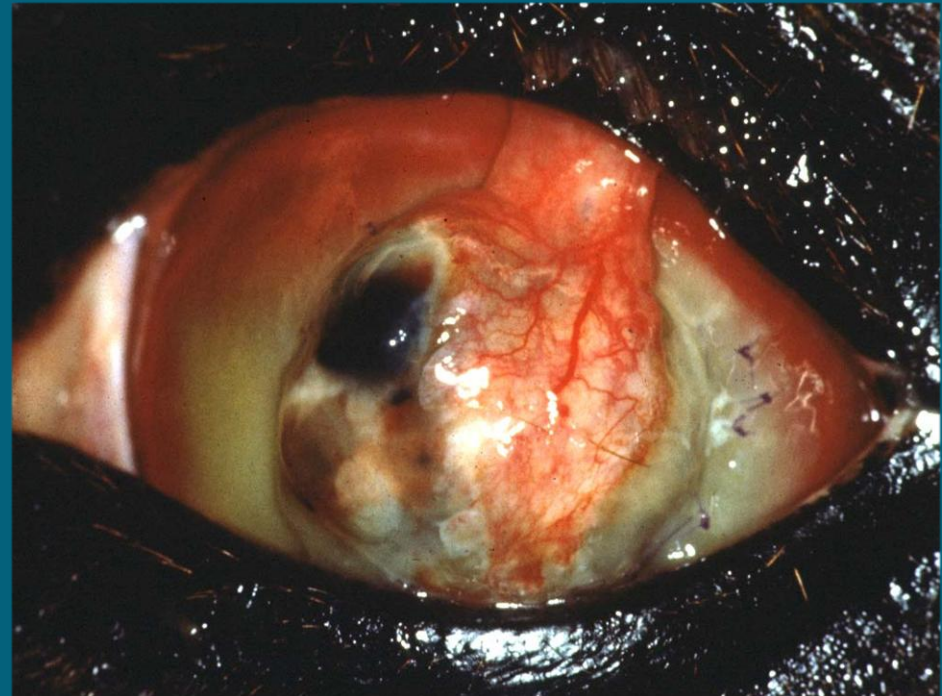


Equine Ocular Emergencies

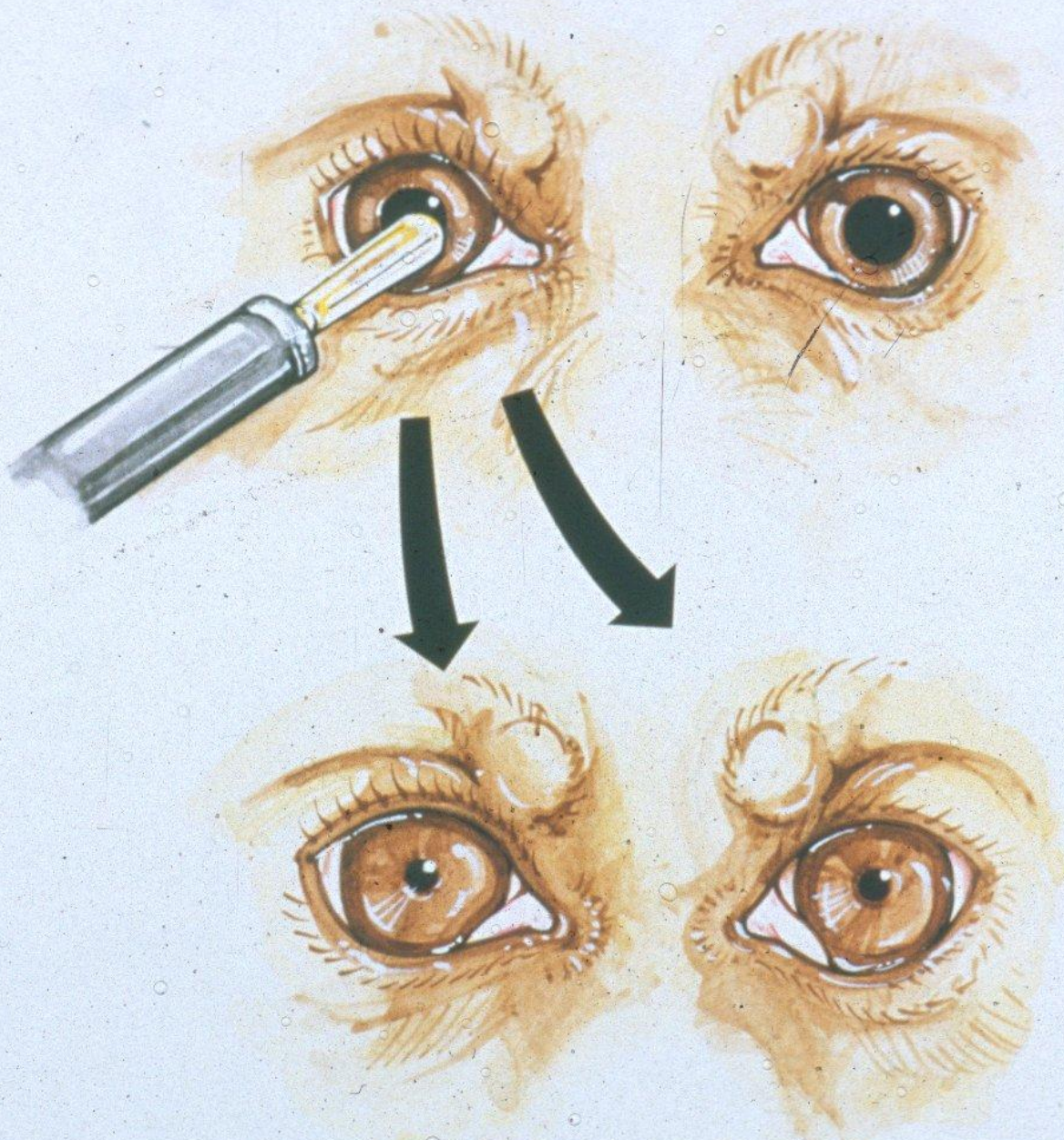
John S. Sapienza, DVM
Diplomate, ACVO
LIVS Plainview, NY



Basic Ocular Exam

- Overall patient evaluation
- PLR
- Menace reflex
- Dazzle reflex
- Systematic ocular exam: anterior → posterior

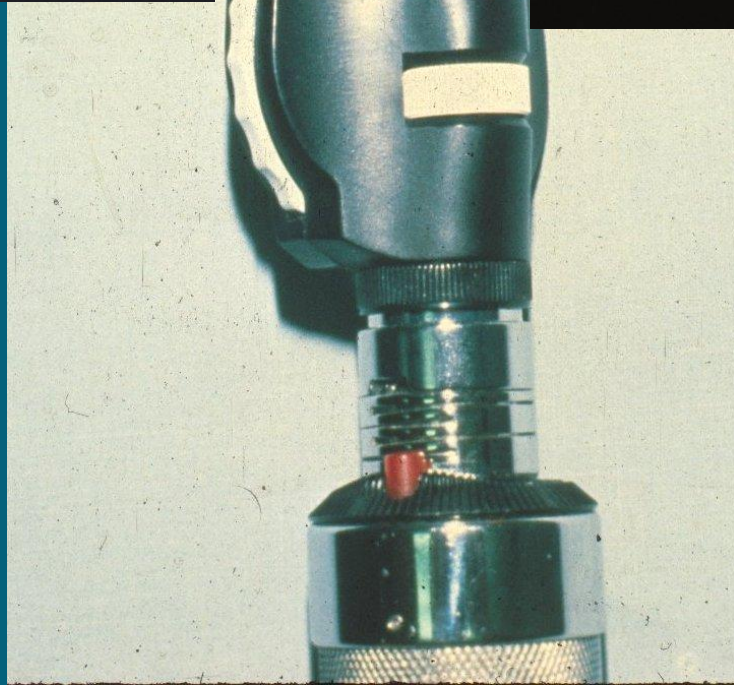
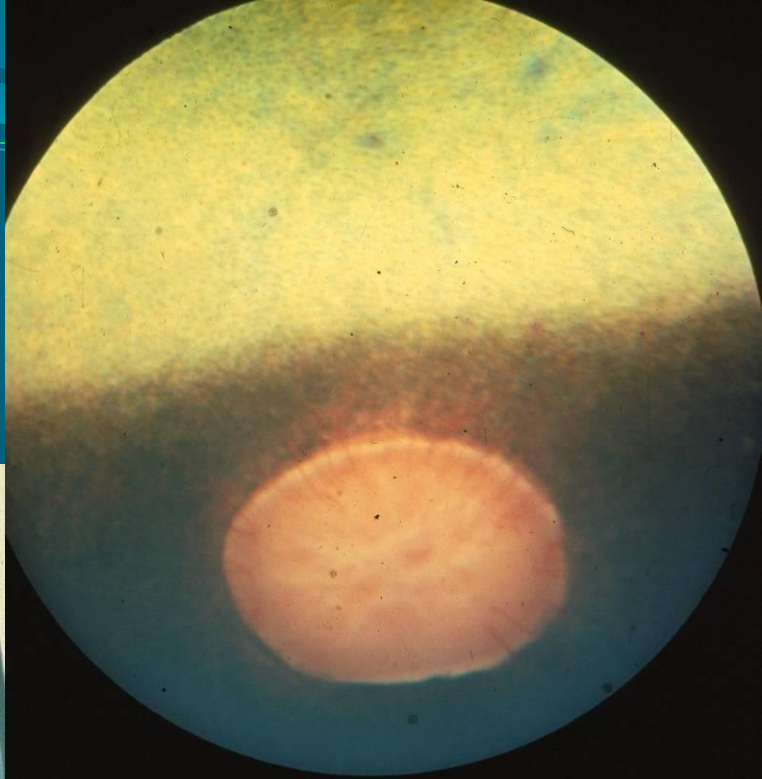
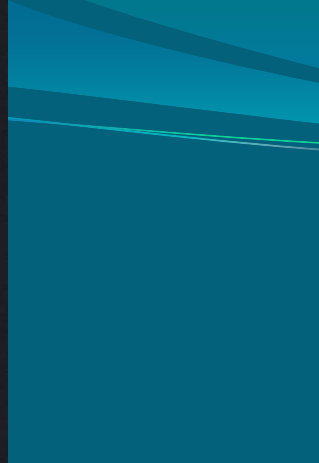
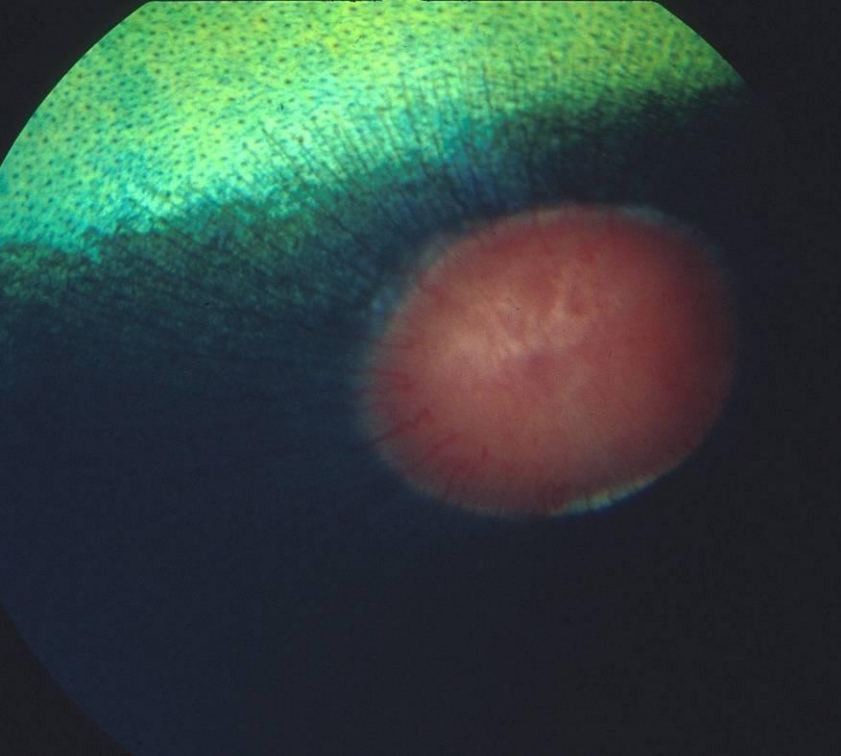




Direct

Consensual



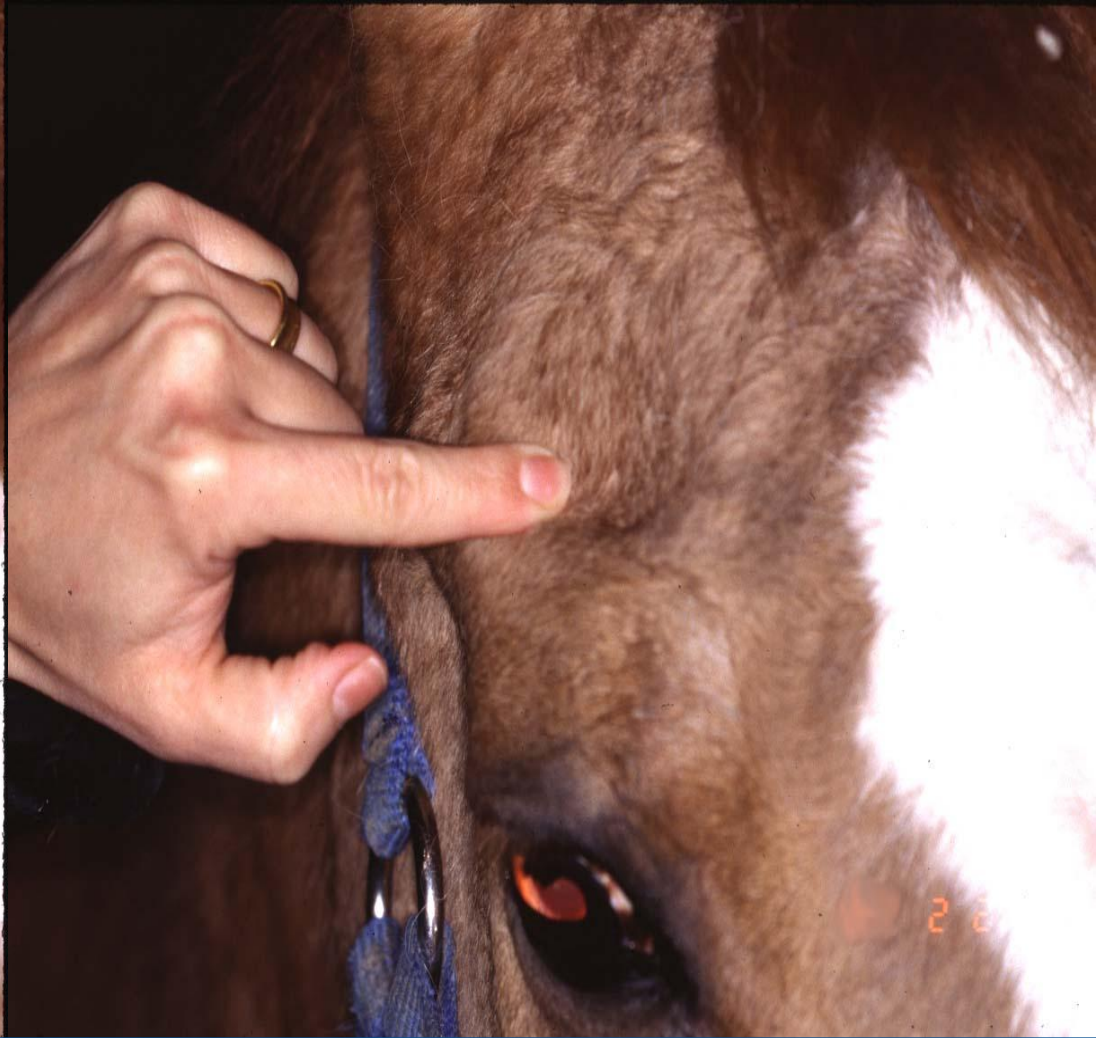
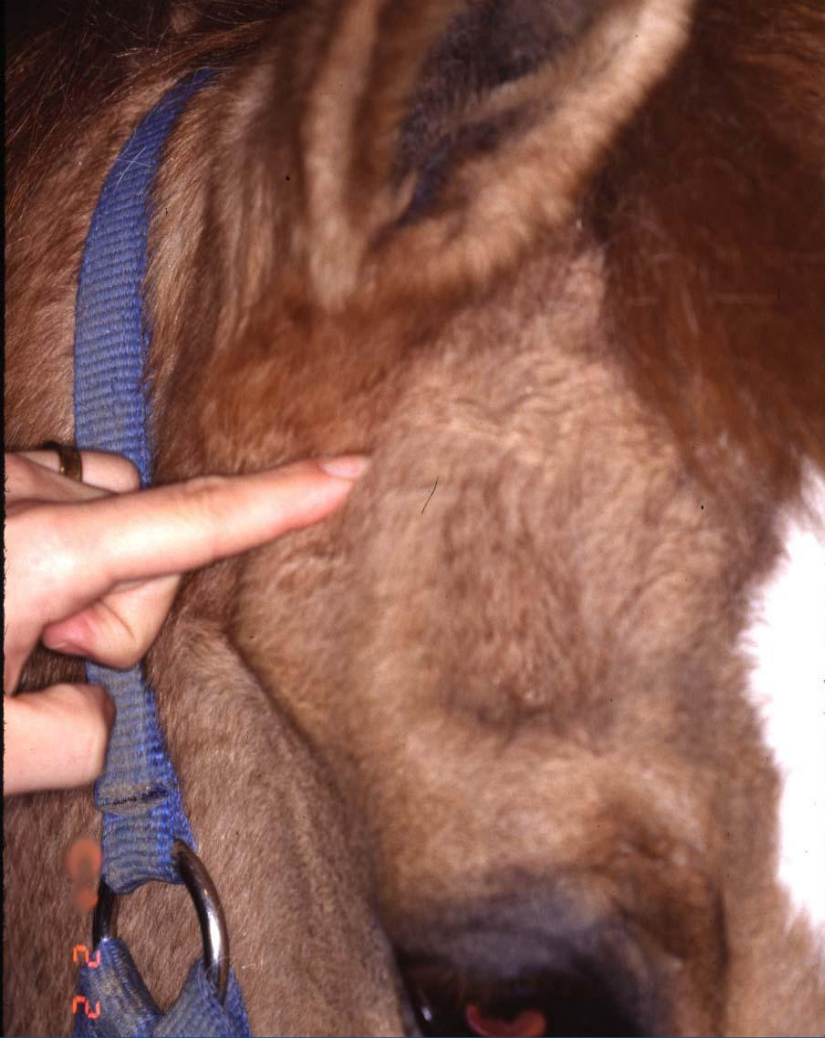


