Ocular Manifestations of Systemic Diseases in Small Animals

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The eye has limited ways to react to injury.

Red
Loses transparency
Vascularizes
Pigments or depigments

Septicemia (bacterial)

- anterior uveitis to endophthalmitis
- embolization of bacteria
- circulating Ag-Ab complexes

Blepharitis

Immune mediated
Infectious
Hormonal

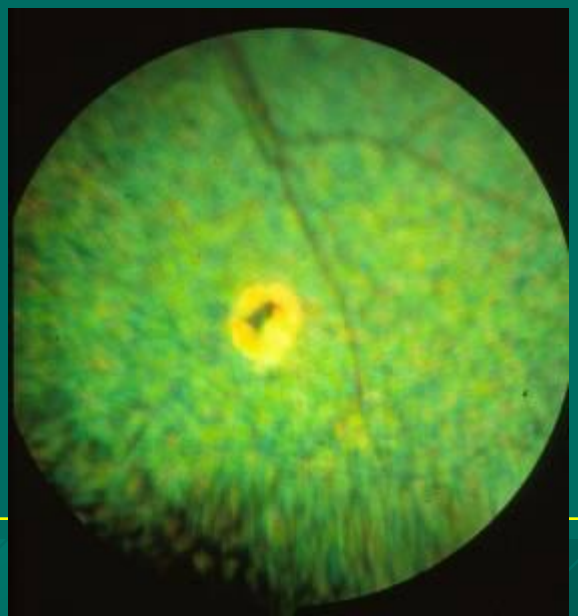

SLE


KCS and Hypothyroidism


Zn

Canine distemper virus

- ocular signs:
  - ocular discharge, KCS
  - ± corneal ulcers
  - optic neuritis (blindness)
  - Chorioretinitis- “gold-medallion”



Distemper

- conjunctival epithelial scrapings
  - ± intracellular inclusion bodies

Infectious canine hepatitis

- canine adenovirus I (CAV-I), “blue eye”
- ocular signs: 7 days PI or post vaccination
  - uveitis and corneal edema
  - edema is due to an Arthus reaction to viral replication in the endothelium
  - ocular signs often unilateral and temporary (1-2 weeks)
- severe cases: Afghans!
  - bullous keratopathy
  - secondary glaucoma

