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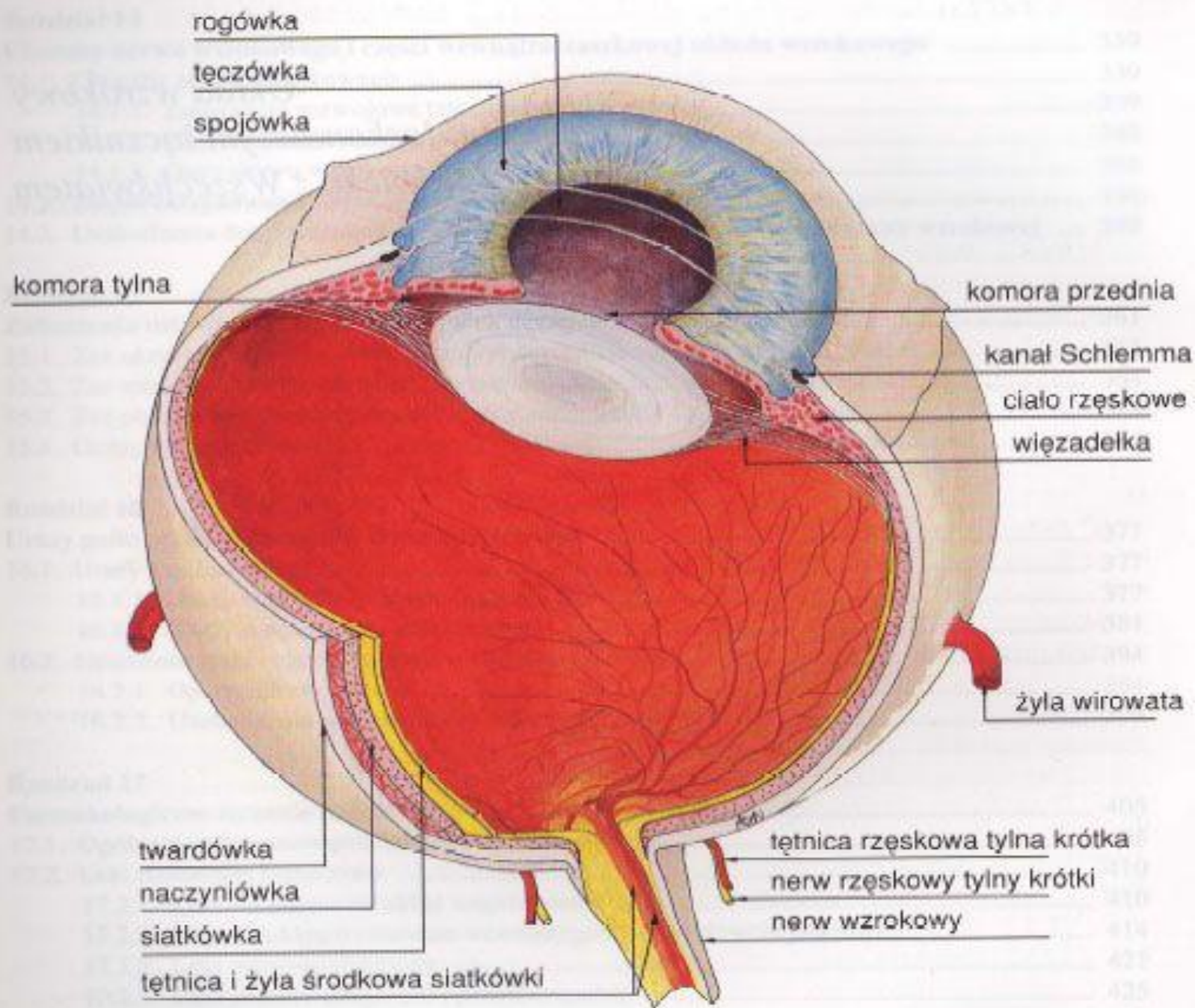
Basic eye examination & Eye emergencies



**Polskie Towarzystwo
Medycyny Ratunkowej**

**Polish Society for
Emergency Medicine**

Chair of Emergency Medicine
Wroclaw Medical University



Basic examination - visual acuity (VA)

- should be performed on both eyes, check each eye separately
- if patient wears glasses test vision with glasses (or pinhole)
- ask if patient wears contact lenses

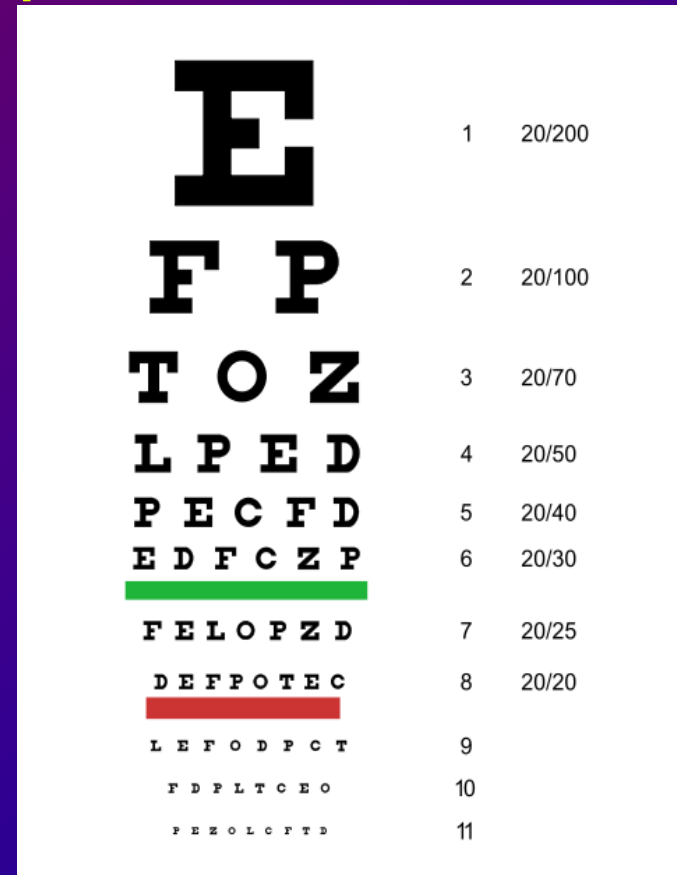
VA examination score

Snellen chart is read at 20 feet (6m)

- ex.

20/20 standing 20 f. from chart patient can read what the normal eye can read from 20f.

20/200 standing 20 f. from chart patient can read what the normal eye can read from 200f.