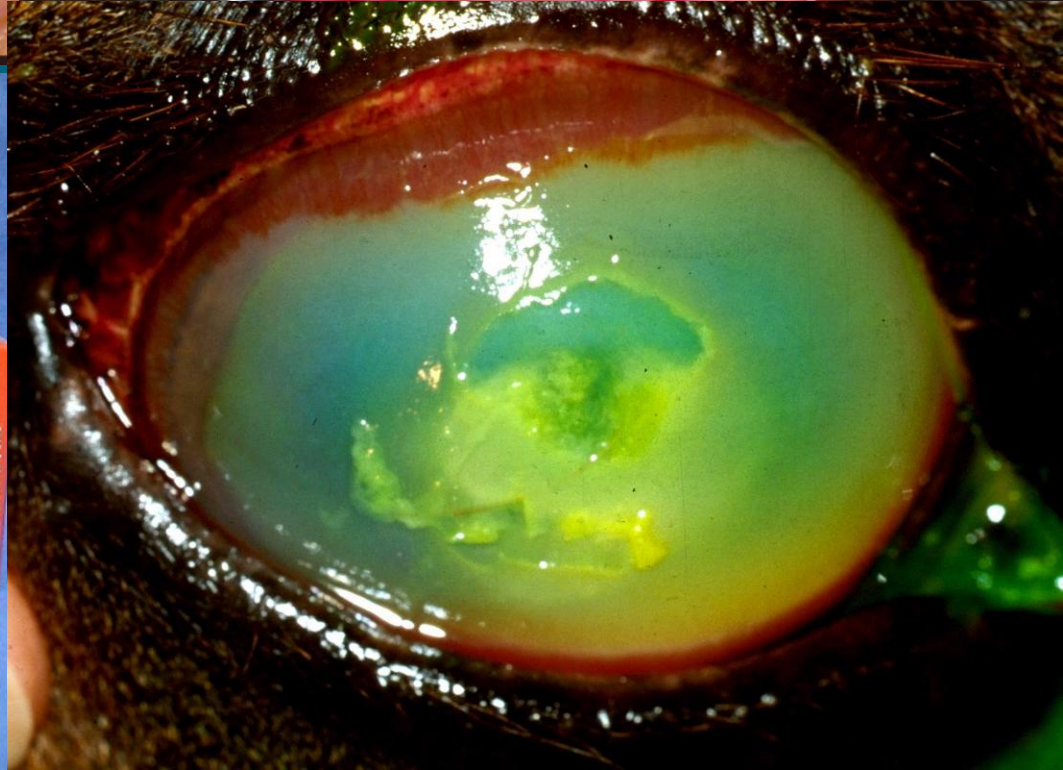
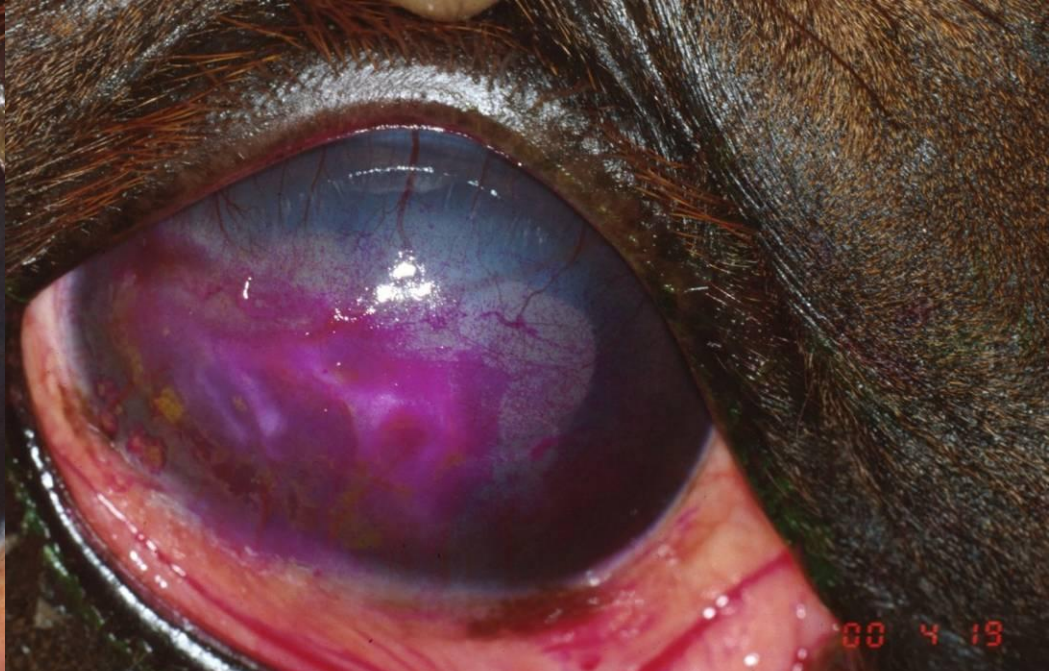
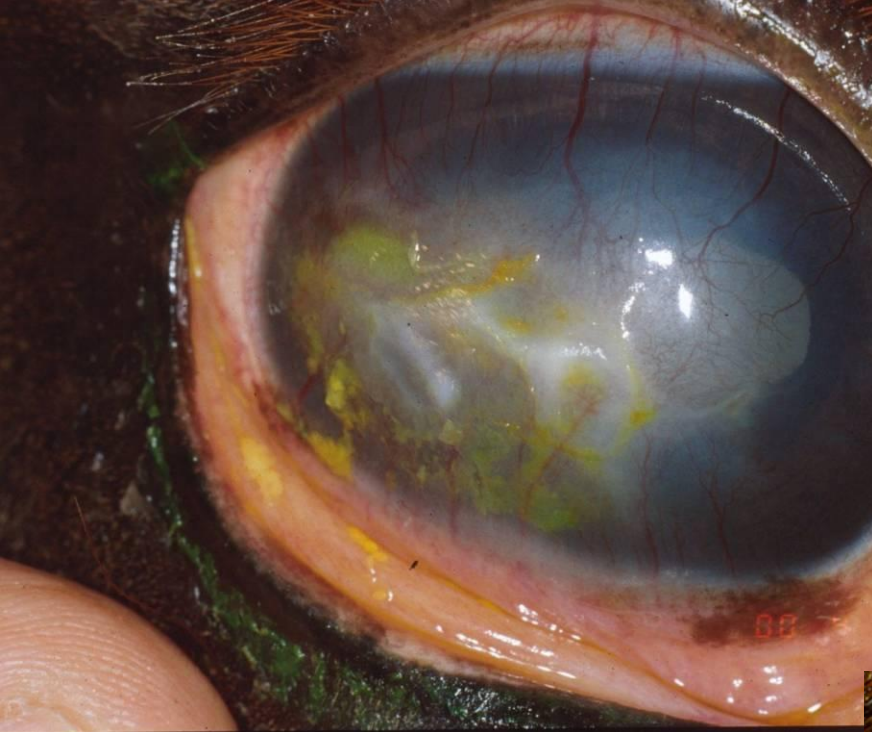
EIDOLON





IOP=16-30 mmHg
TONO-PEN





Eyelid adnexal injuries

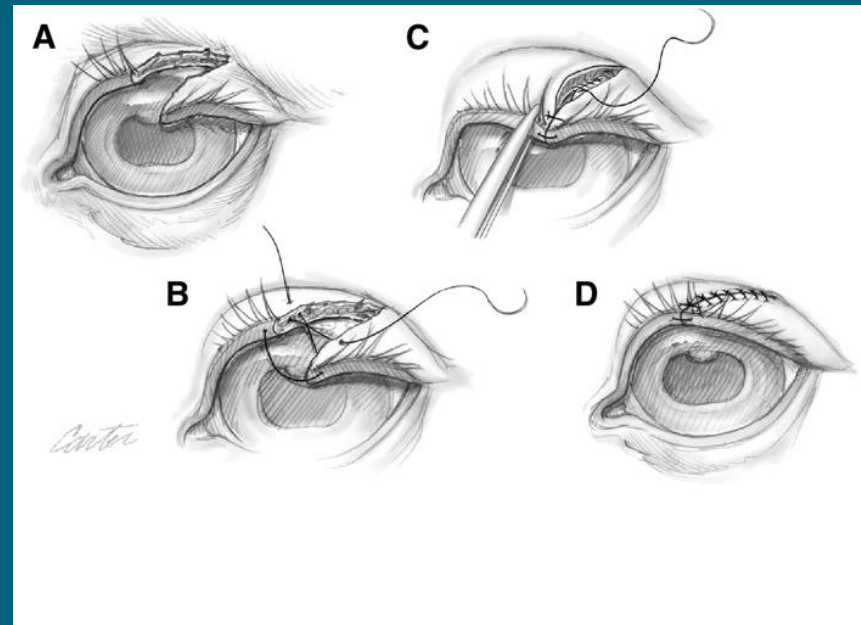
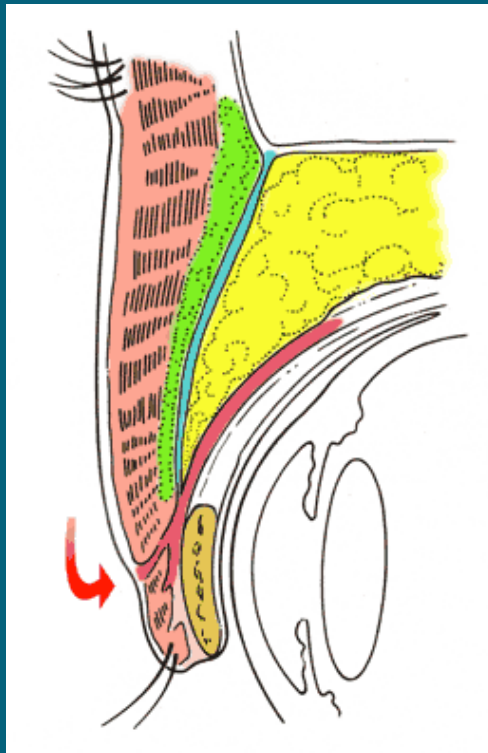
- Minimal debridement
- Two layer closure
- Topical and oral AB's
- Oral NSAID's
- Tetanus prophylaxis



Two layer closure:

5-0 to 7-0 Vicryl tarsoconj

5-0 to 6-0 non-abs. skin-mus



Capaldo F, Komáromy AM. Ophthalmic emergency.
Current Techniques in Equine Practice
2006;5:135

- Standing sedation and local blocks
- Auriculopalpebral block
- Frontal (supraorbital) sensory block
- Lacrimal nerve sensory block









Orbital Injuries



Blunt Trauma





- Enclosed orbit
- Fx mostly of ventral wall of orbit or the frontal process of the zygomatic bone



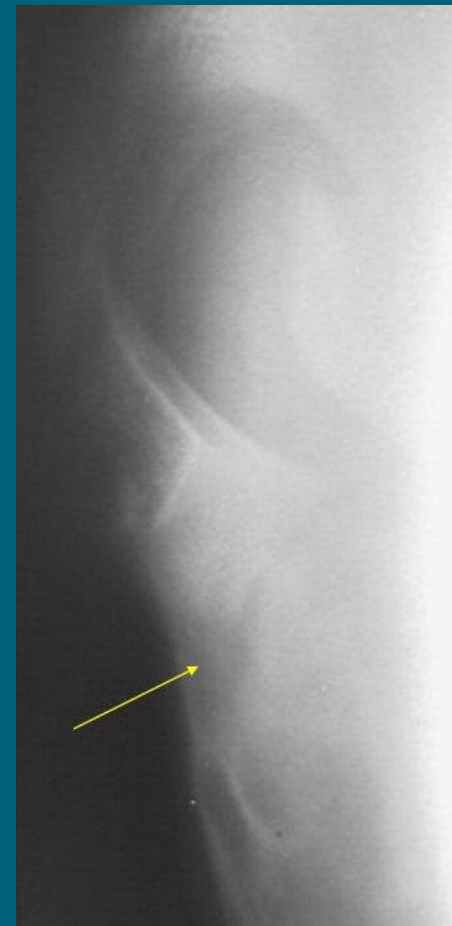
Suspect orbital fx if...

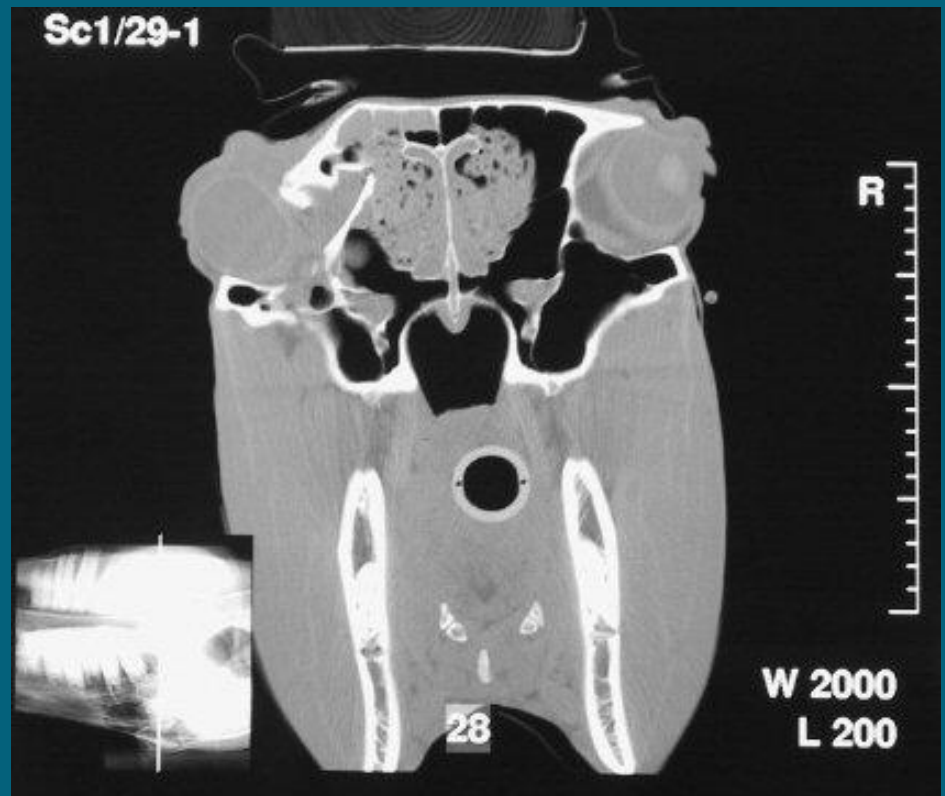


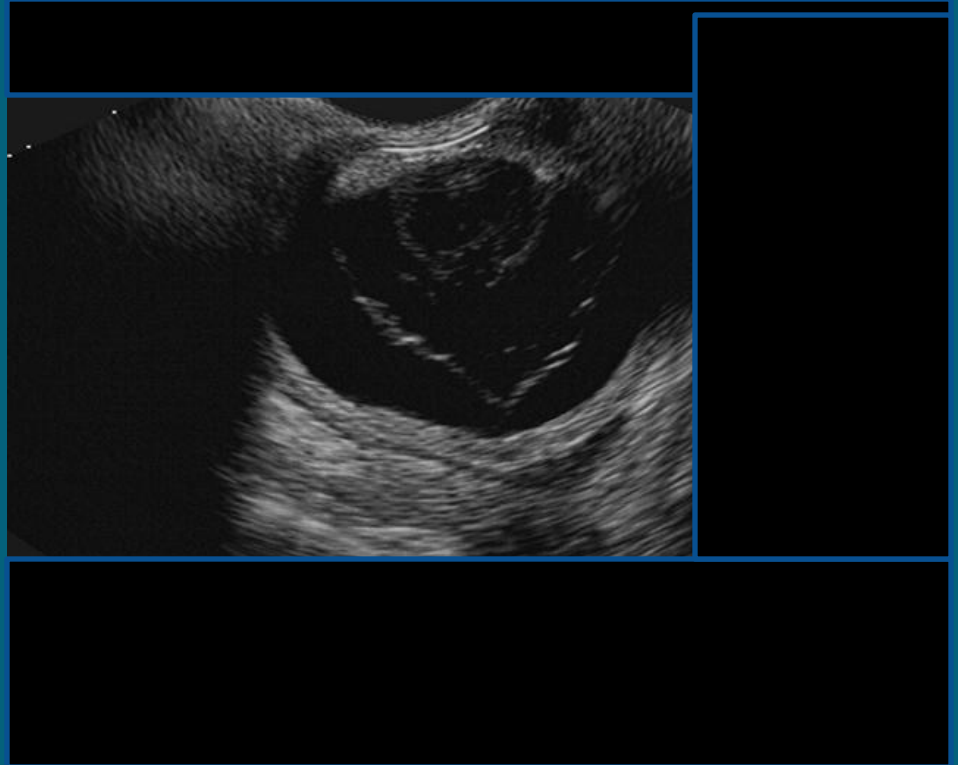
- Facial asymmetry
- Crepitus
- SubQ emphysema
- Compound fx

Radiography

- Lateral
- Dorsoventral
- Oblique









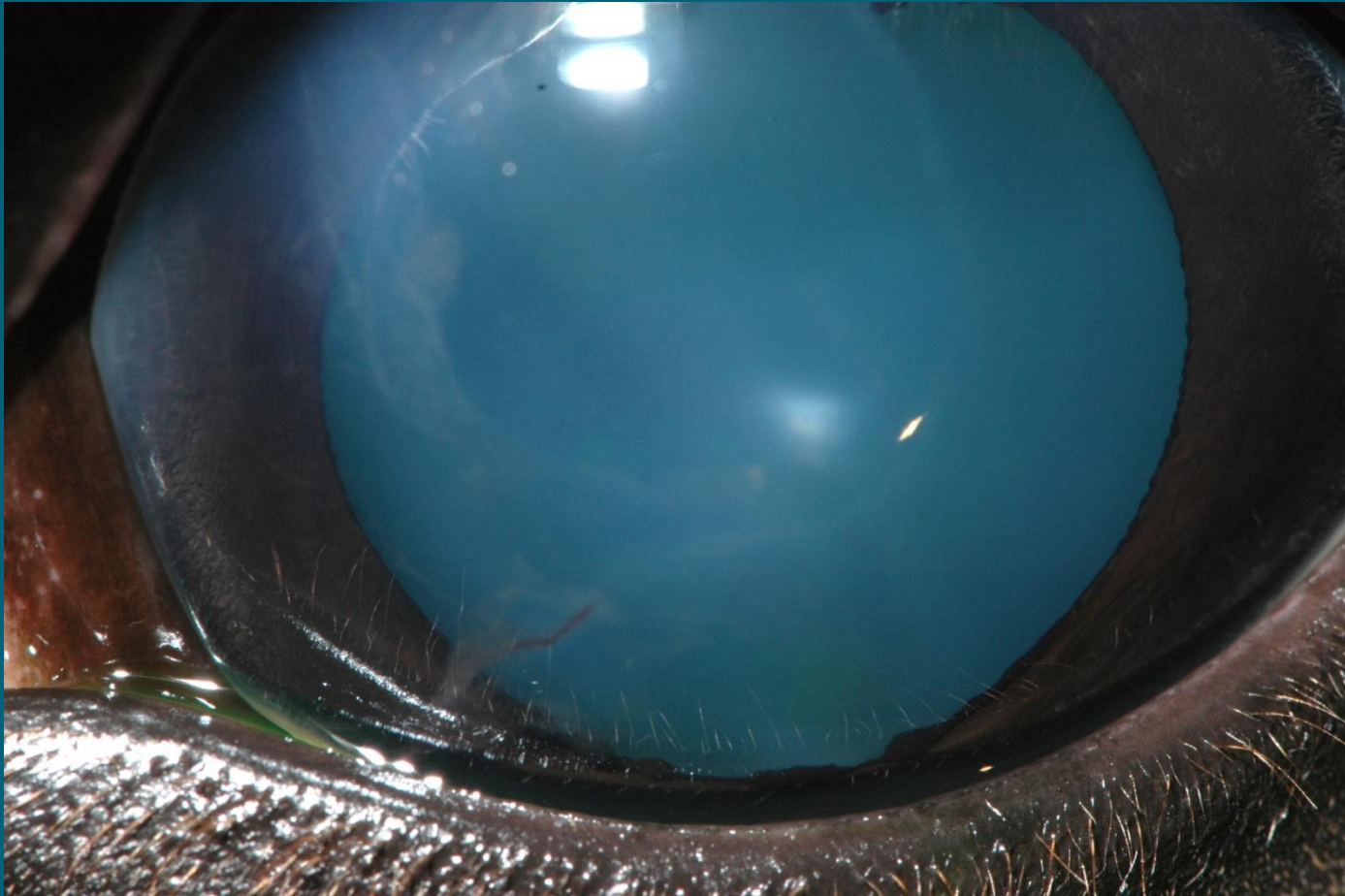
Orbital Fx's: Decision to do sx...