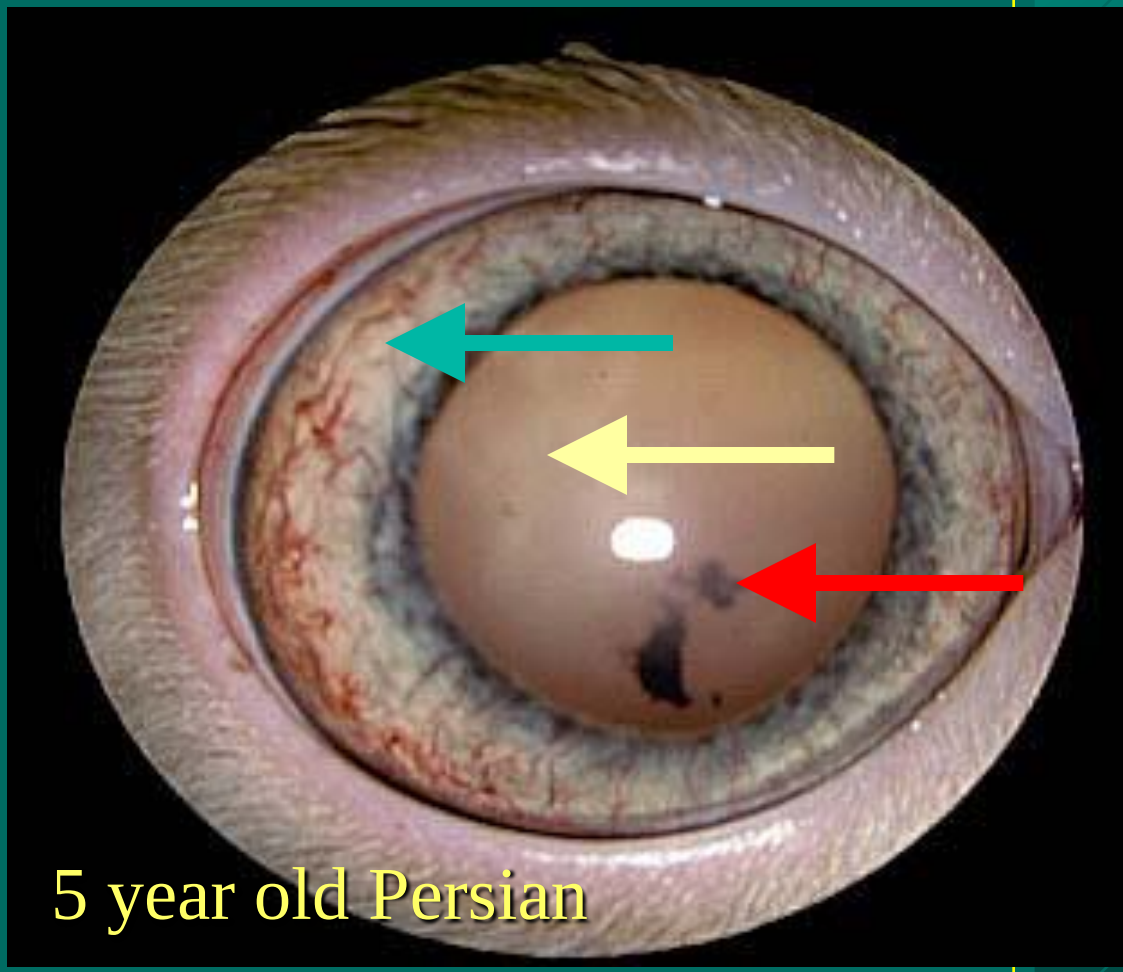
Feline Ocular *Bartonellosis*

- *Bartonella hensela:* gram negative rods

•Iritis

•KPs

•White vitreous exudate causing lack of tapetal reflex

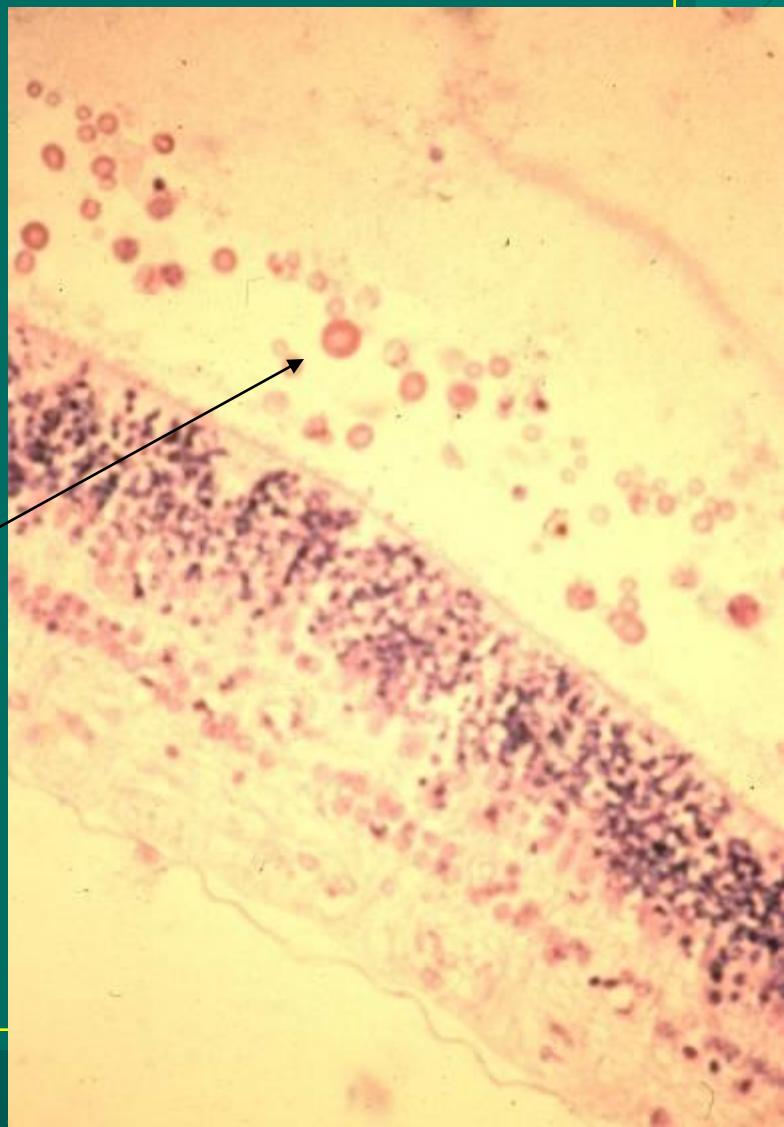


Feline Ocular *Bartonellosis*

- Large white fibrinous exudate in anterior chamber

Cryptococcus neoformans

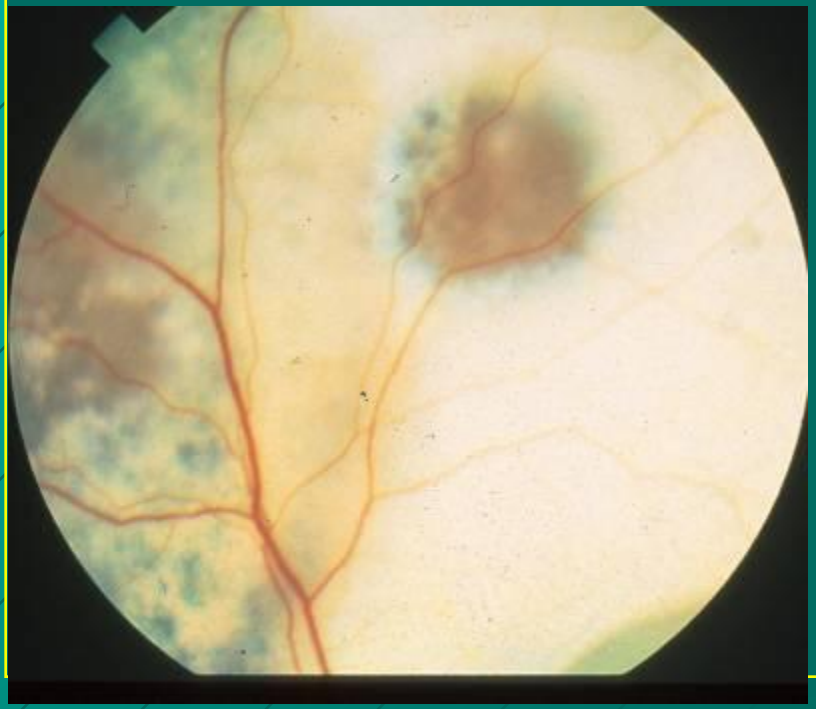
- ocular signs
  - cats more often affected than dogs