VA examination score

Snellen chart is read at 5 -6m

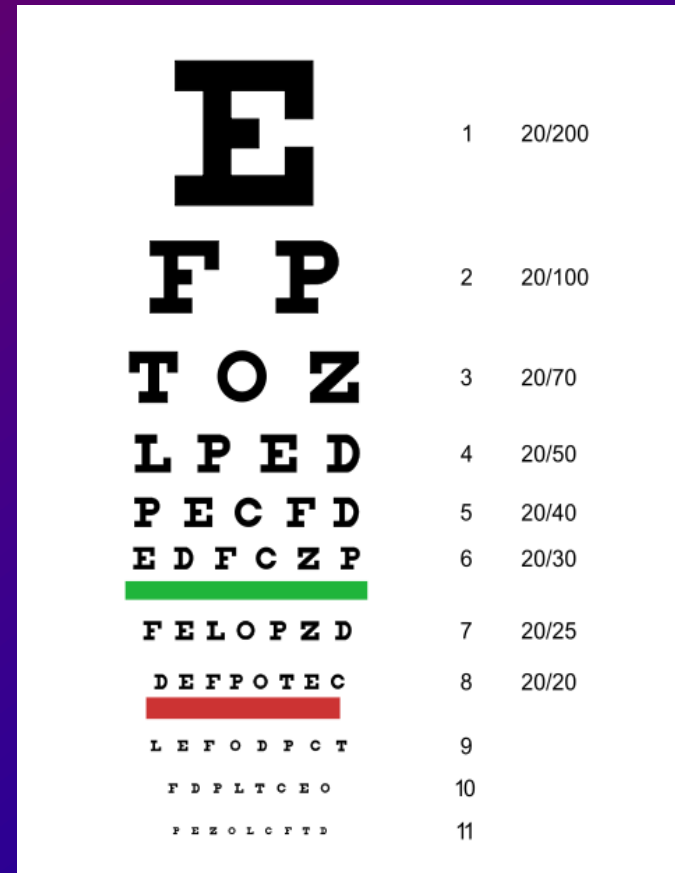
- ex.

V oc.dex. 1,0 sc

V oc. sin 0,4 ccs

V OD 0,8 cc -2 D sph

V OS 0,1 sc



VA examination score

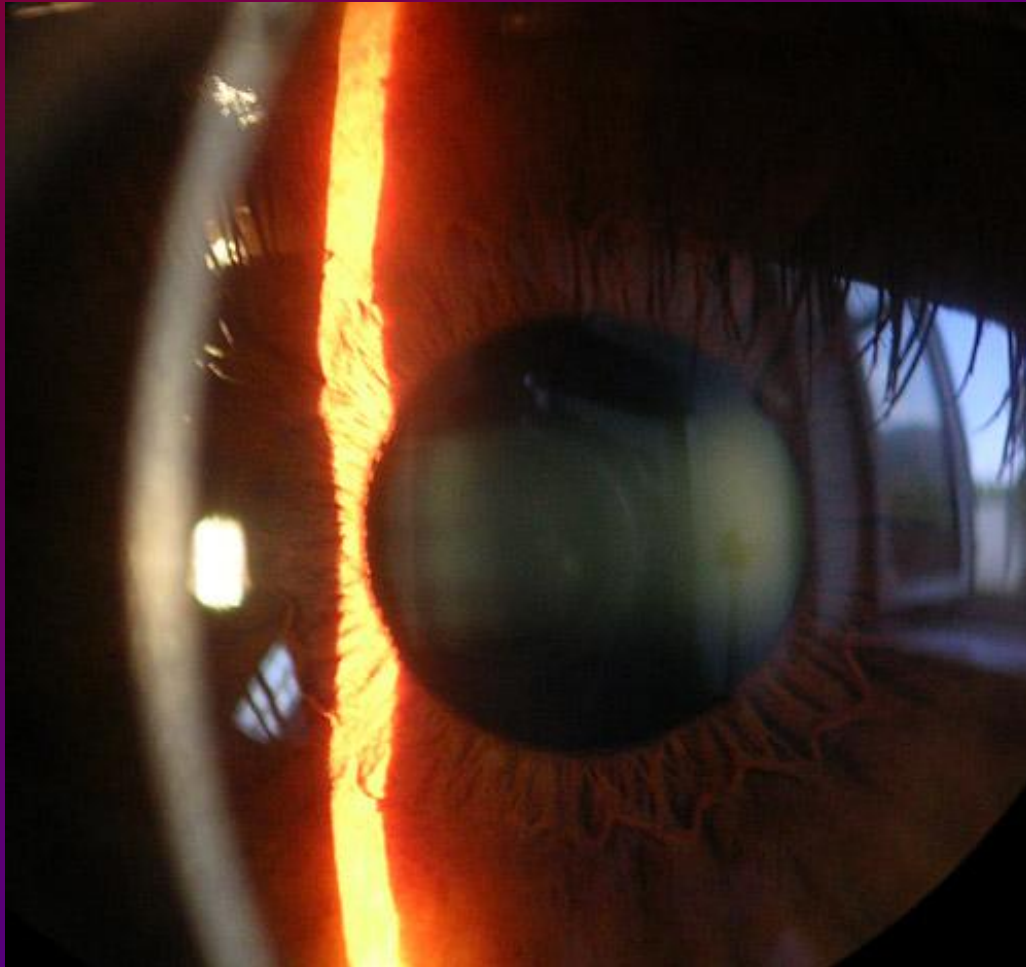
CF / 4 feet - the patient can count fingers at max distance 4 feet

HM / 3 feet - the patient can see hand motion at max distance 3 feet

LP / position -the patient can perceive light and determine from which direction it came

NLP – no light perception

Anterior segment (slit lamp)