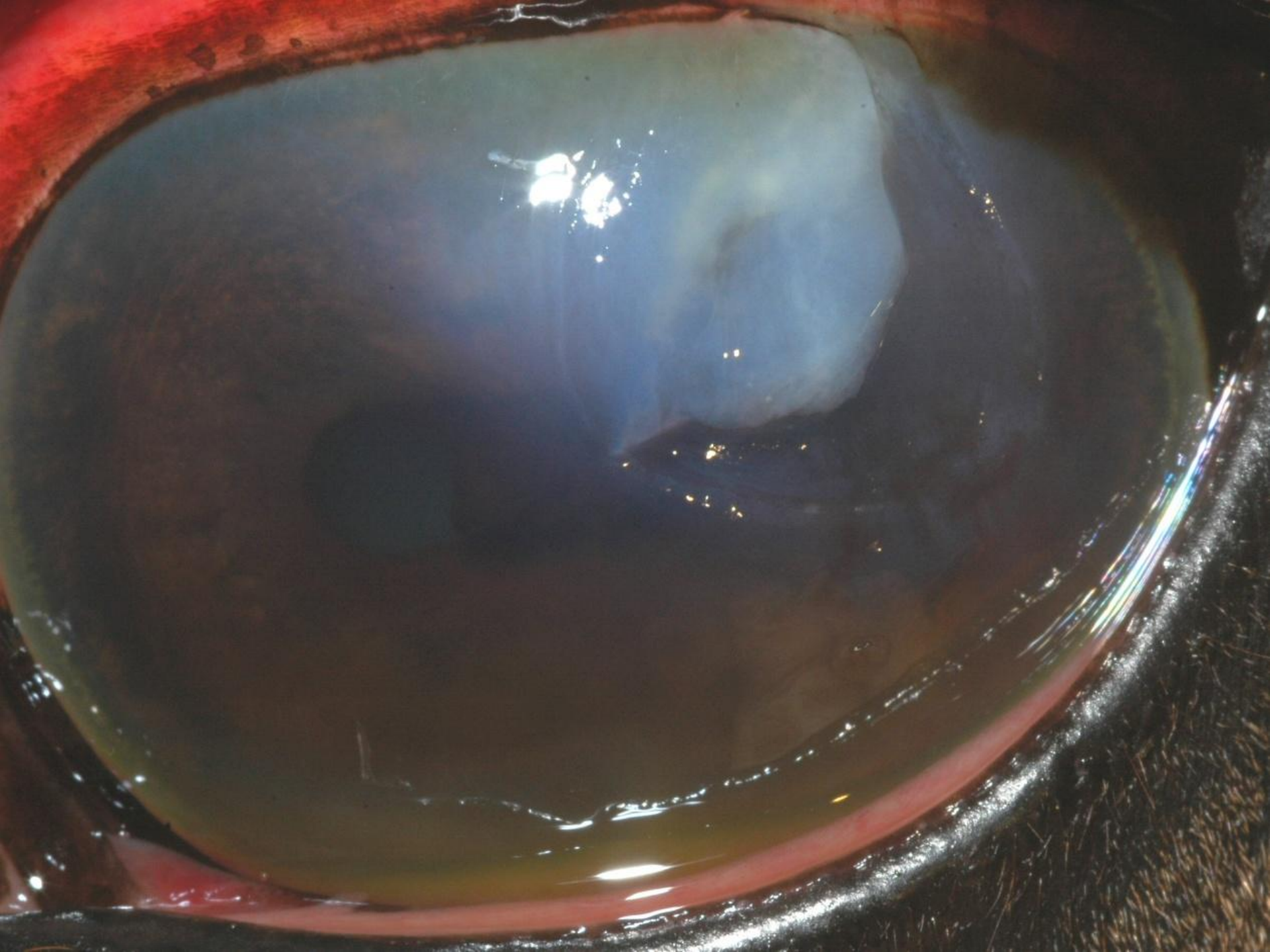
- Impingement on ocular structures: optic nerve or globe
- Adnexal structures: supraorbital nerve, nasolacrimal duct

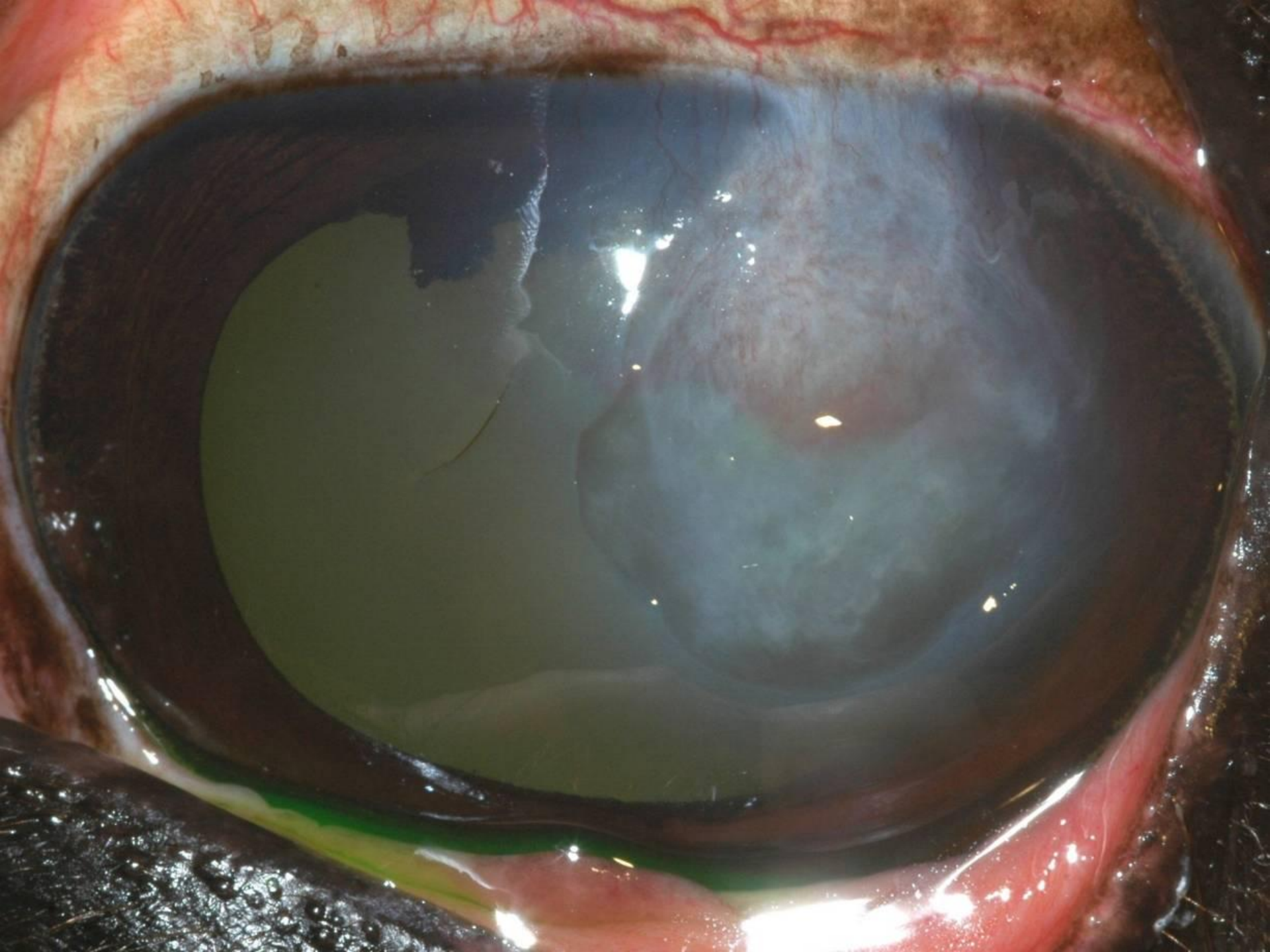




Corneal Lacerations



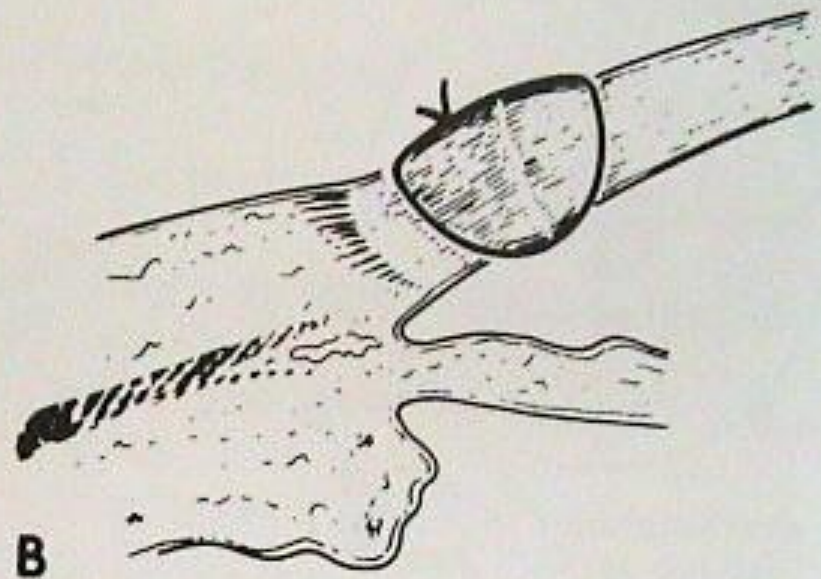
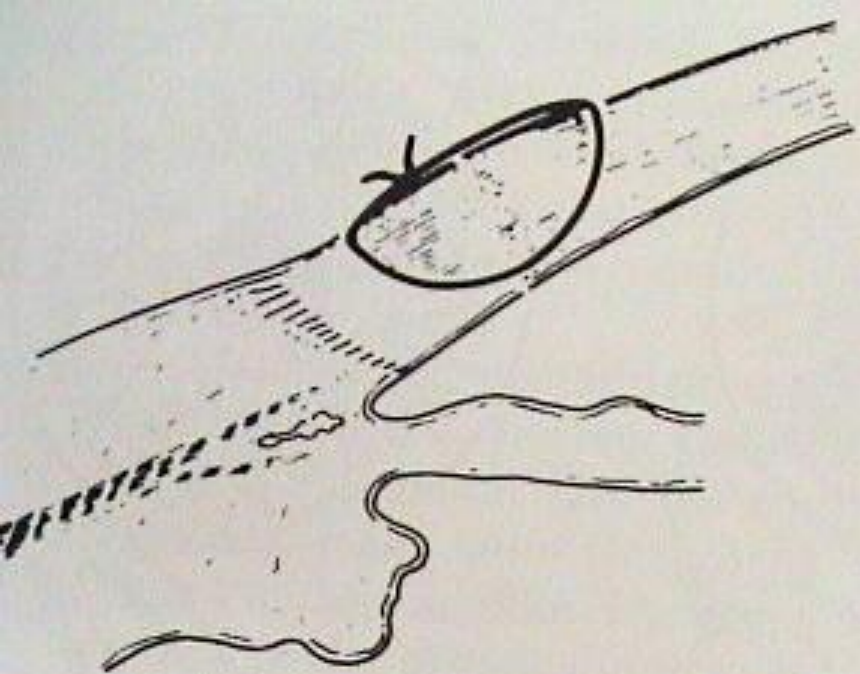




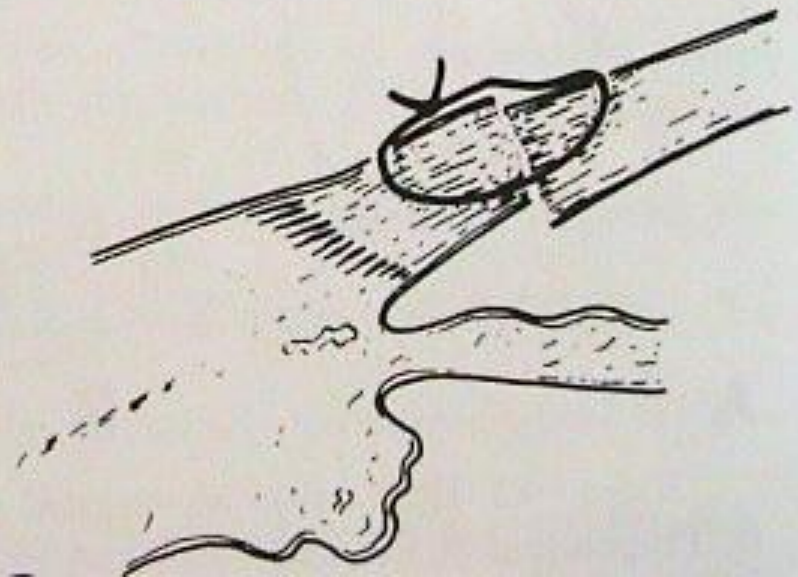
Corneal lacerations

- Prompt repair
- Replace iris if viable
- Amputate iris if necrotic
- Re-establish anterior chamber
- 7-0 Vicryl suture





B



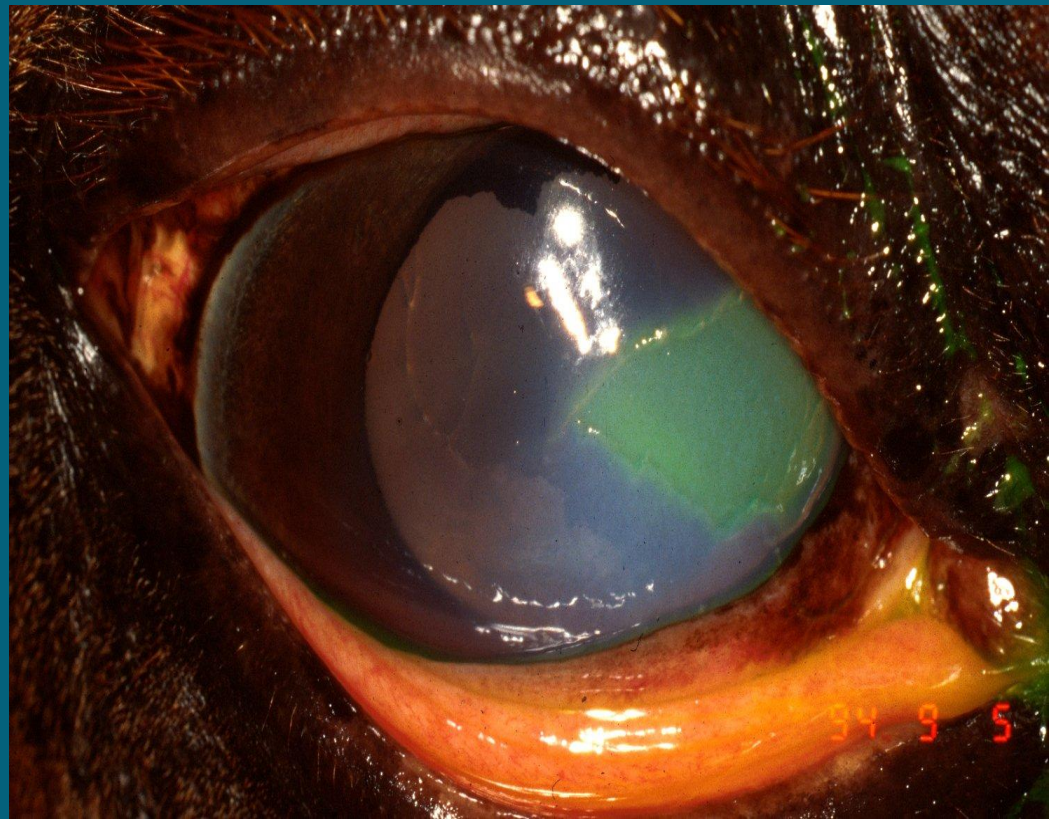


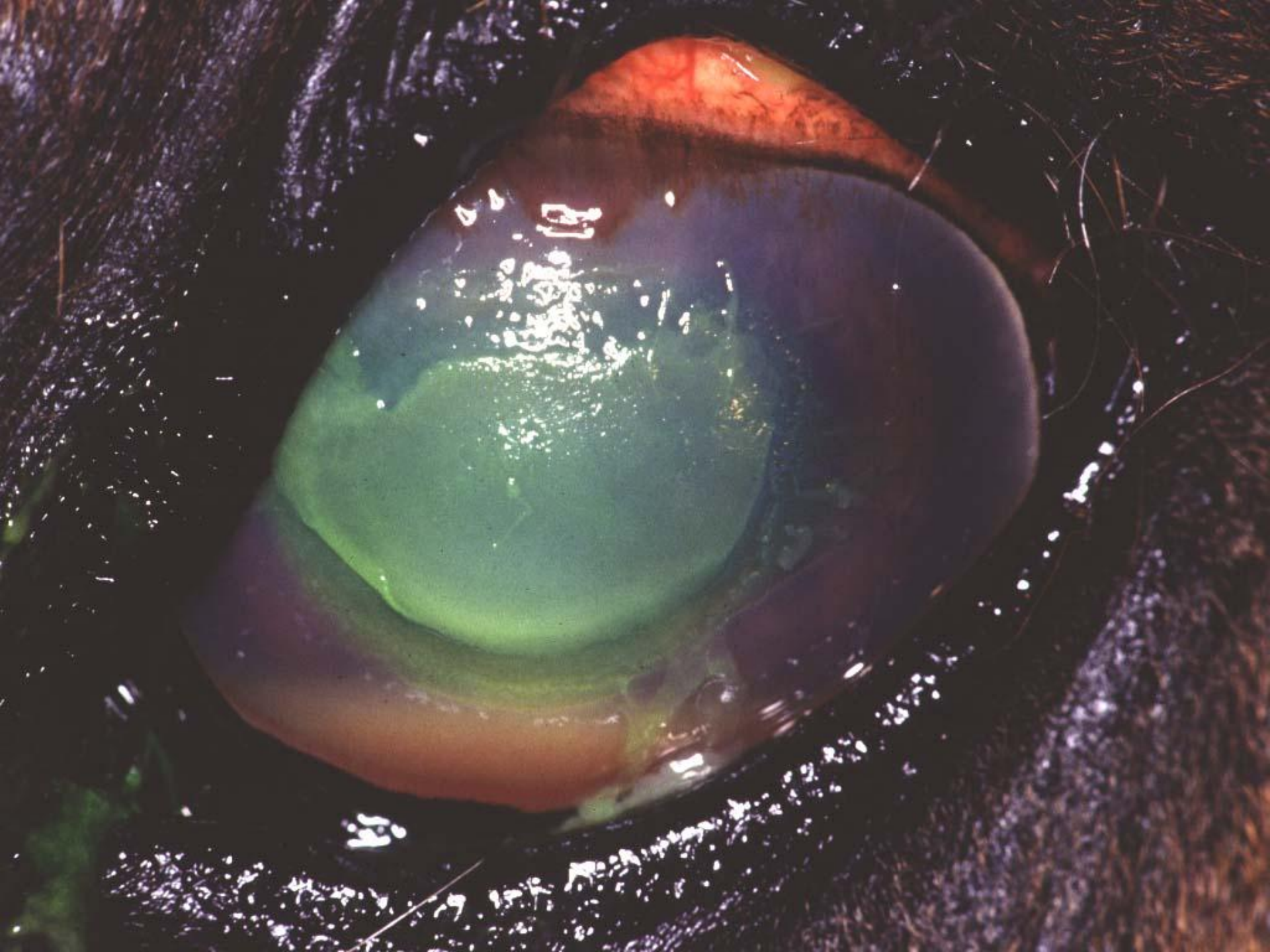
Corneal perforations: Poor Px if...

