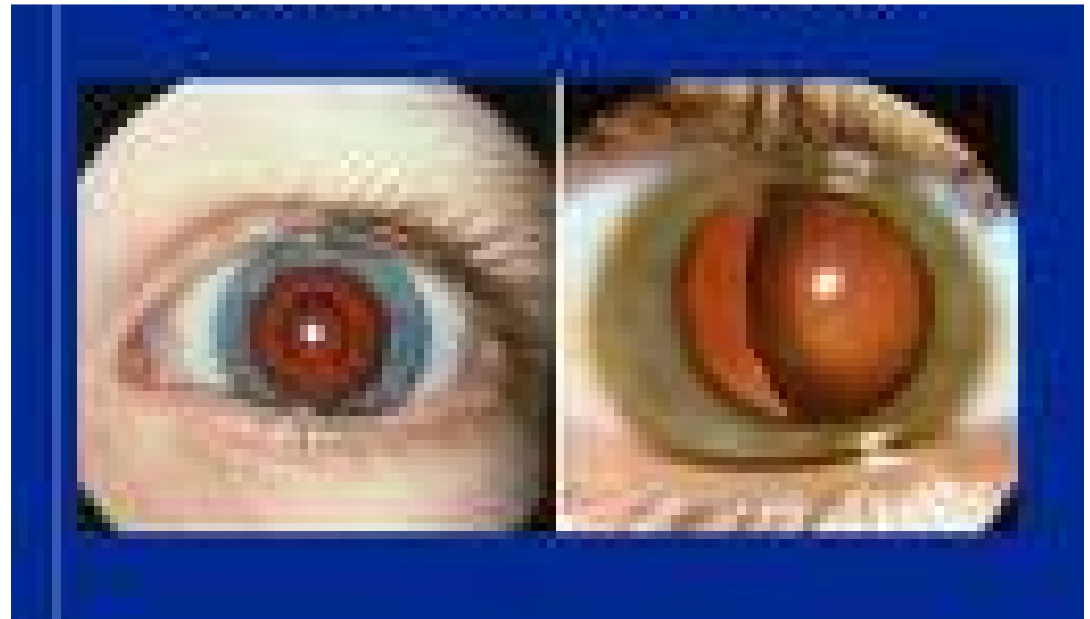
Lens

Lies behind iris – seen through the pupil

- Normal
 - Bright, even red reflex (like the red eye seen in photos)
- Abnormal
 - Dull or absent red reflex
 - White pupil
 - Shadows in red reflex



Dense, white cataract

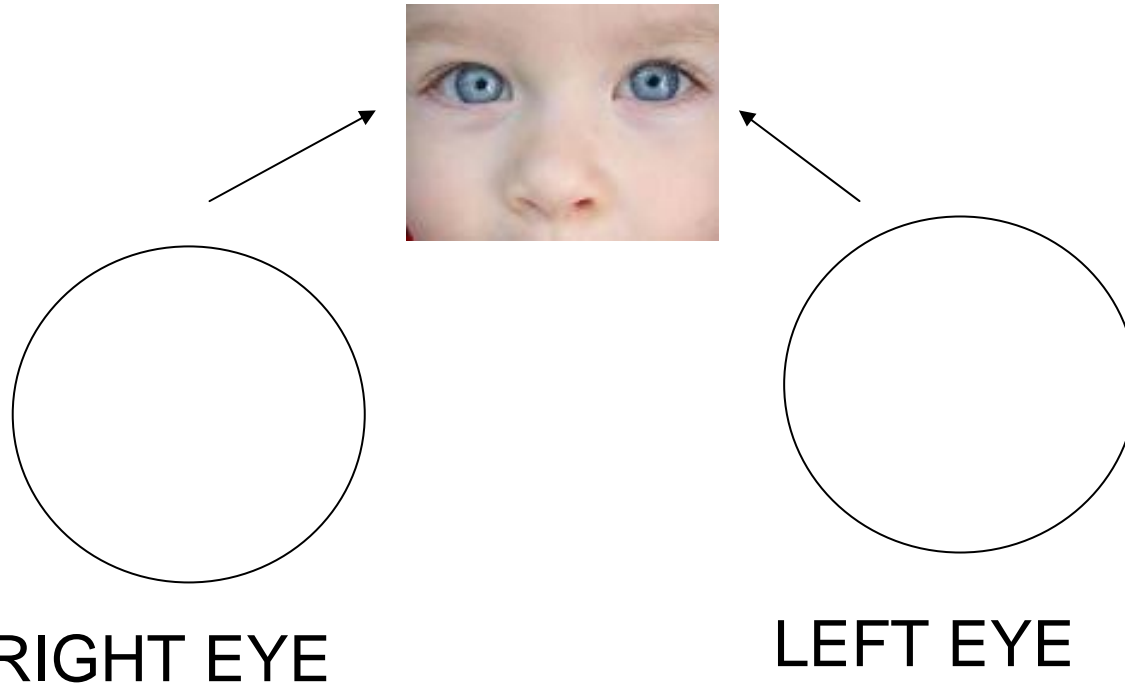


Left: shadow of early cataract

Right: dislocated lens

Documentation

The next 3 slides will give you an overview of how to document ophthalmic observations



Drawings are usually set out like this: as if the patient is in front of you. The circle represents the cornea and you can add lids, pupil etc.

superior

temporal



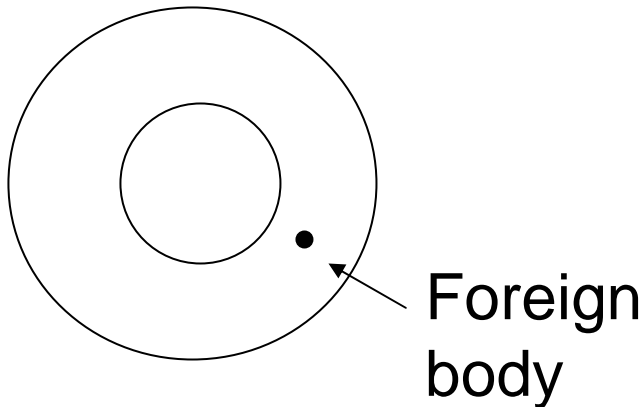
nasal or
medial

inferior

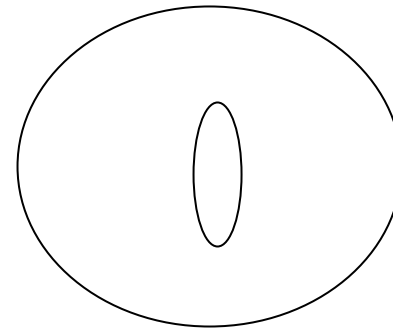
Terminology



Draw what you see



Right foreign body
at 4 o'clock



Left irregular pupil

On completion of this session you will now be able to:

- Recognise normal and abnormal eye anatomy
- Perform a systematic eye examination
- Correctly document examination findings