Corneal abrasion

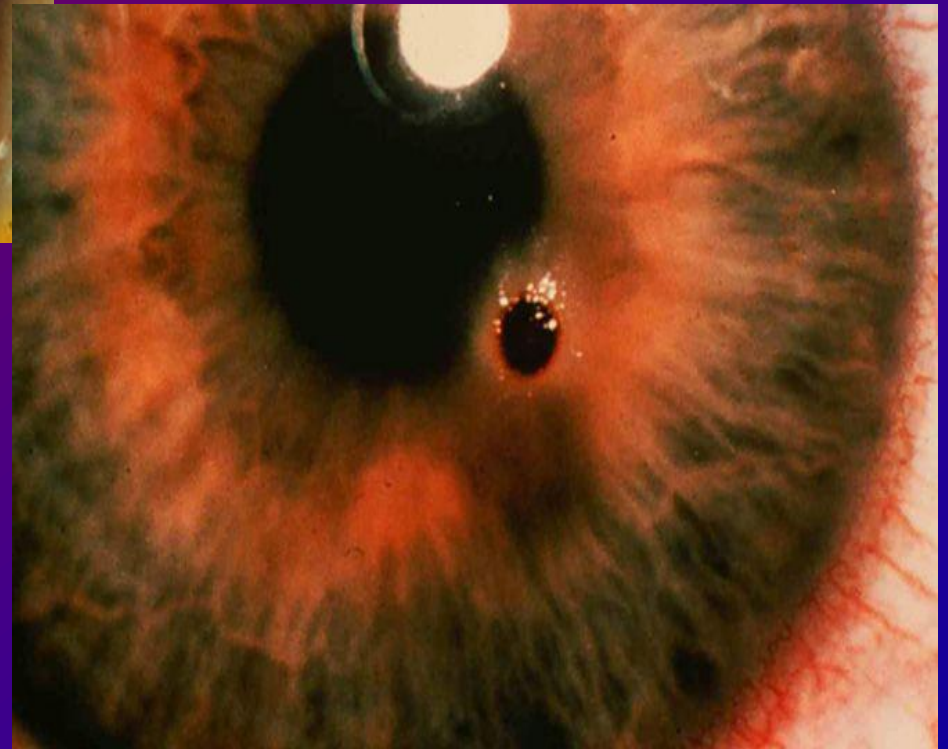
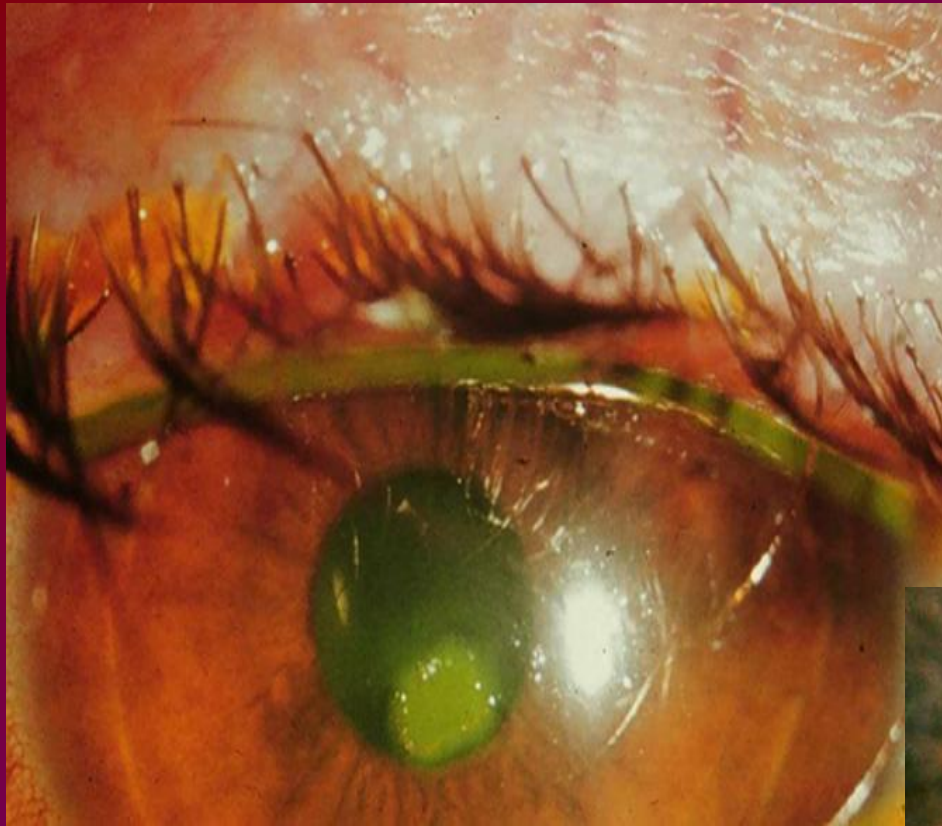
- occurs when the epithelium is denuded by a foreign object
- obtain a history from the patient as to what caused the injury

Symptoms:

- tearing, eyelid spasm, pain , photophobia

Stain the surface with the fluorescein and observe the cornea in cobalt light (slit lamp)