- Laceration involves the limbus
- Significant hyphema (>50%)
- Lens perforation
- Large uveal prolapse
- No consensual PLR
- Laceration > 15mm

Corneal ulceration

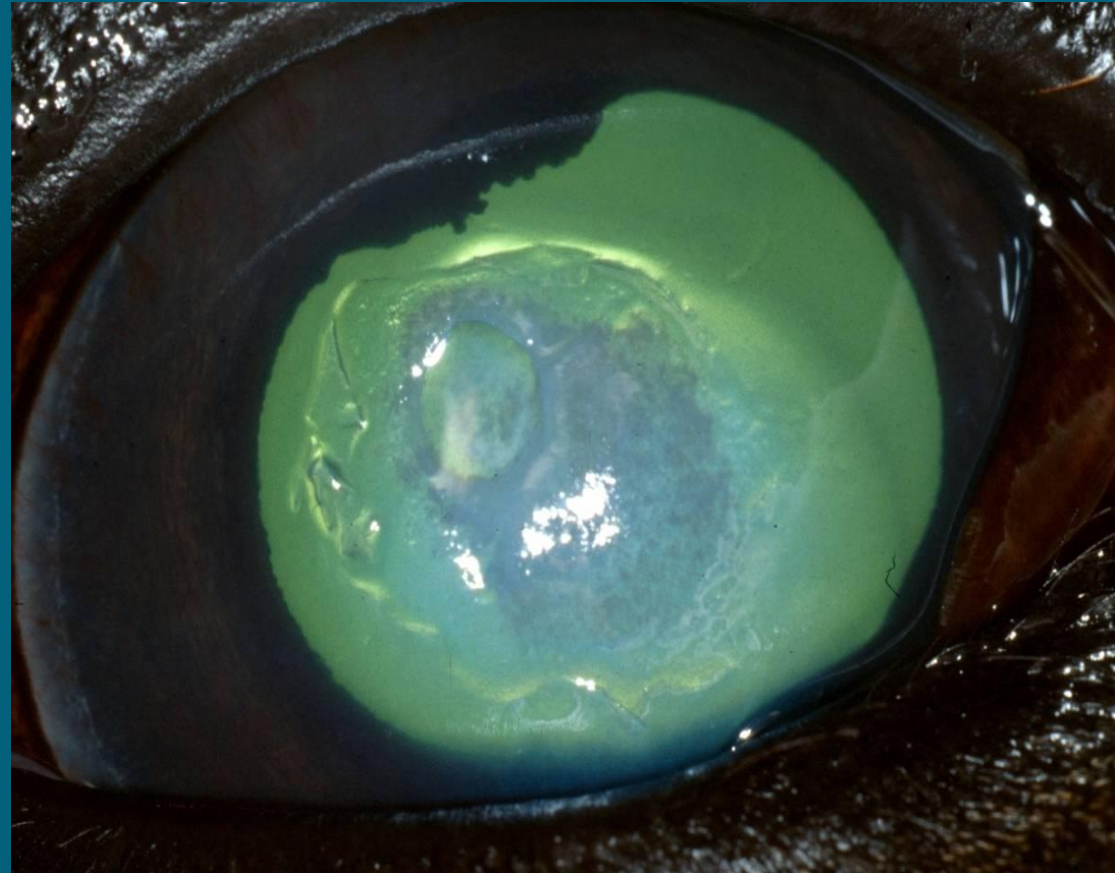
- Superficial vs. deep
- Bacterial vs. fungal
- Complicated, infected ulcers
- Uveitis control: pupil size

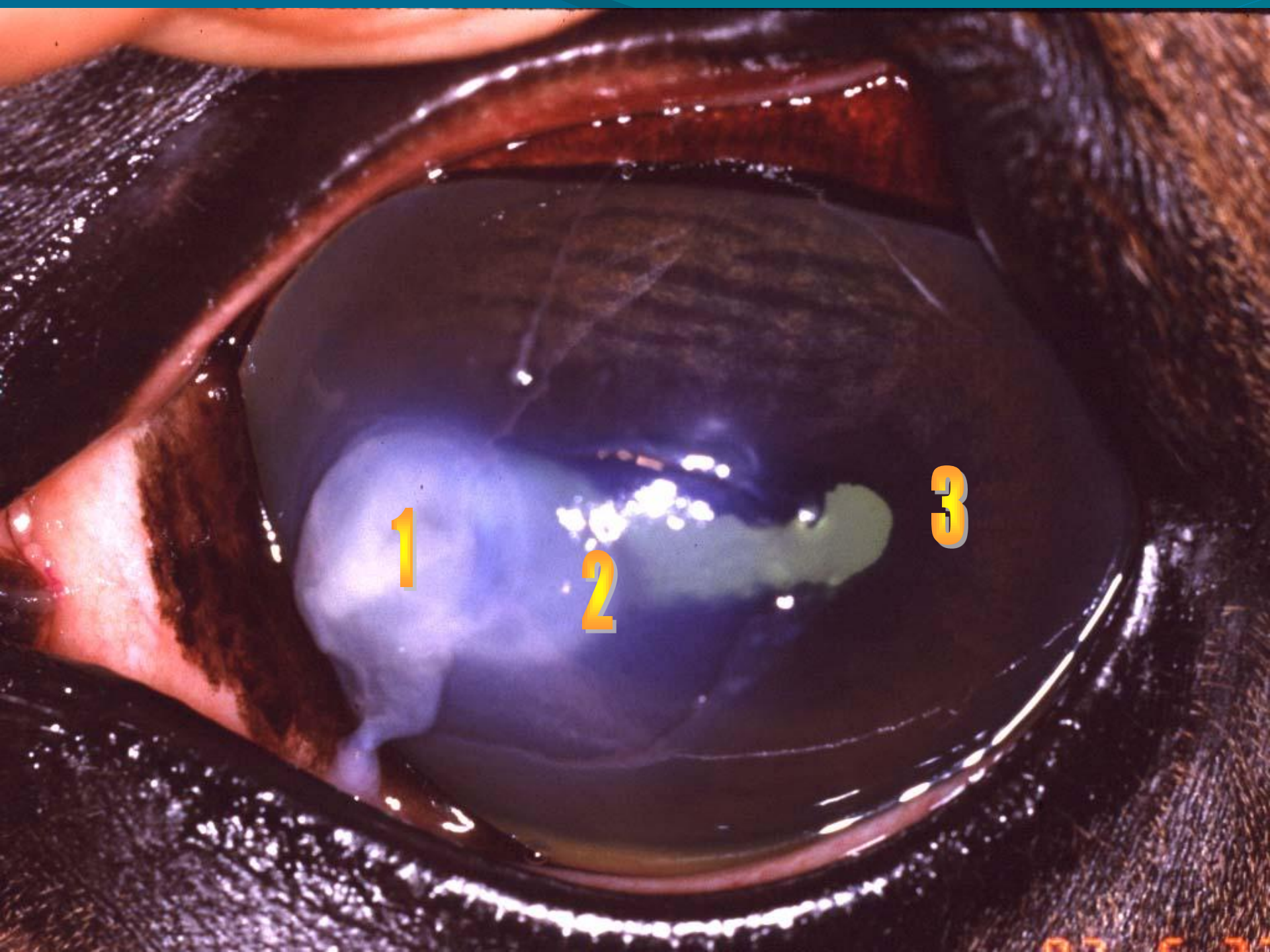




Stromal infections:

- C&S: aerobic & fungal
- Cytology
- Fluorescein stain
- Rose bengal stain

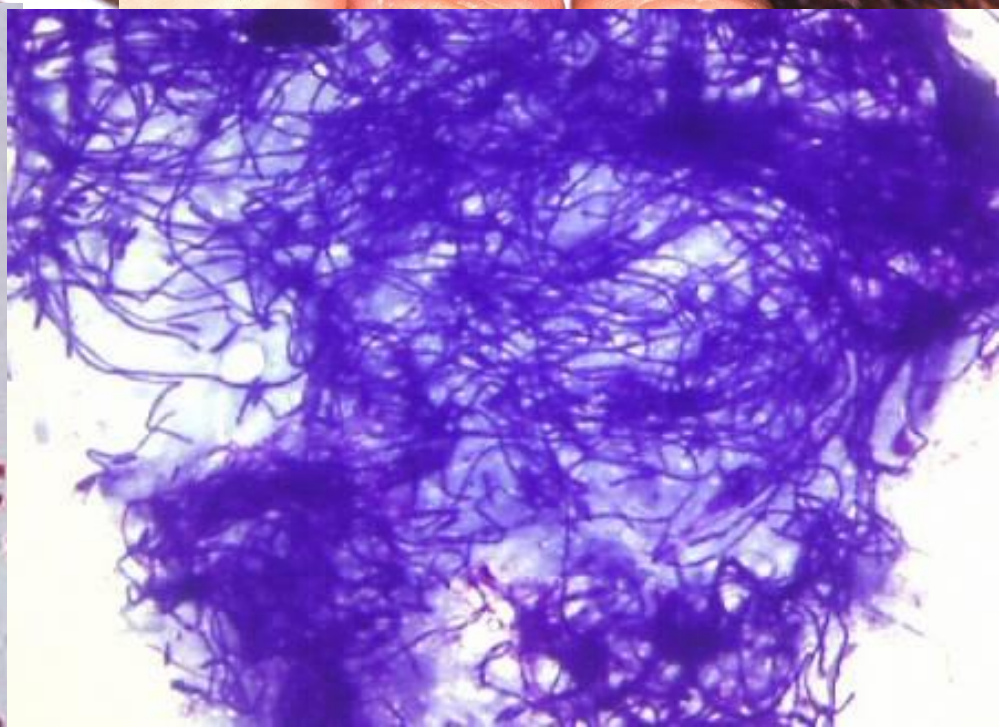




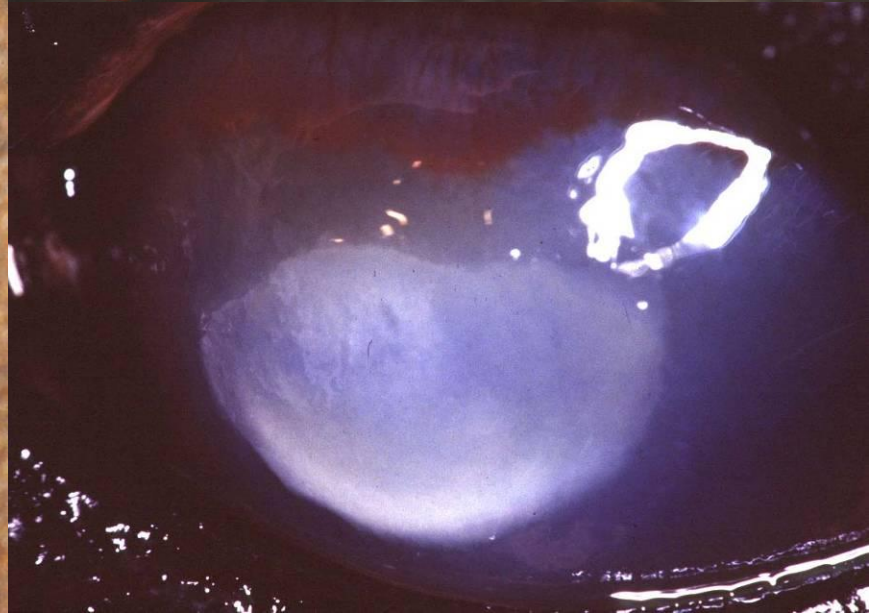
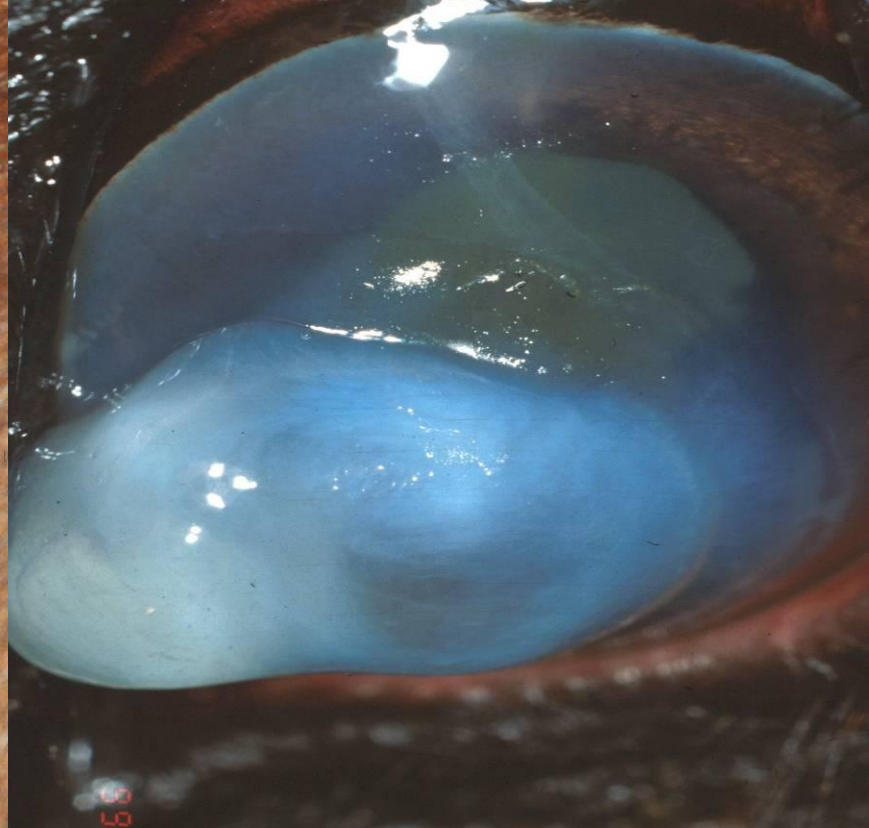
1

2

3



Keratomalacia: “Melting ulcer”



Collagenolysis prevention

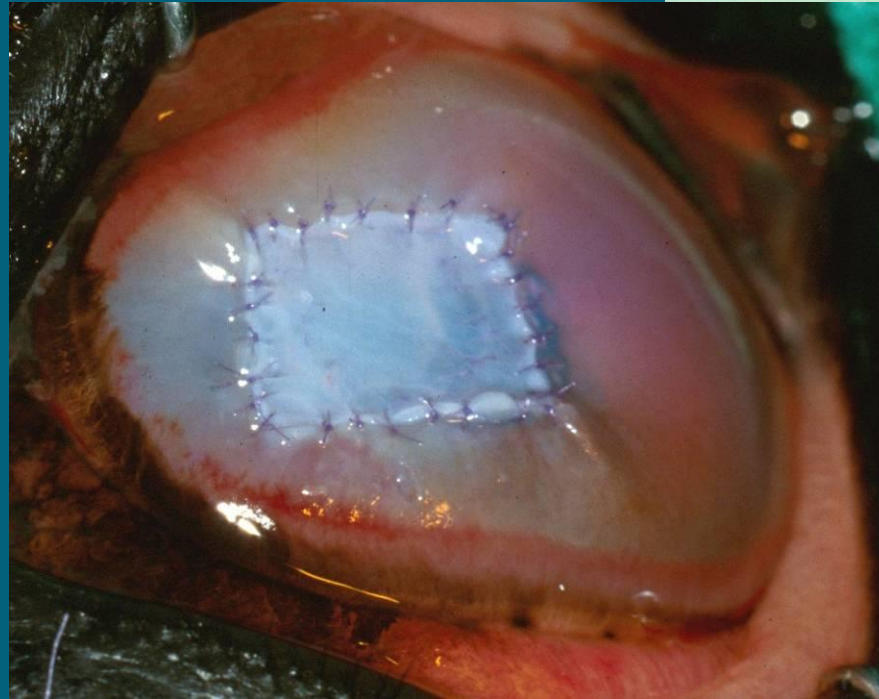
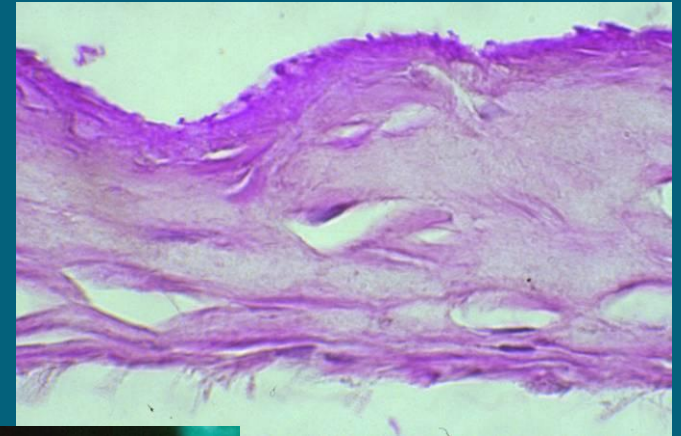
- Antiproteinases
- Topical autogenous serum
- Acetylcysteine 5-10%
- 0.17% sodium EDTA
- Topical tetracycline and doxycycline 0.1%
- Tetanus antitoxin
- Adequan 50 mg/ml

Keratomalacia

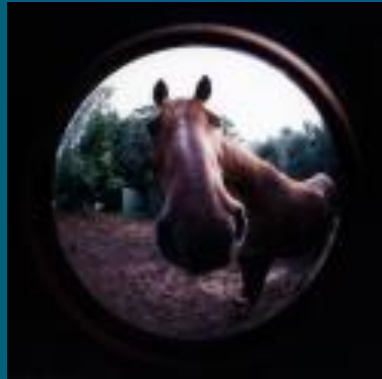


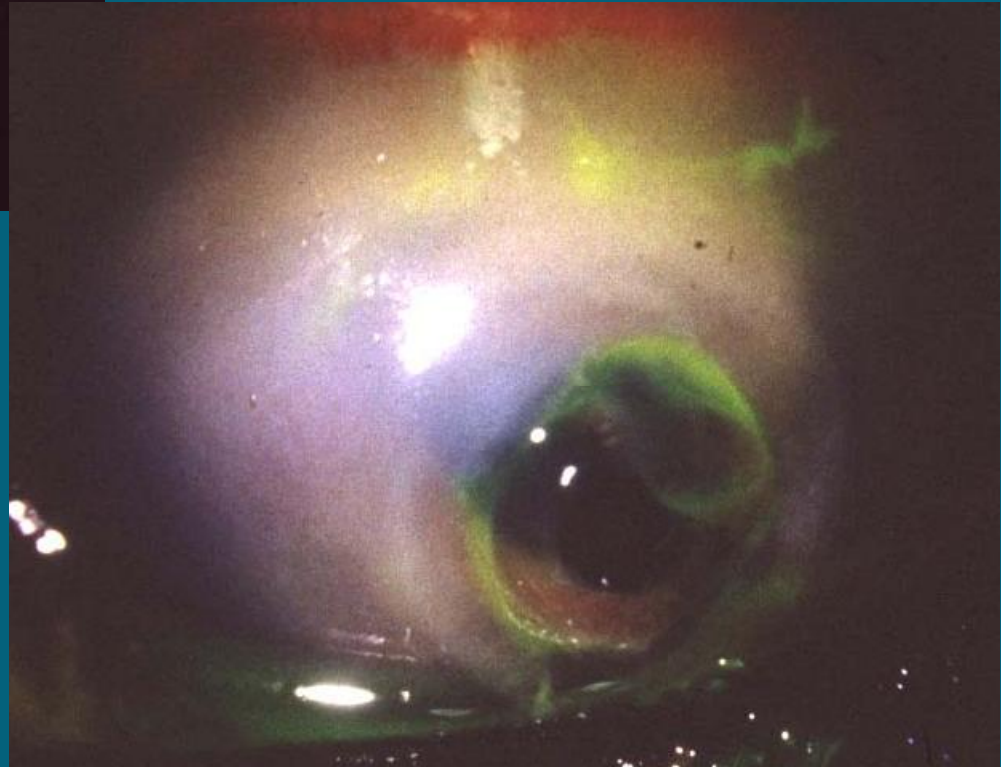
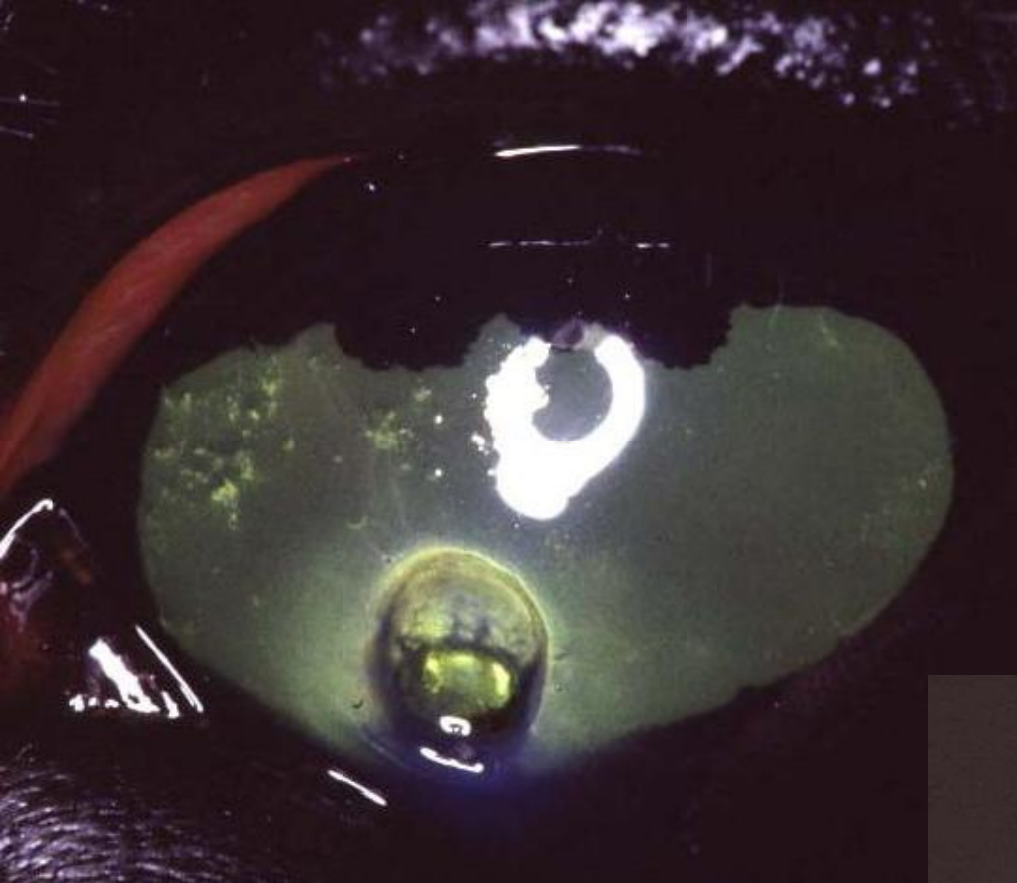
Amniotic membrane transplant