Local antibiotics and patch for 24h

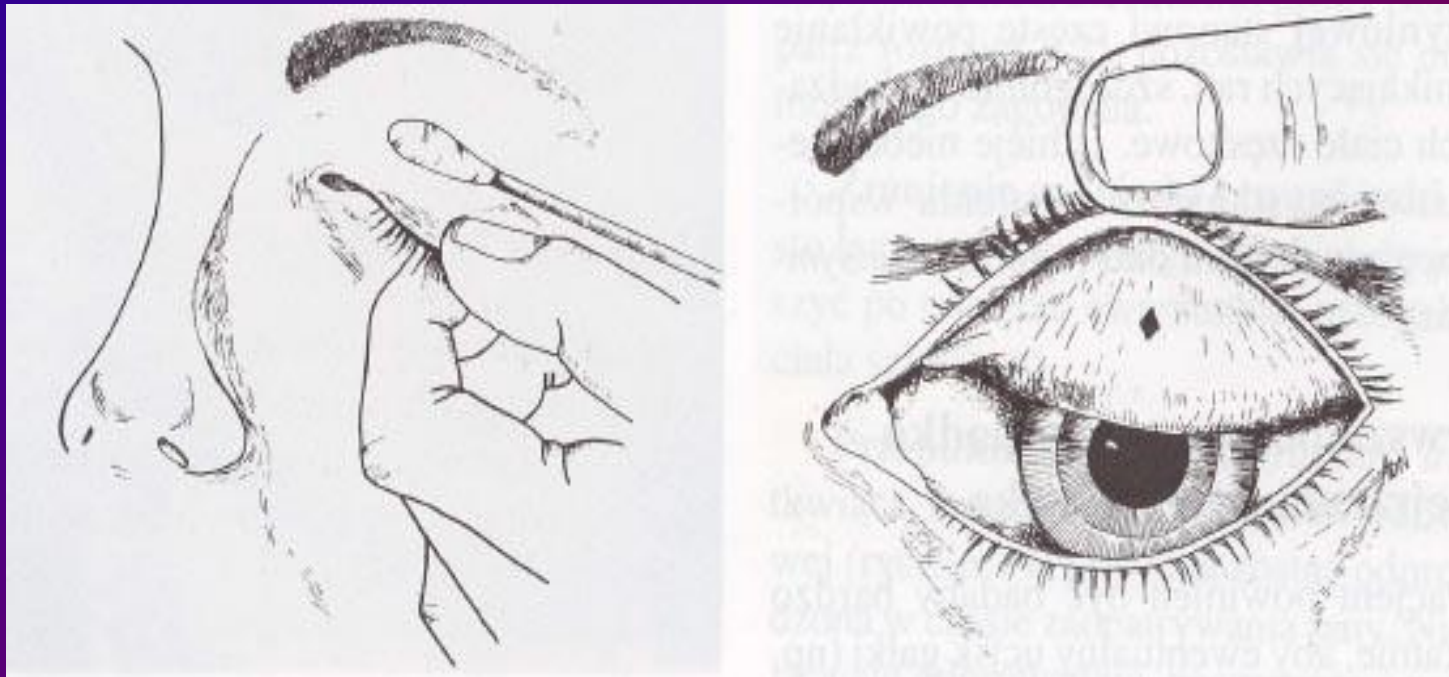


Foreign body in cornea

- painful
- give topical anesthesia
- gently remove the foreign body (slit lamp)
- check for more than one foreign body
- antibiotic ointment and eye patch
- administer local antibiotics (4 times/day)

Metal f. body – rust ring must be removed.

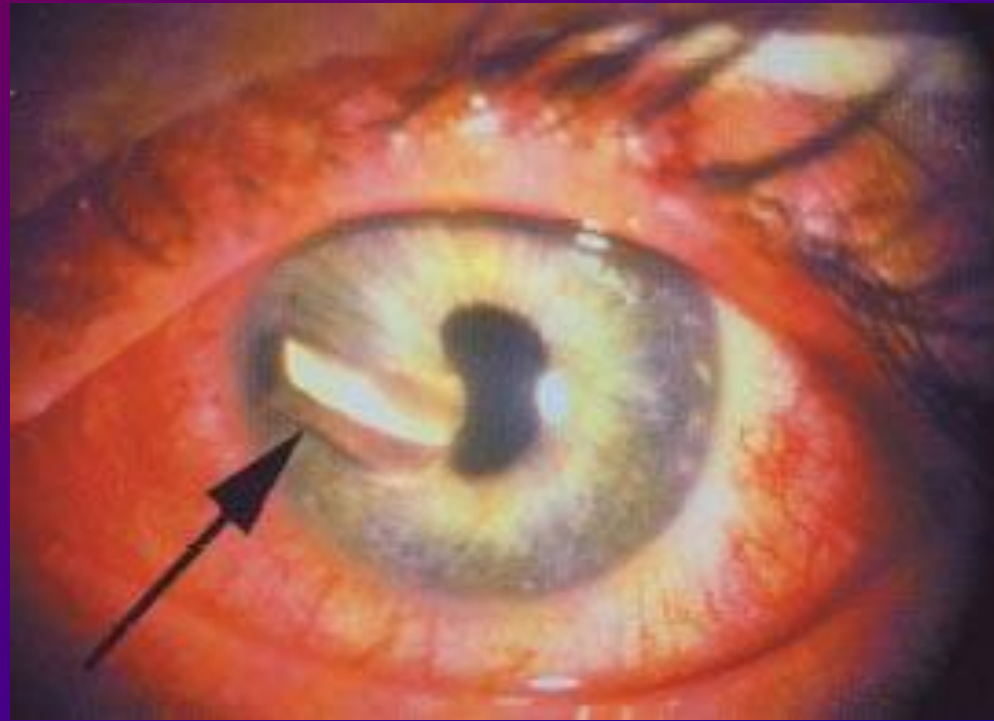
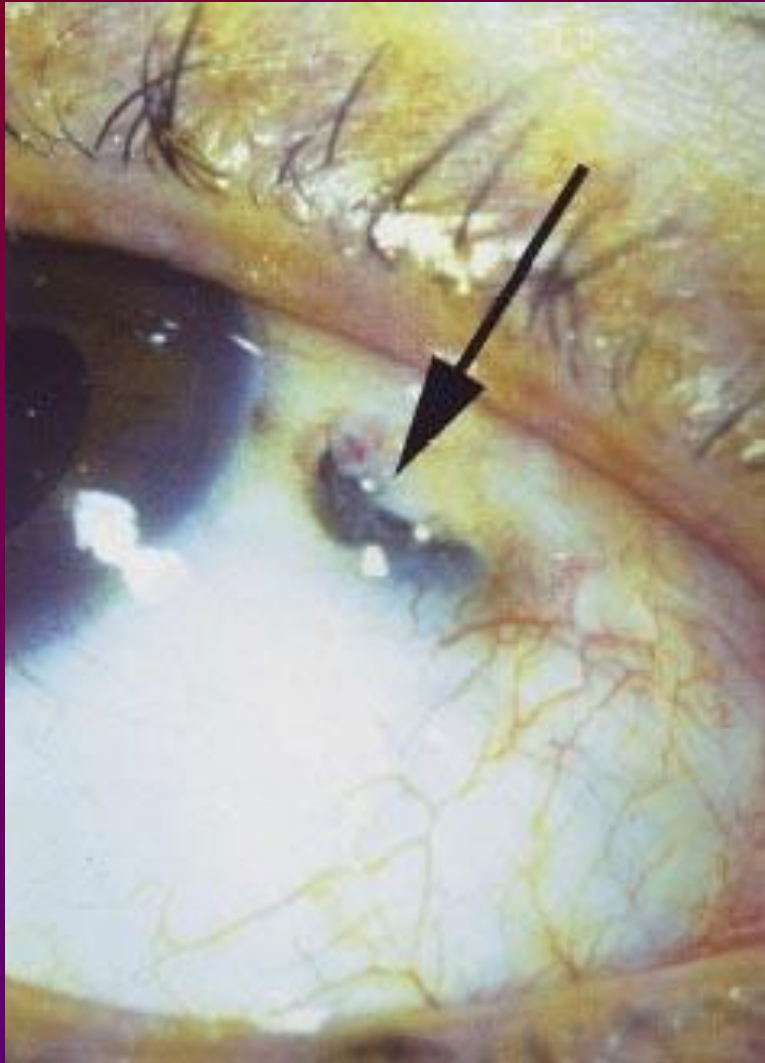
Foreign body under upper lid



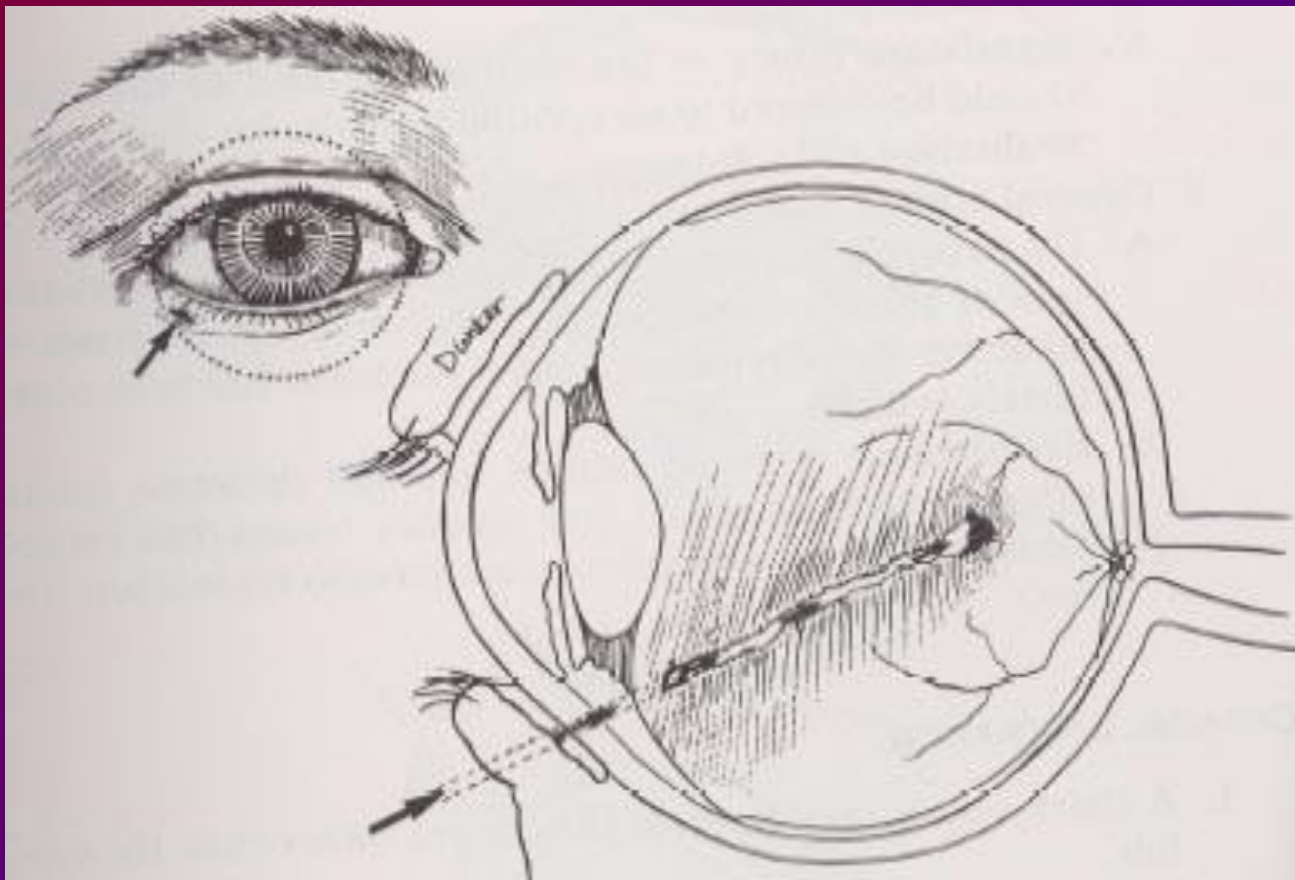
Intraocular foreign body

- usually caused by small object moving at a high speed that penetrates the eyeball.
- pain may be minimal
- x-ray obligatory
- surgical intervention
- all f.b. Should be considered contaminated (consider antibiotics)