- Stroma w/ antiproteases
- Reduces melting & scarring



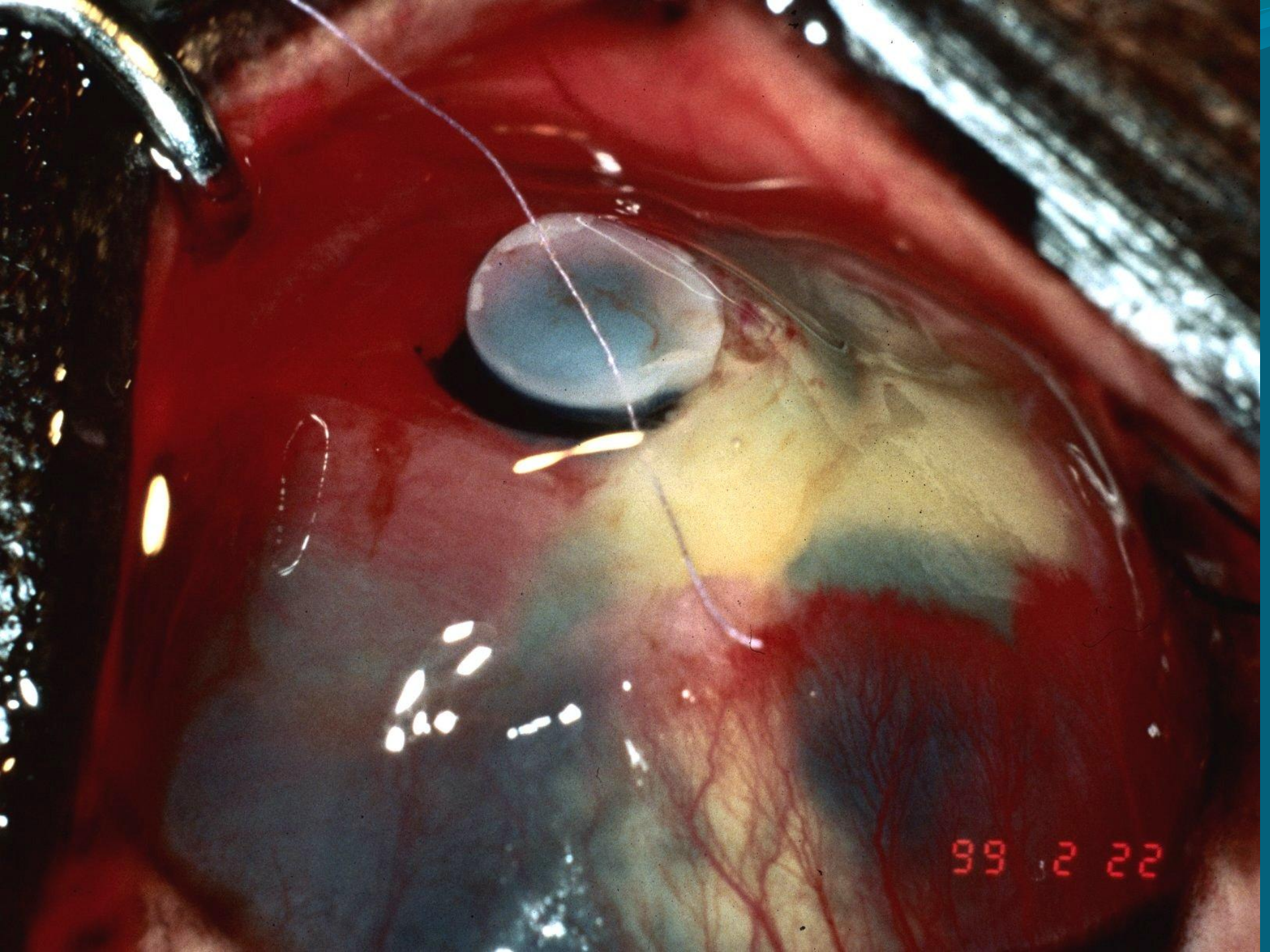




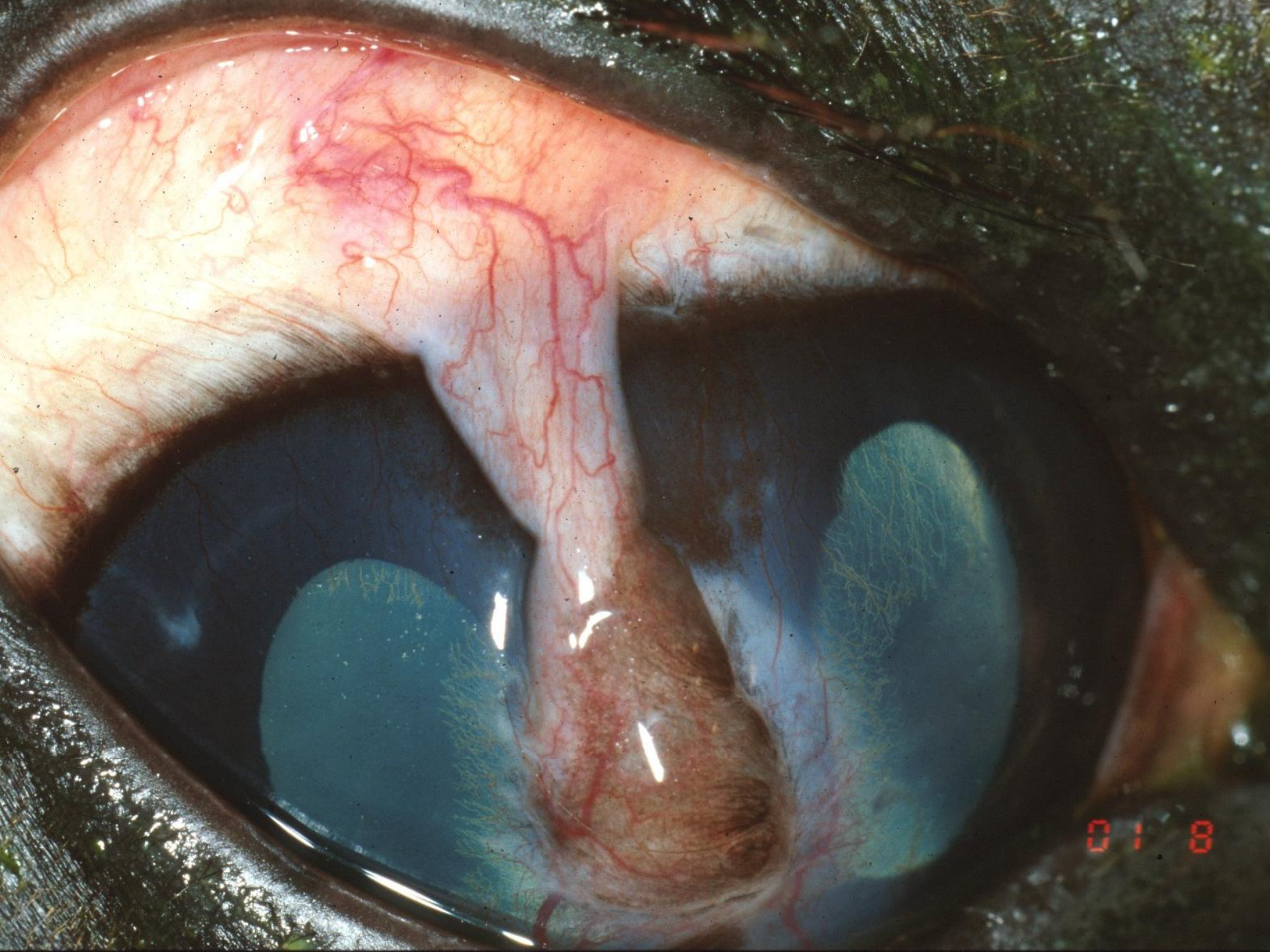


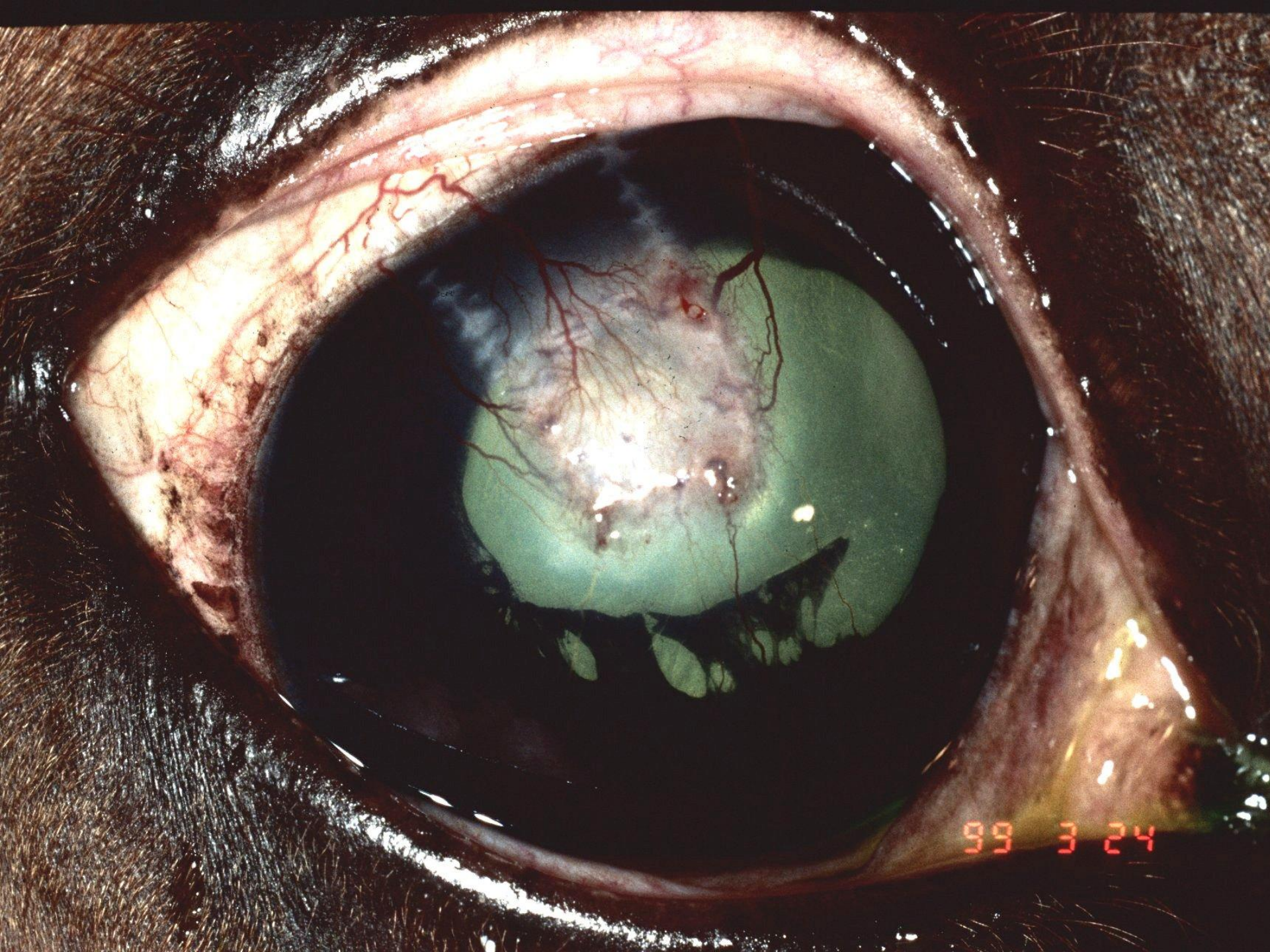
Full thickness iris prolapse (IP)

- Require direct suturing under general anesthesia
- PK/Conj graft
- Enucleation if:
 - No dazzle or indirect reflex
 - Corneal lesion >15mm in length
 - Laceration older than 2 weeks
 - IP due to melting ulcer



99 2 22





99 3 24

Keratomycosis: Fungal keratitis

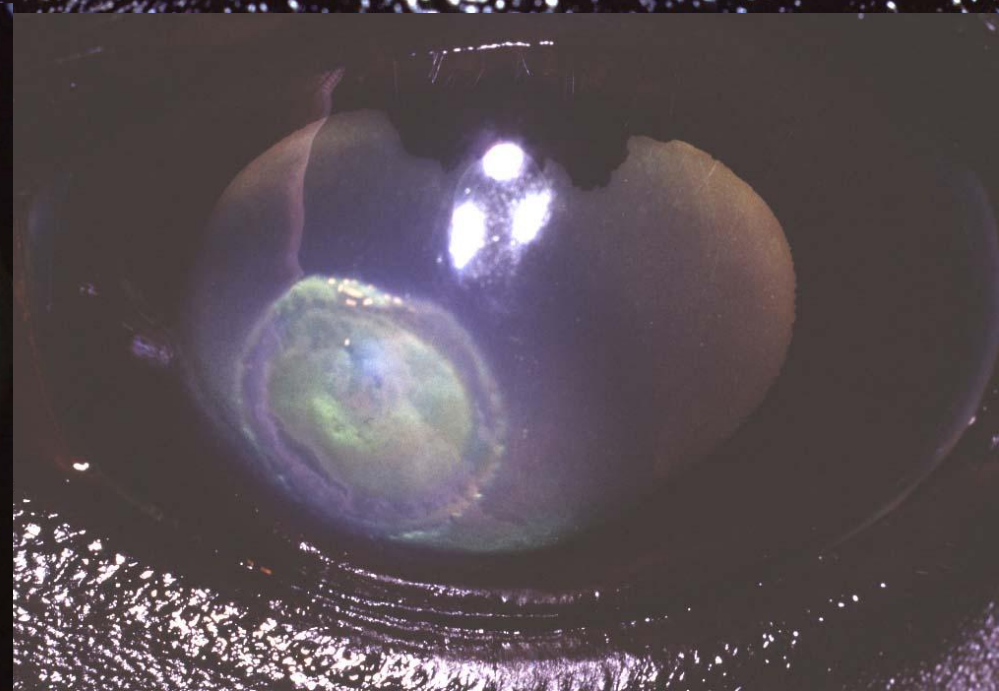
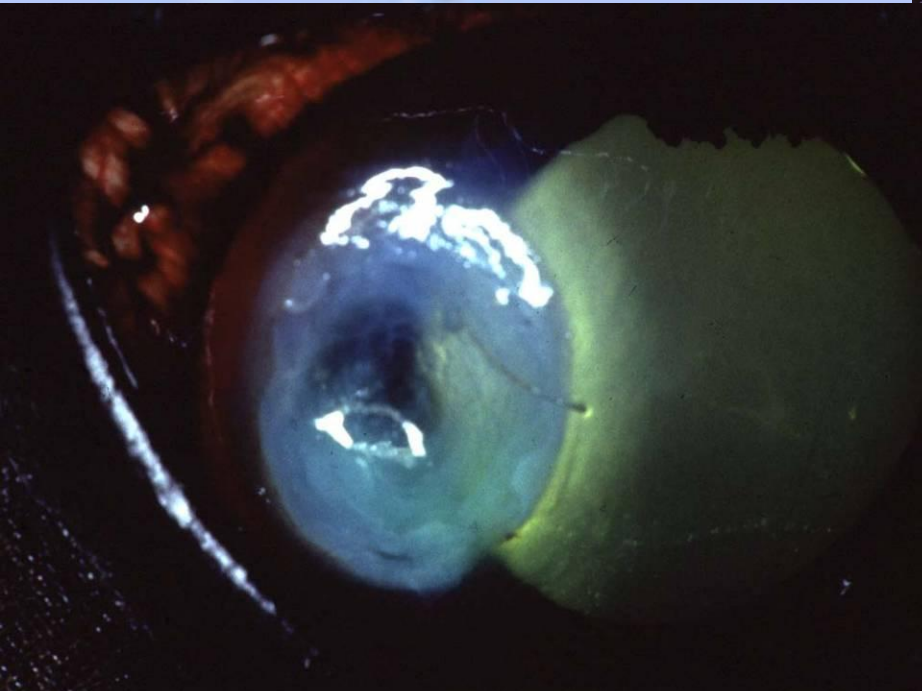


Keratomycosis-therapy:

- Debulk fungal plaque
- Anti-fungal therapy
- AB's (gent, tobra, flurq) & atropine
- Collagenolysis prevention
- Oral NSAID's
- Surgery: keratectomy + conjunctival graft

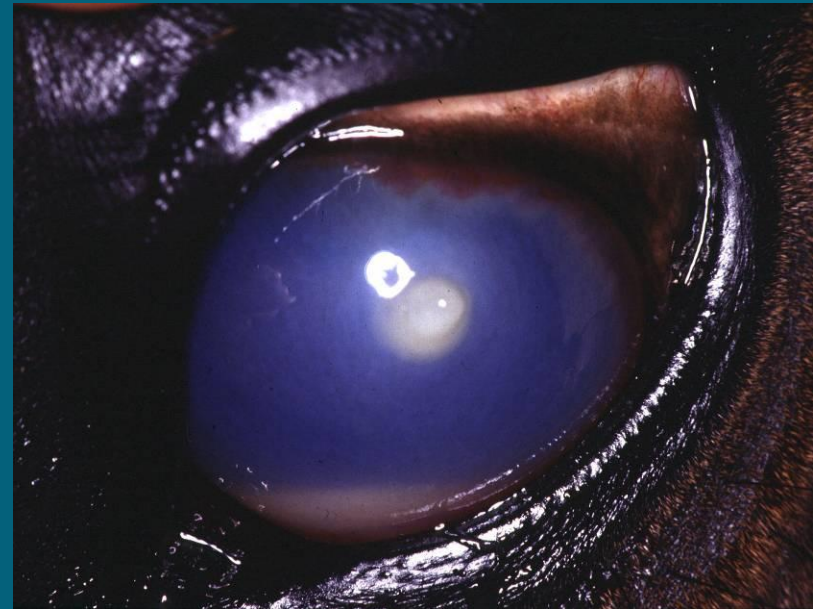
Keratomycosis: anti-fungal therapy:

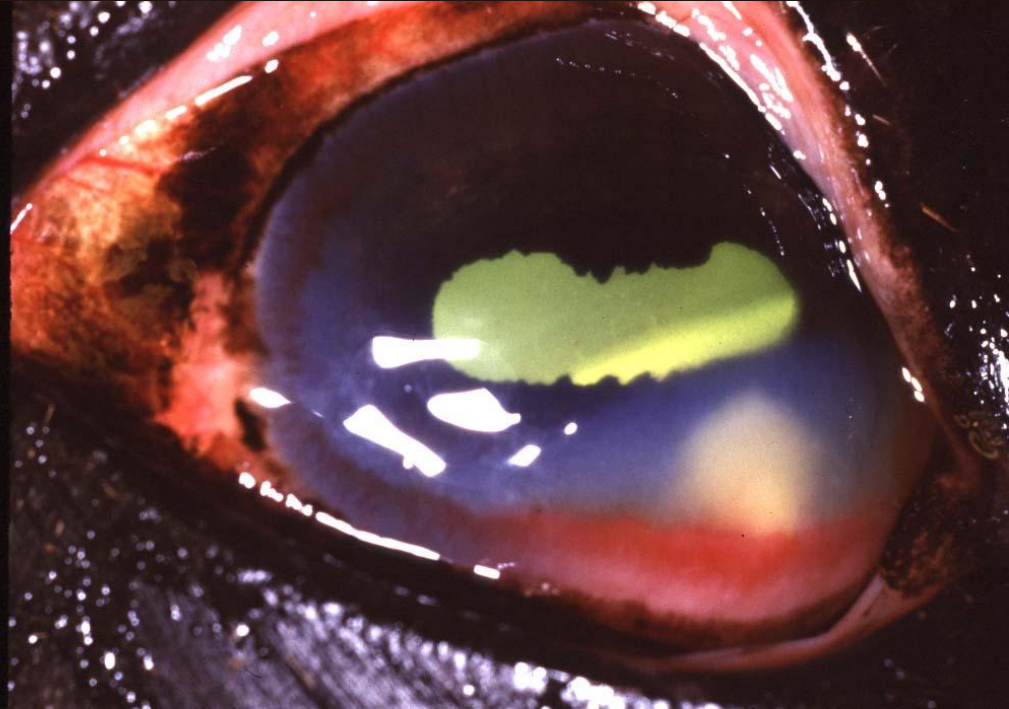
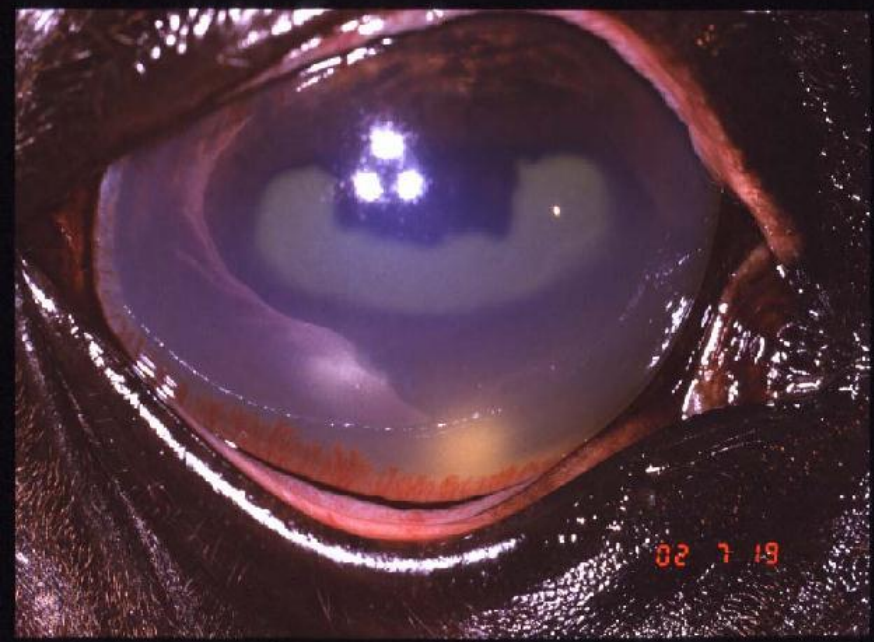
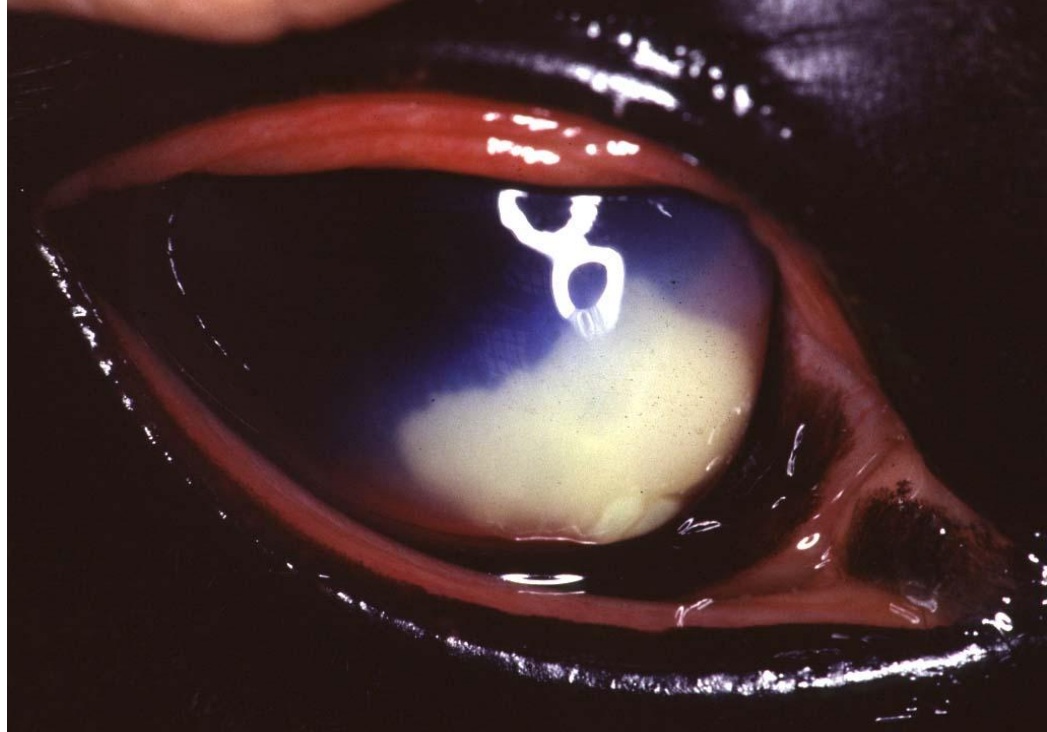
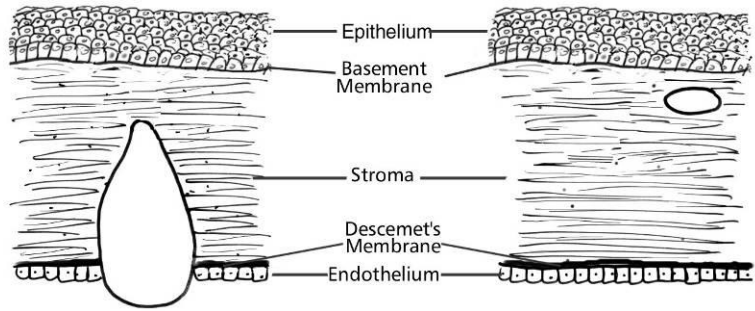
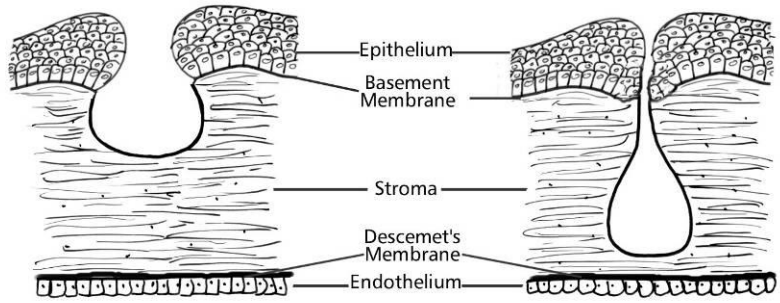
- Topical 5% natamycin QID
- 1% itraconazole + 30% DMSO
- 1% miconazole
- 2% fluconazole
- 1% voriconazole
- Silver sulfadiazine 1% (Candida spp.)
- 2% povidone iodine solution BID
- Oral fluconazole (2-4 mg/kg/day start dose)
- Oral itraconazole (3 mg/kg po BID)



Corneal stromal abscesses:

- “Micropuncture”
- Yellow to white opacity
- Bacterial or fungal
- Painful
- Miotic pupil
- Negative fluorescein retention
- Hypopyon, flare



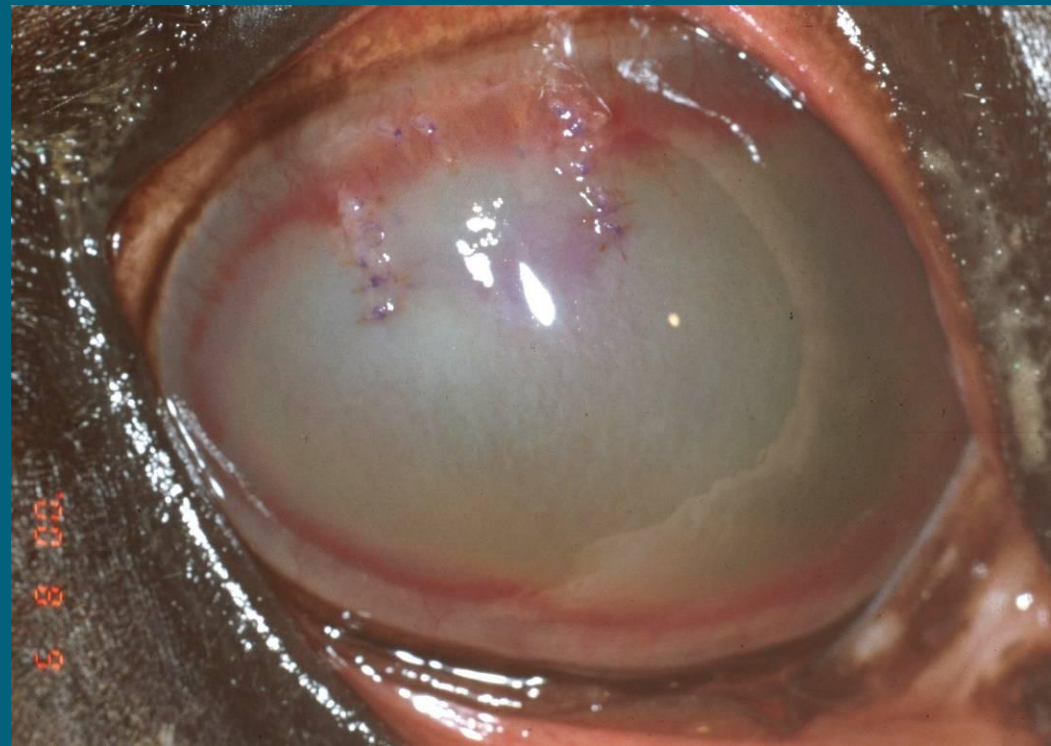
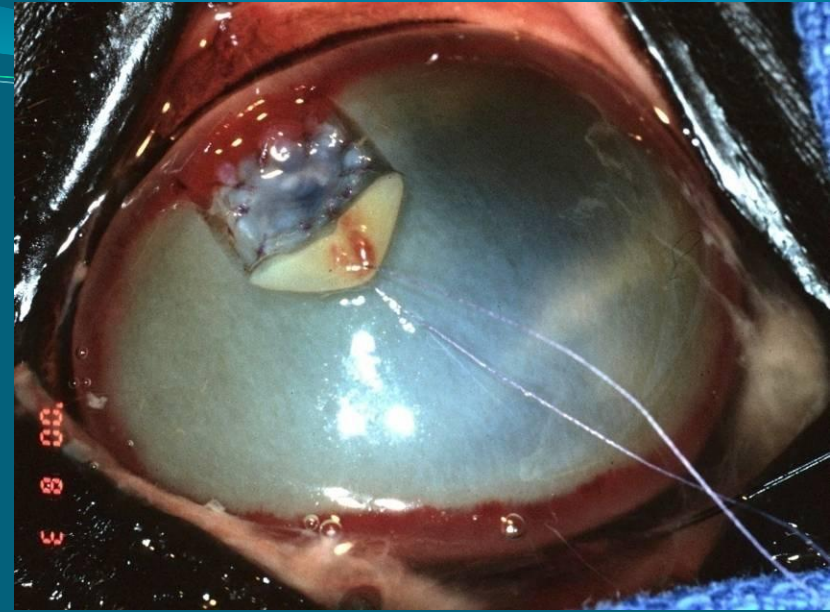
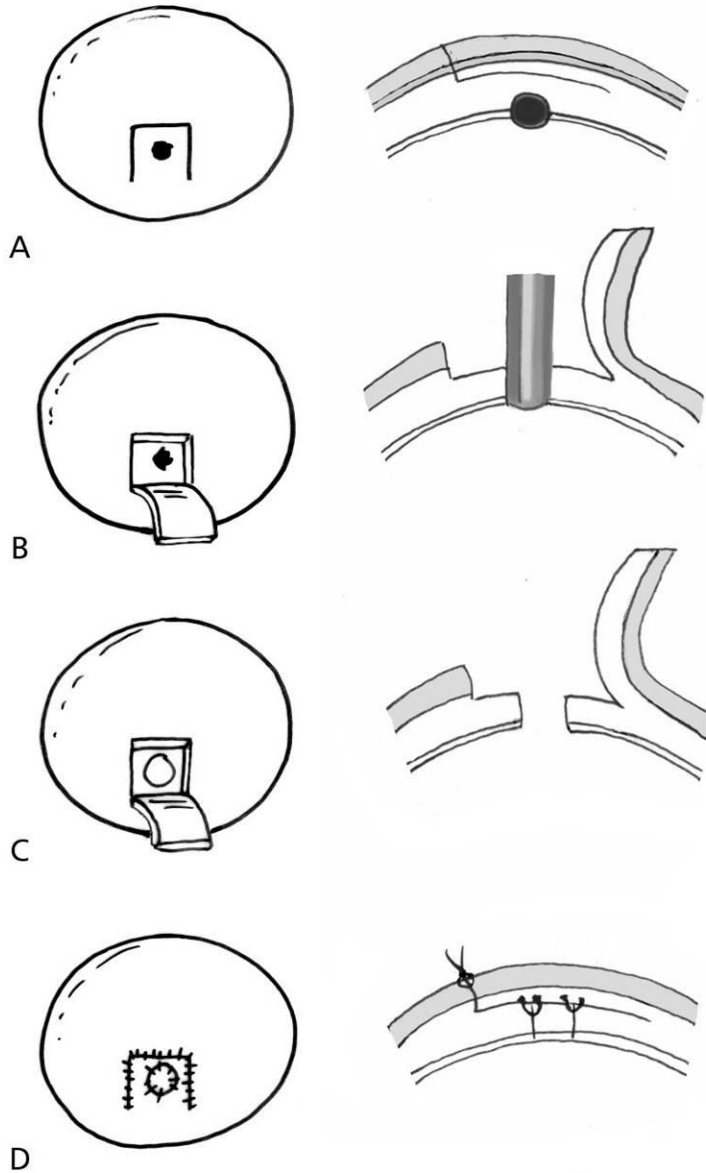


Corneal stromal abscesses:

- Keys:
 - Vascularization & uveitis control
 - Eliminating abscess
- Surgery: early intervention
 - Penetrating keratoplasty (PK)
 - Posterior lamellar keratoplasty (PLK),
Conjunctival flap (CF)