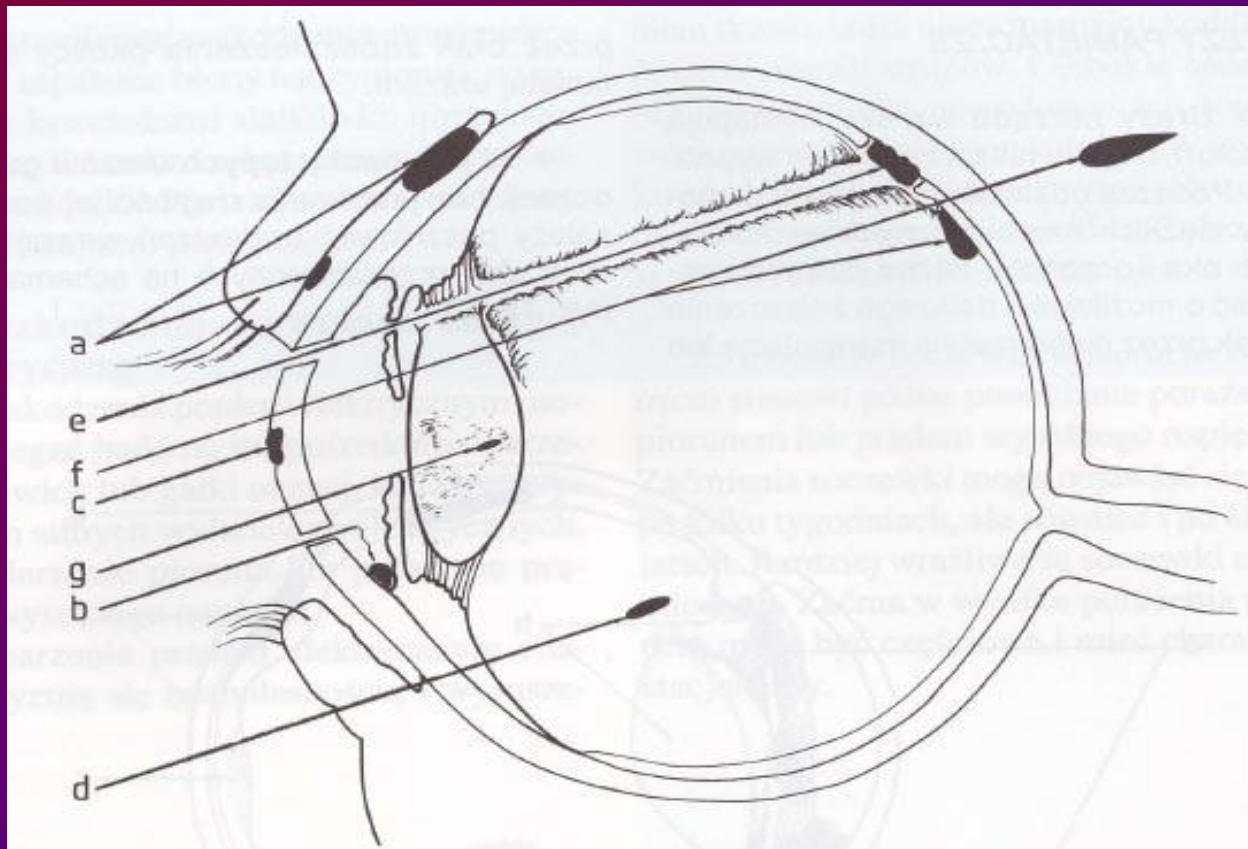
Foreign body



Foreign body



Foreign body



Acute conjunctivitis

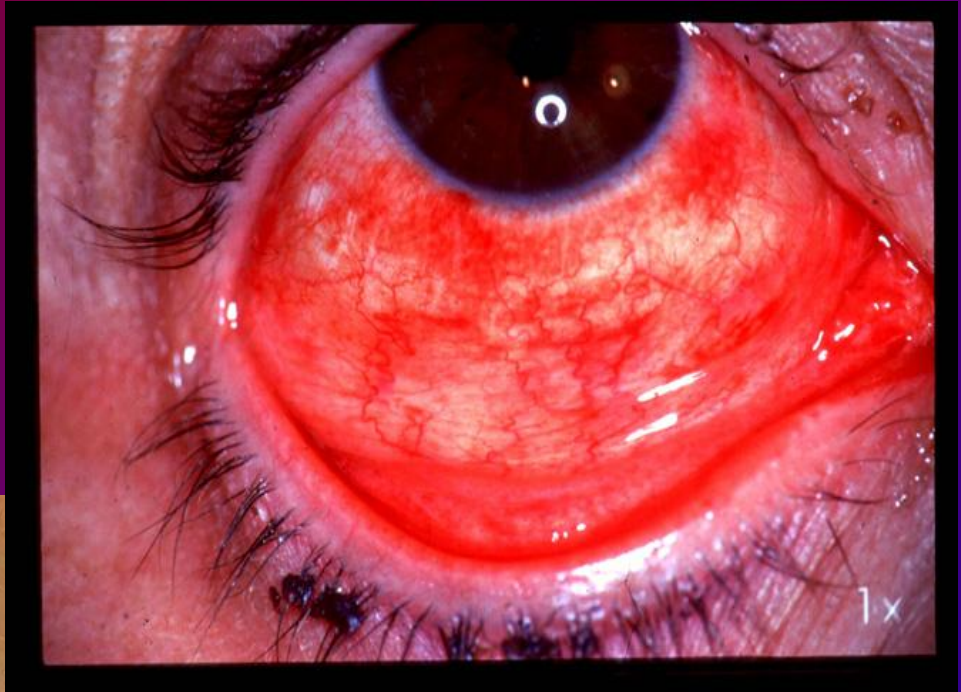
- most commonly bacterial infection of conjunctiva

Symptoms:

- eyelids „stick together” on waking,
scratchy sensation, purulent discharge

Administer local antibiotics

Contagious. Instruction to patient how to avoid spreading infection



Subconjunctival hemorrhage
(often results from blood hypertension,
untreated will resolve in about 2 weeks)



Acute glaucoma (closed angle)

- very high intraocular pressure (IOP)
- **Symptoms:**
 - severe eye pain and headache, hard globe, fixed and slightly dilated pupil, halos around lights

Therapeutic intervention (to decrease i.o. pressure):

- topical B-adrenergic antagonists (timolol 0,5%)
- Diamox, mannitol,
- miotic eyedrops (pilocarpine)
- surgery

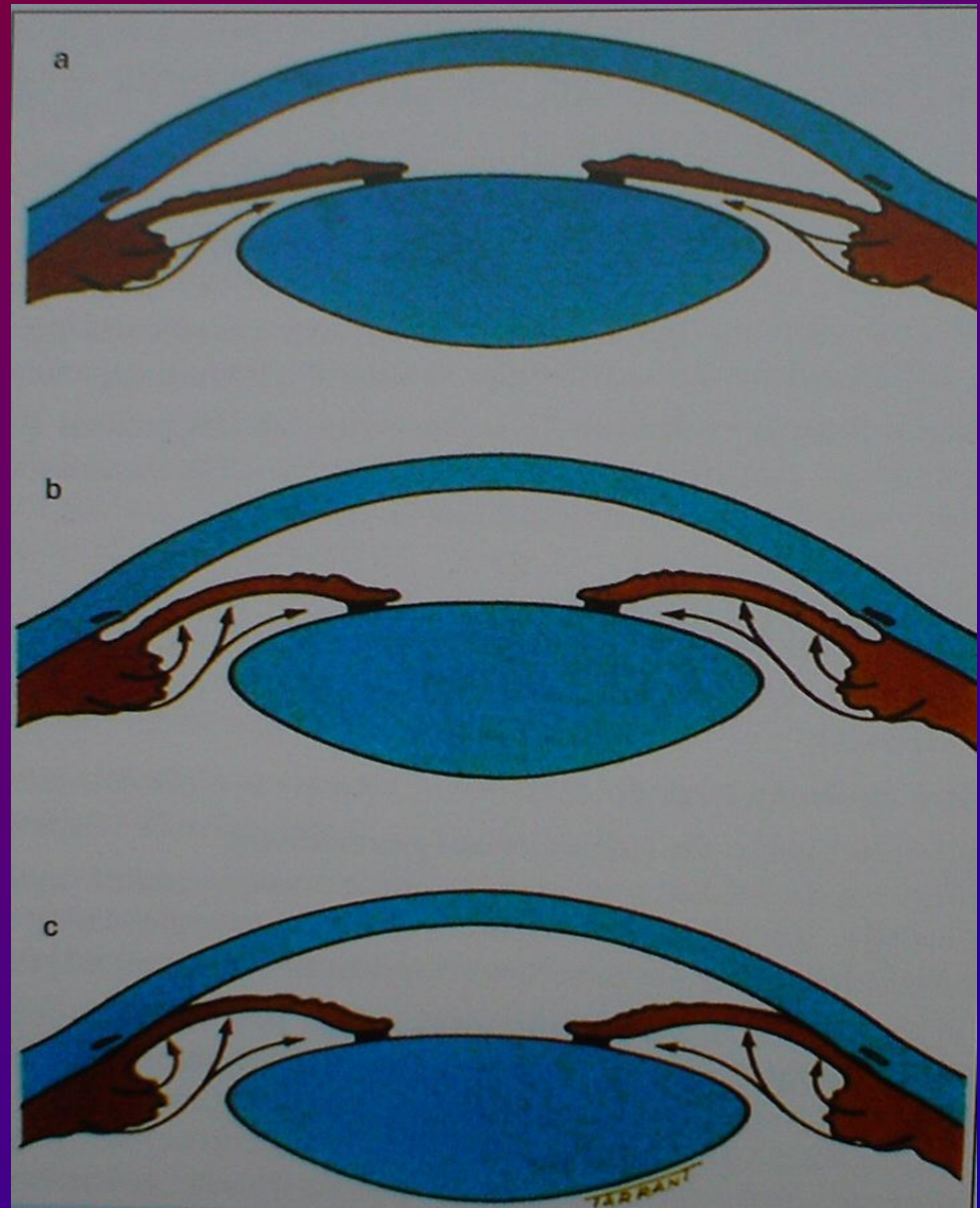


Acute glaucoma



Acute glaucoma

Acute glaucoma
- blockage in the anterior
chamber angle



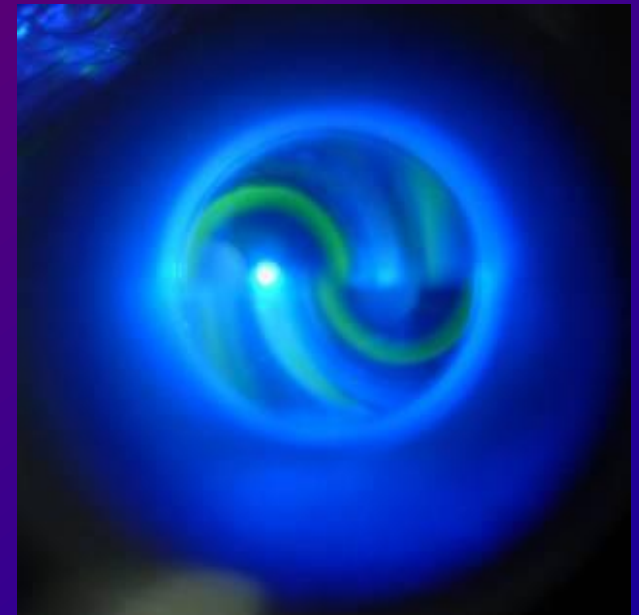


Checking of IOP by palpation

Schiotz tonometer



Goldmann applanation tonometry



Blow out fracture

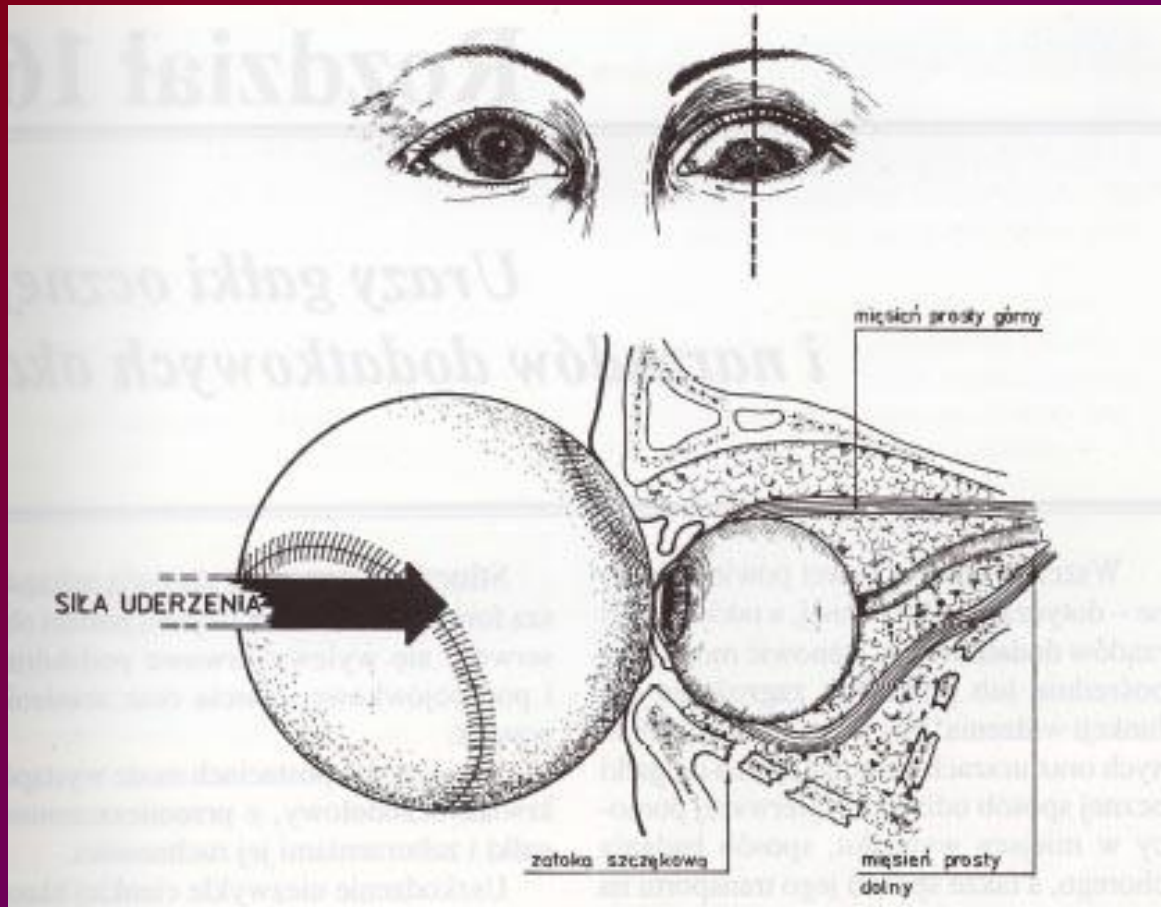
- results from blunt trauma which fractures the orbit floor

Symptoms:

- enophthalmos / exophthalmos
- restricted extraocular movement, diplopia
- periorbital hematoma, edema
- anesthesia of infraorbital nerve

Surgical intervention

Blow out fracture



Blow out fracture



Normal eye bottom



Central retinal artery occlusion

- painless sudden blindness
- prognosis for regaining sight very poor if the occlusion has lasted longer than 1 h

Therapeutic intervention:

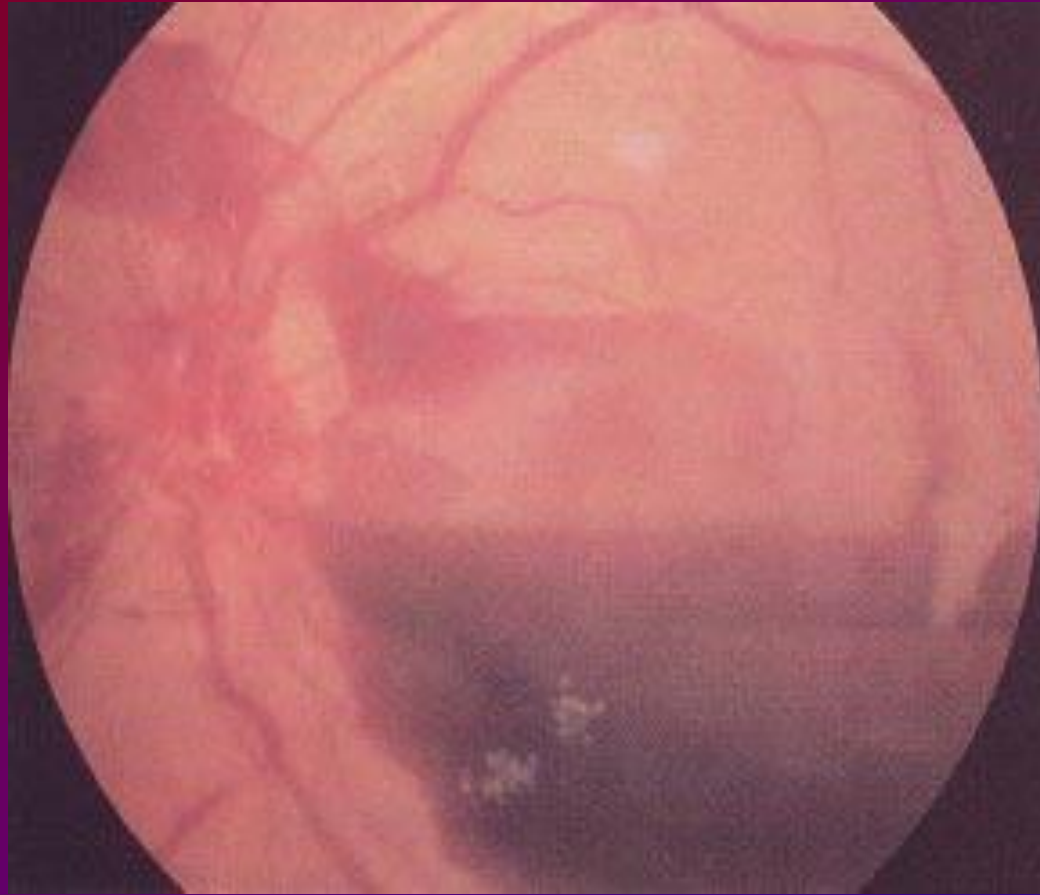
- anticoagulants
- tPA may be given within 1h of onset
- gentle ocular massage or intermittent digital pressure
- rebreathing CO₂ from paper bag to decrease blood pH and dilate artery



Retinal artery occlusion

Central retinal vein thrombosis





Preretinal hemorrhage

Retinal detachment

- separation of the retina from the choroid, which decreases blood and oxygen supply to the retina

Symptoms:

- painless, often „flashes of light”
- a „veil” or „curtain” effect in the visual field

Surgical intervention



Retinal detachment

Chemical burns

- immediate therapeutic intervention for any type of chemical burn is irrigation with copious amounts of saline solution or water

Alkali burns

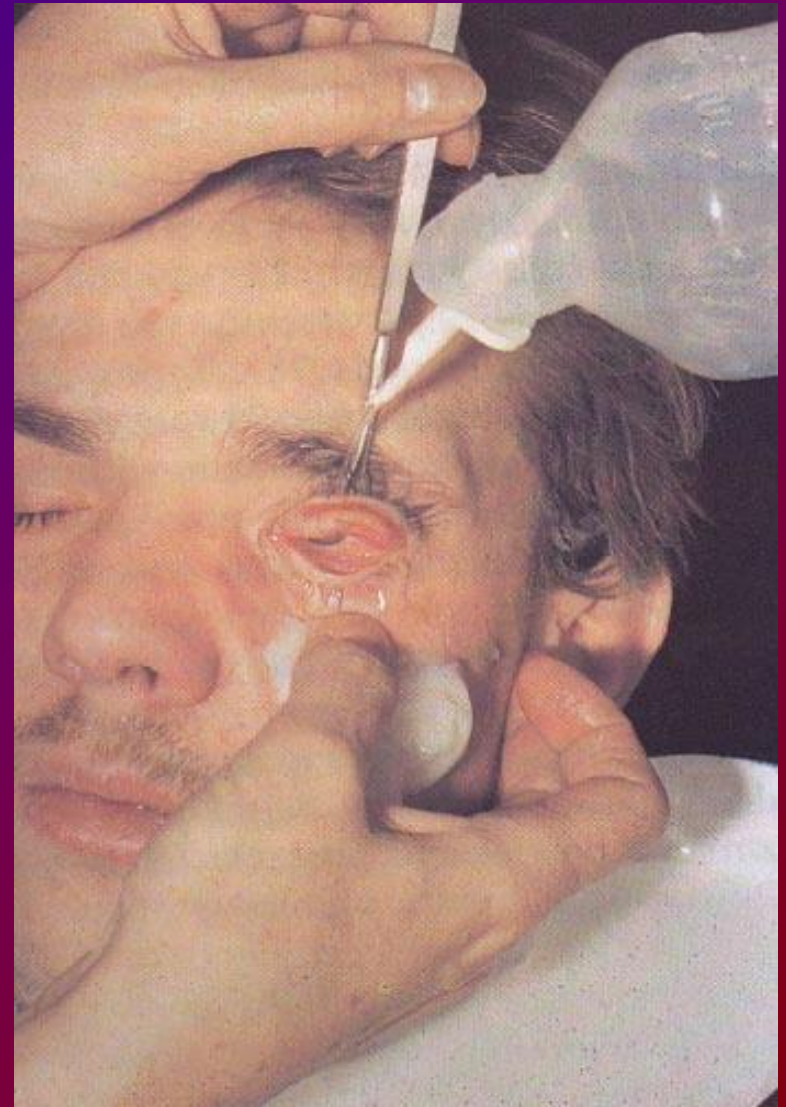
- serious emergency situation because alkali cause great tissue destruction

Acid burns

- tissue denaturates from acid

Chemical burns

- topical anesthetic
- irrigation (min 2 liters)
- topical antibiotics and cycloplegics





Thank you