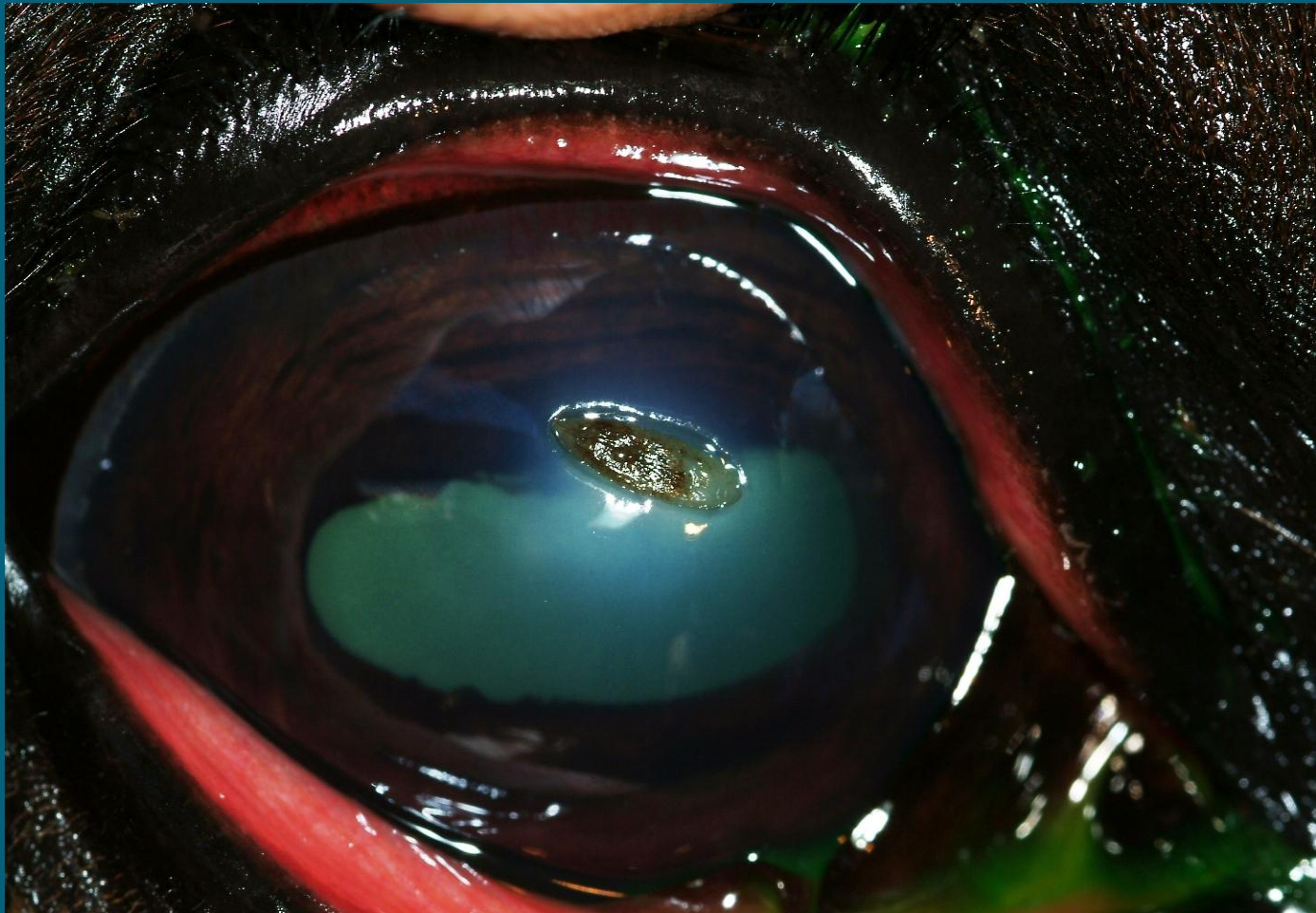
PLK



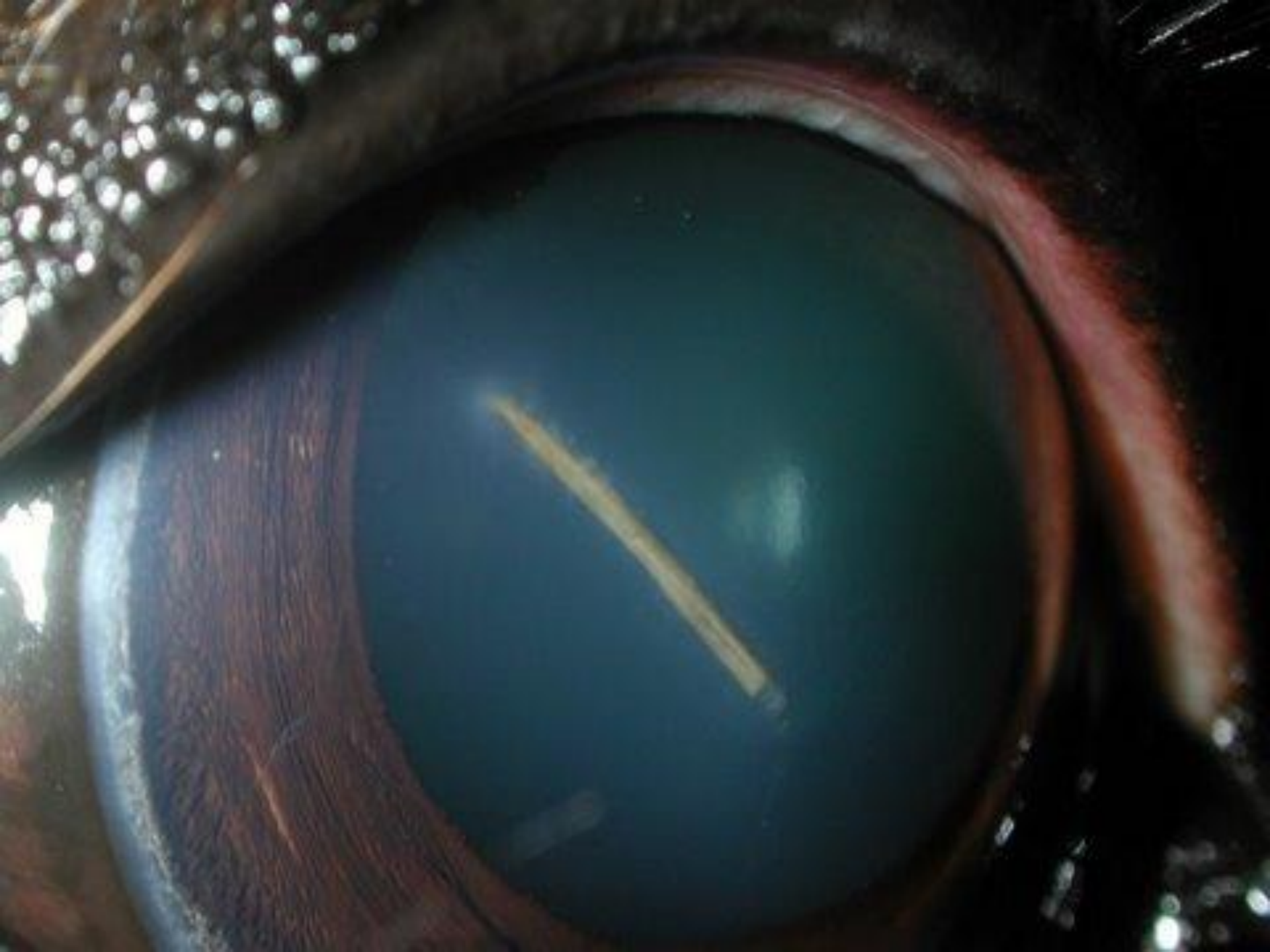


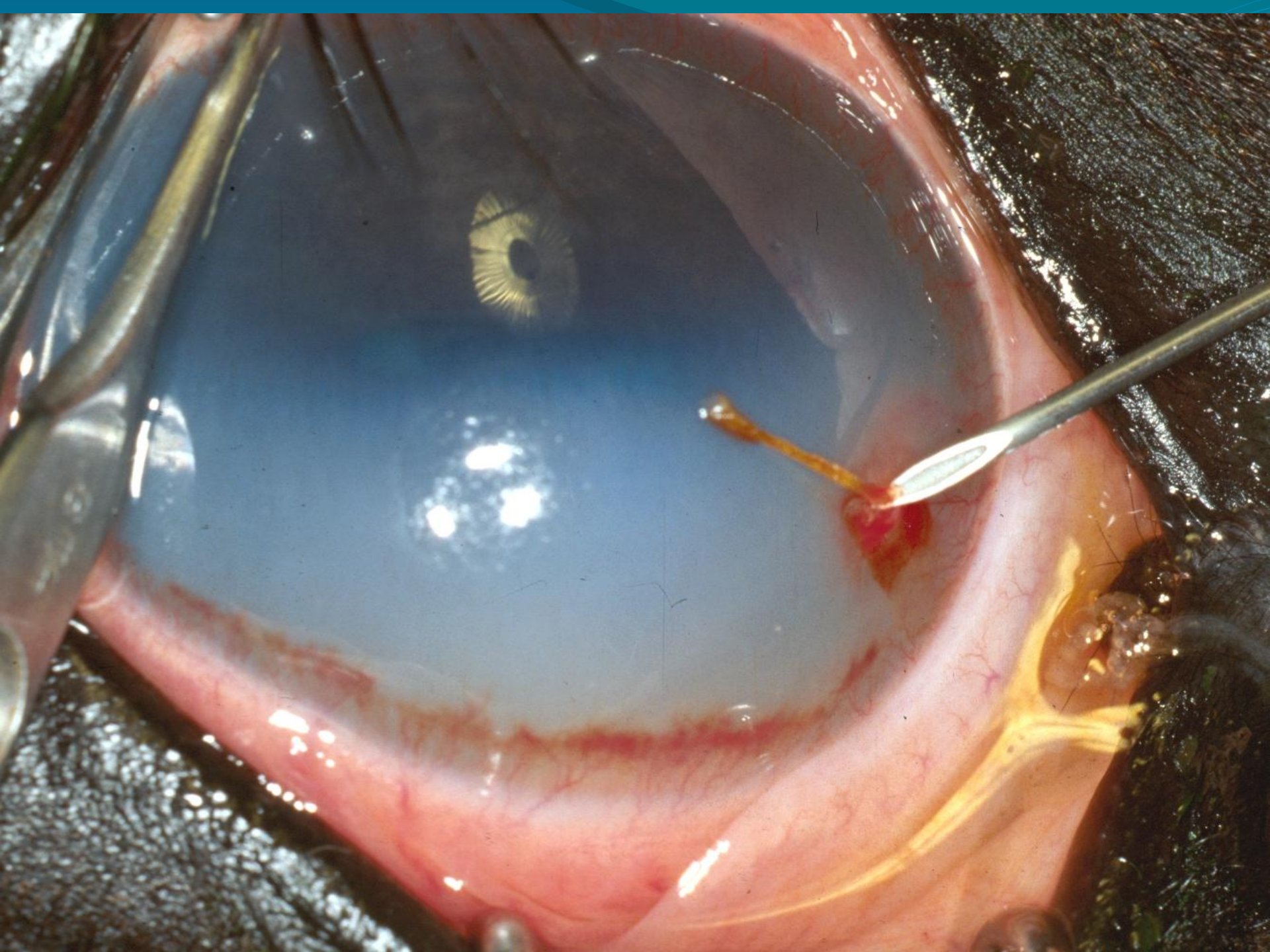


Corneal Foreign Body

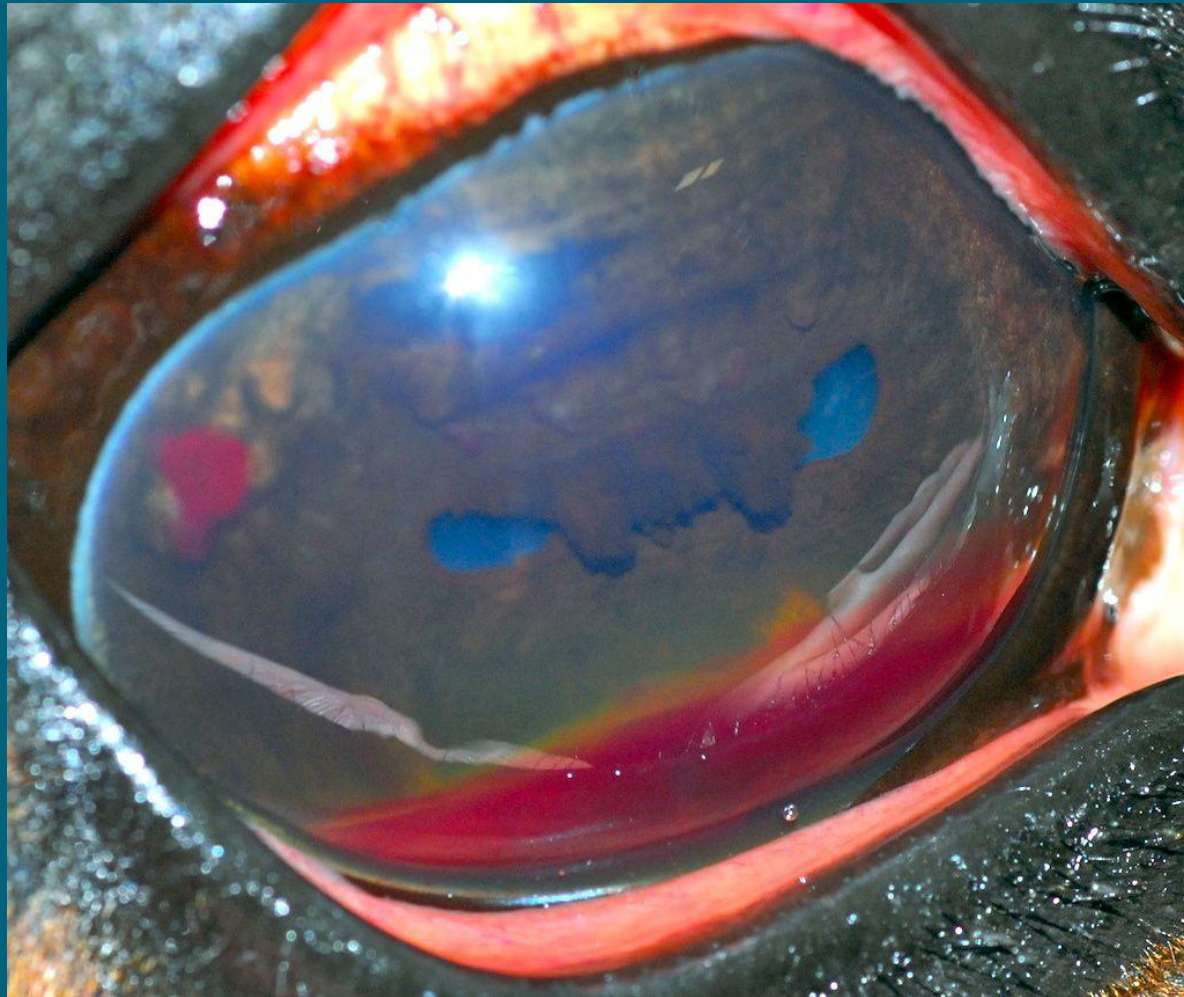






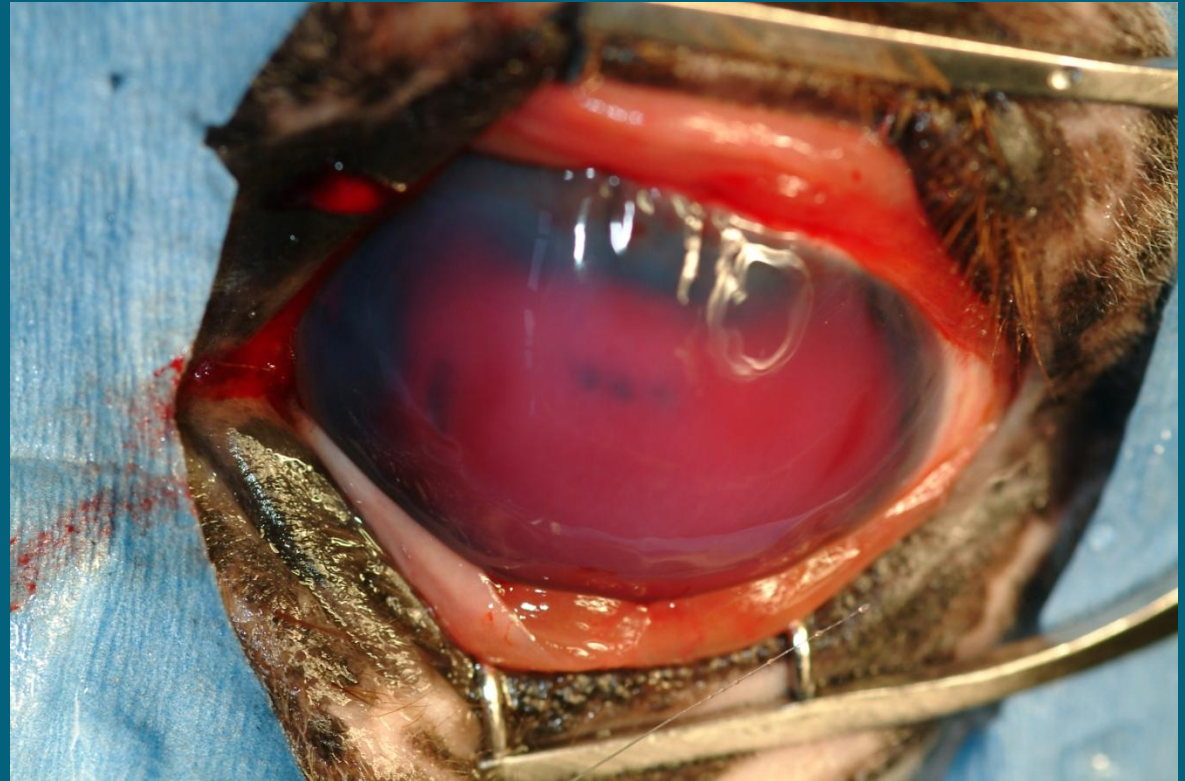


Traumatic uveitis/hyphema



Traumatic uveitis/hyphema

- Fluoro stain
- IOP check
- Ocular US



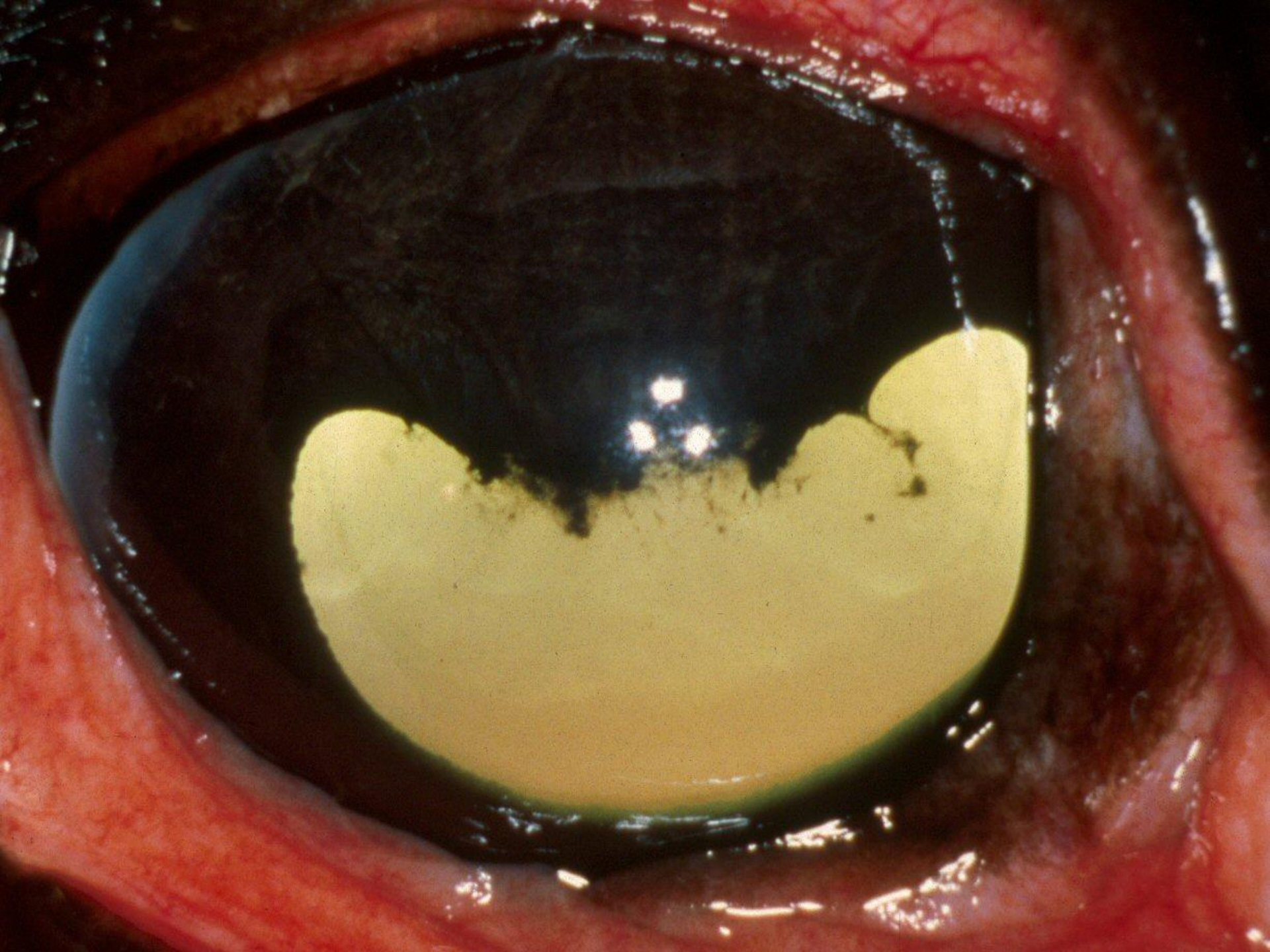
Hyphema Tx

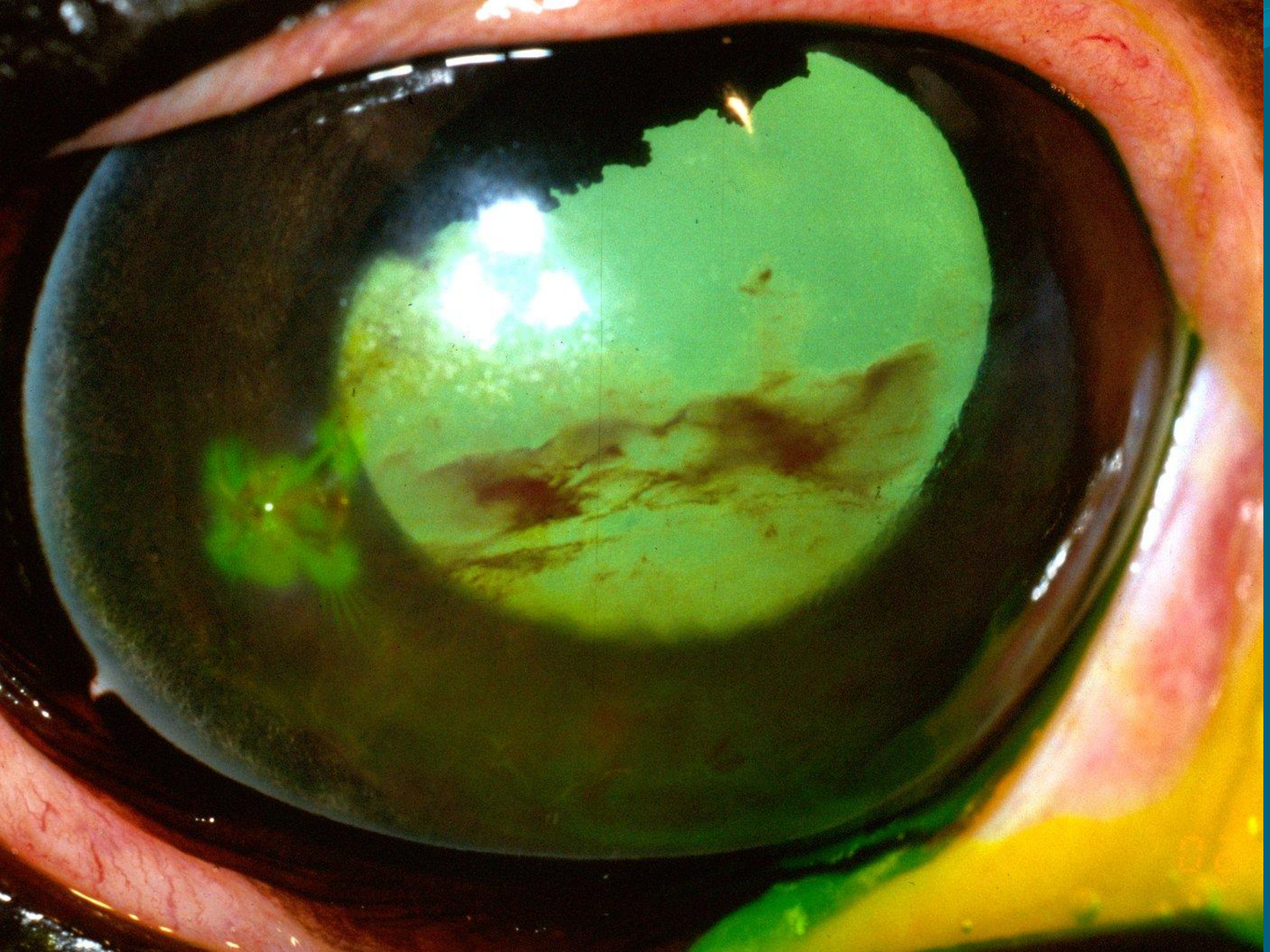
- Hyphema=uveitis
- Topical prednisolone acetate or dexamethasone
- Topical atropine
- Systemic NSAID's

Hyphema with fibrin

- Can consider intracameral TPA
- Avastin[®] (bevacizumab): anti-VEGF



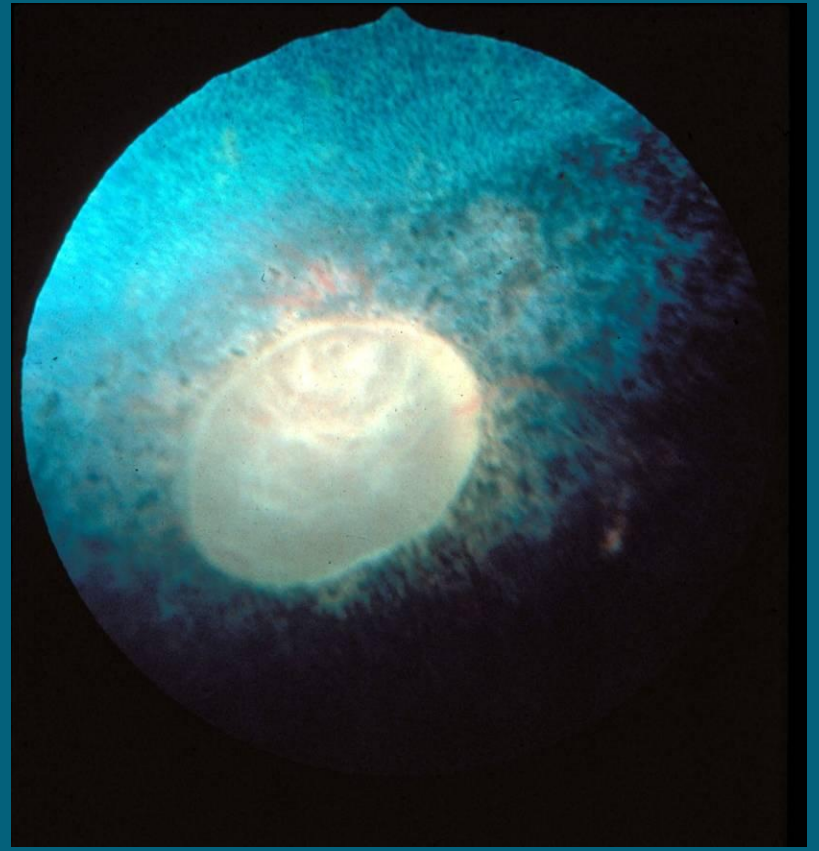
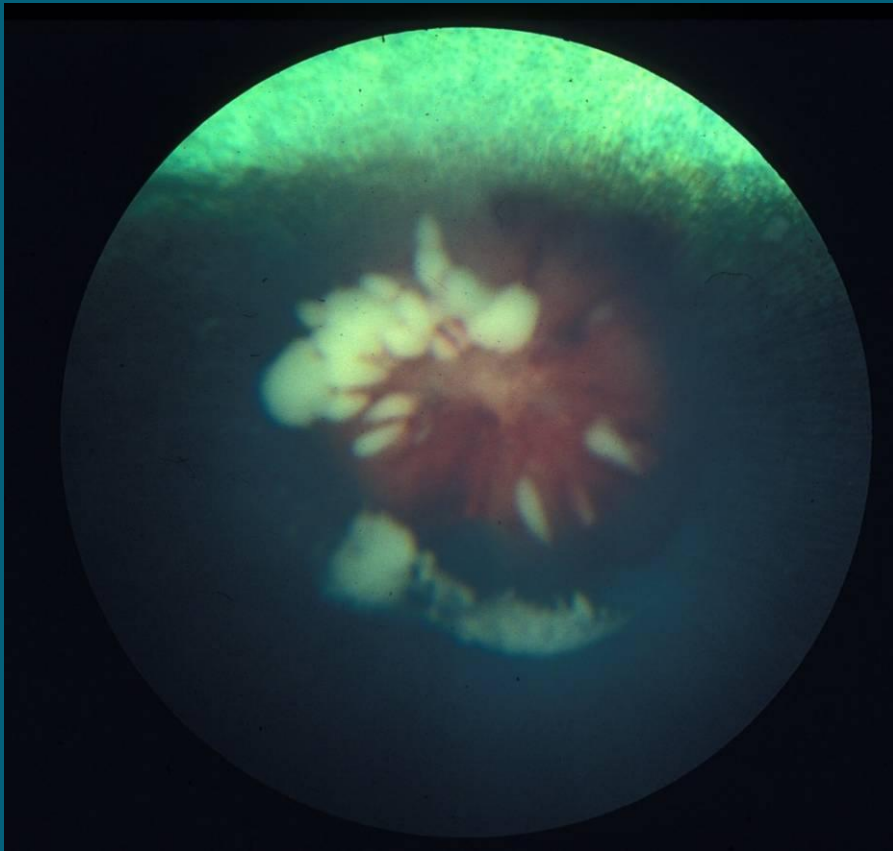




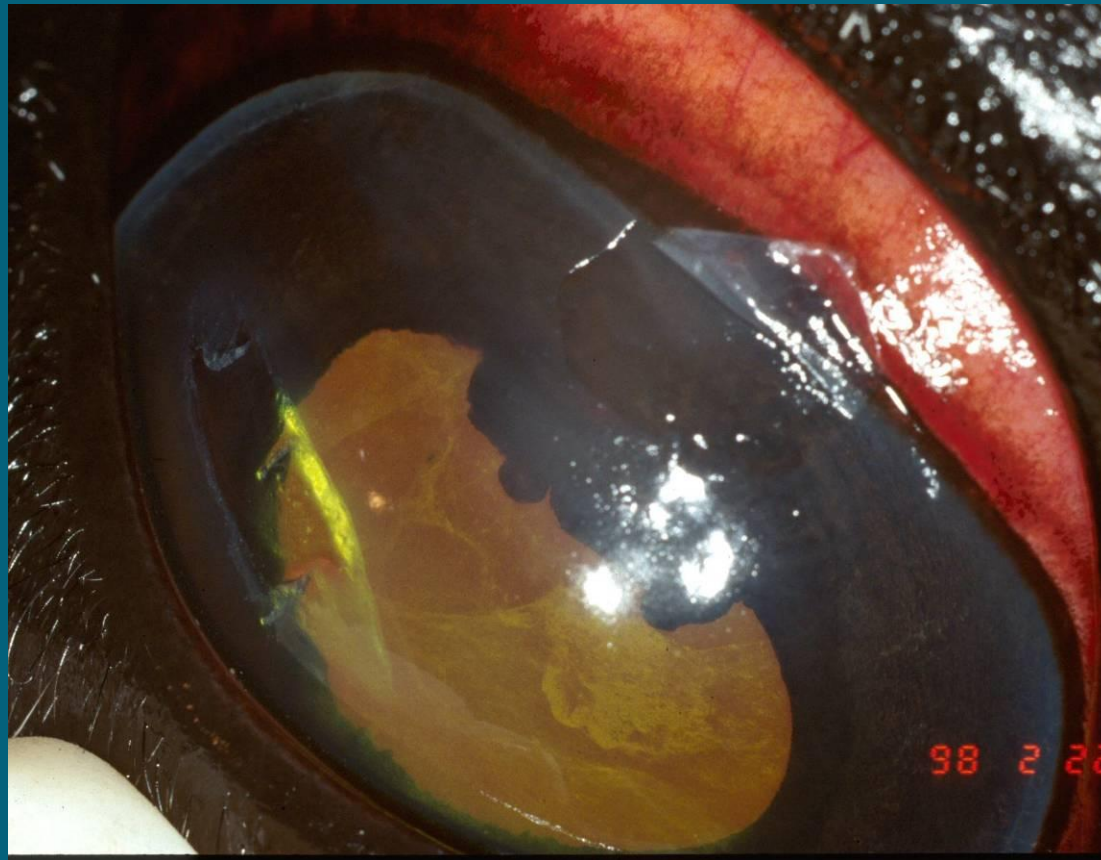
Traumatic Optic Neuropathy

- Traumatic head injury
- Neuropraxia of intracranial optic nerve
- Sudden unilateral or bilateral blindness
- Afferent PLR, dilated pupil
- Fundus changes:
 - Normal to hemorrhage
 - Optic nerve edema

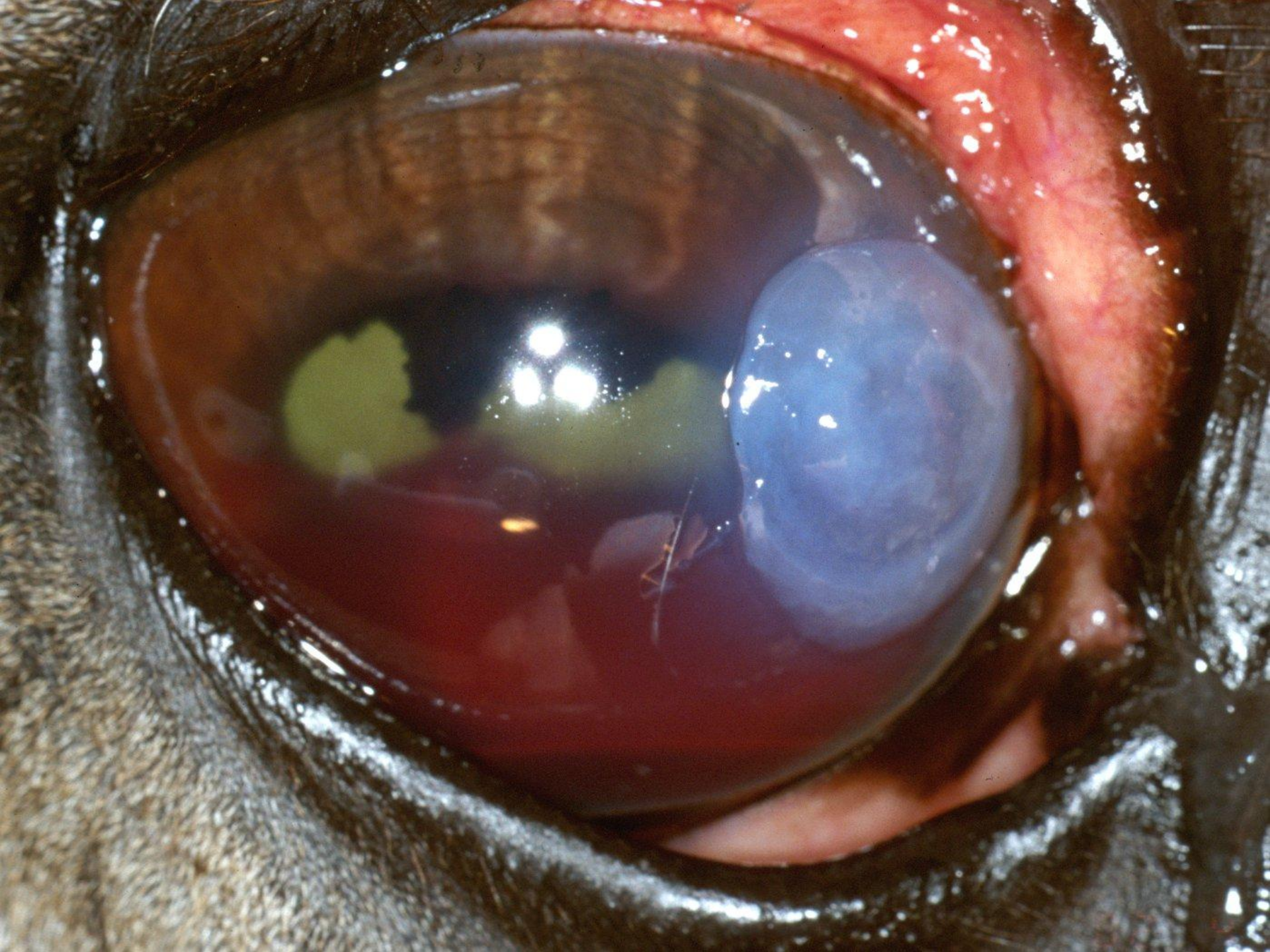
Fundus

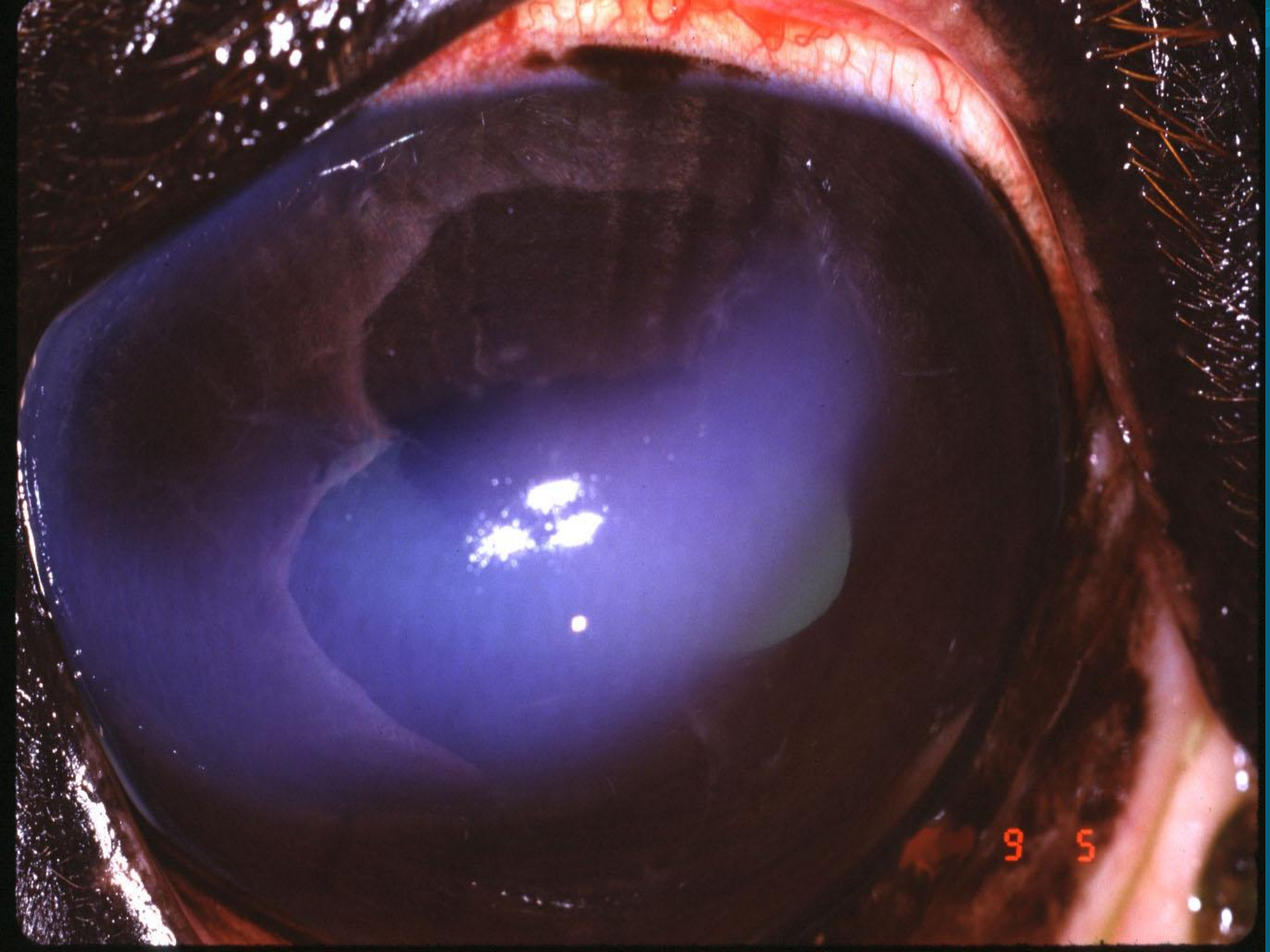


Clinical Cases









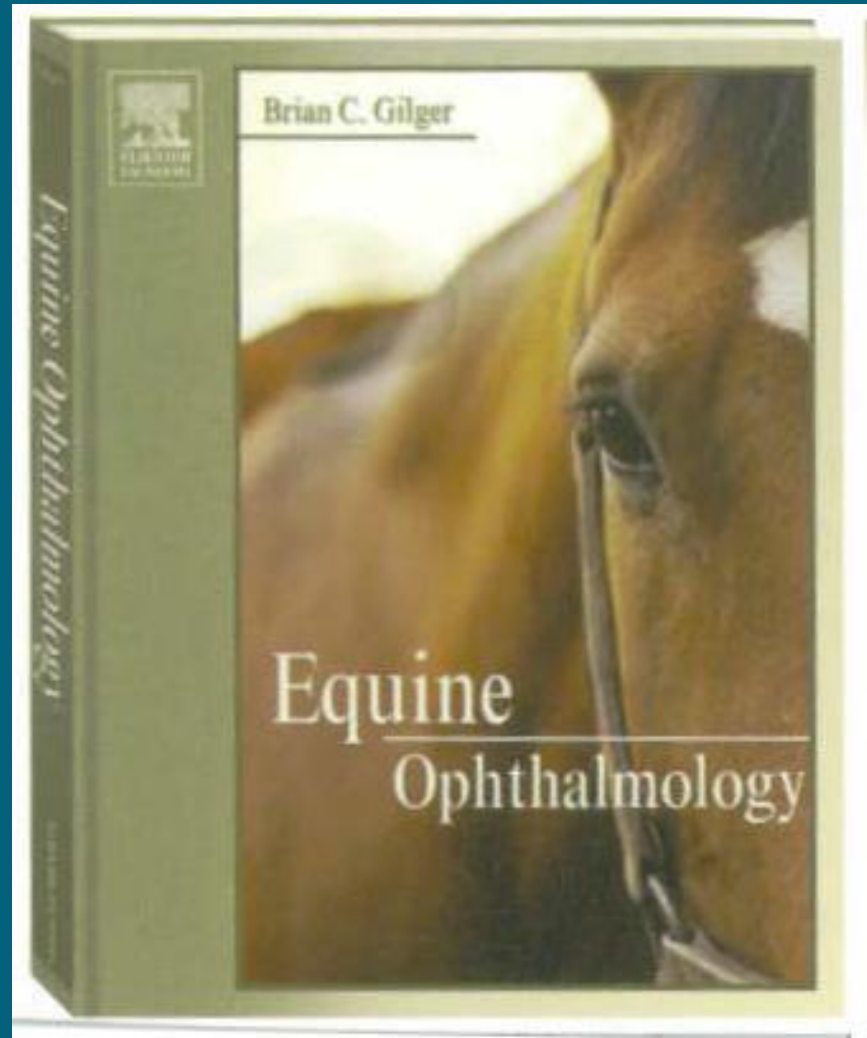
Subpalpebral lavage

- Mila eye lavage kit
- Sterile 12 gauge needle
- Silicone tubing (0.065 inch OD)
- www.milaint.com
- 859-371-1722

Recommended book

- Ophthalmology For The Equine Practitioner
- Dr. Dennis E. Brooks
- Made Easy Series
- Teton Newmedia
- 1-888-770-3165
- www.tetonnm.com
- www.veterinarywire.com

- Equine Ophthalmology
- Brian C. Gilger
- Elsevier Saunders



References

- Millichamp NJ: Ocular Trauma. *Vet Clin North Am Equine Pract* 8:521-536, 1992
- Schaer BD: Ophthalmic Emergencies in Horses. *Vet Clin Equine* 23:49-65, 2007.

Acknowledgments

- Wedgewood pharmacy
- Dr. Dennis E. Brooks
- Dr. Brian C. Gilger
- Dr. Ann Gratzek
- Dr. David Wilke
- RDVM'S