  - optic neuritis, dilated pupils, exudative granulomatous chorioretinitis
- systemic signs
  - CNS, skin and respiratory lesions



Cryptococcosis-diagnosis

- ocular extension from vascular*, respiratory, or CNS systems
- may identify organism in vitreal or CSF aspirates

*most common

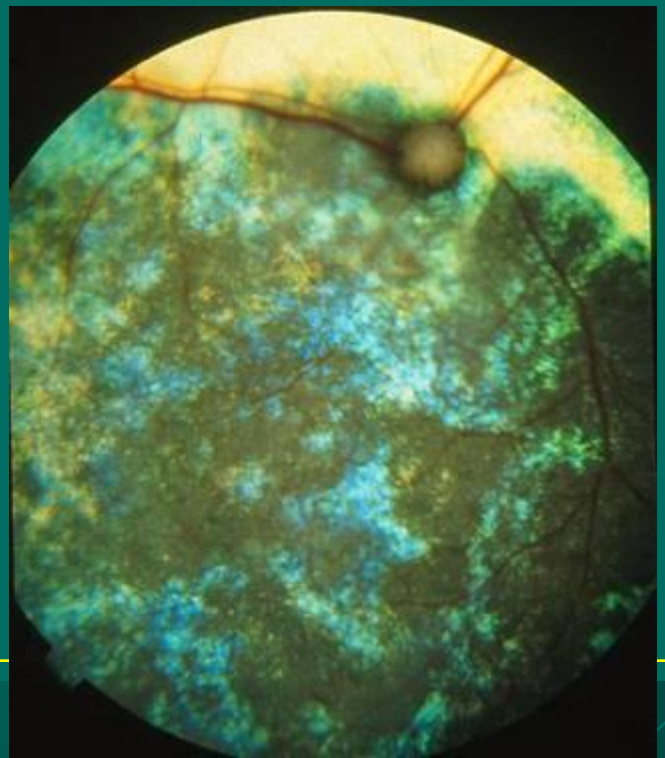


Histoplasma capsulatum

- Uncommon; affects cats > dogs
- usually ocular extension from a respiratory infection
- granulomatous choroiditis with retinal detachment

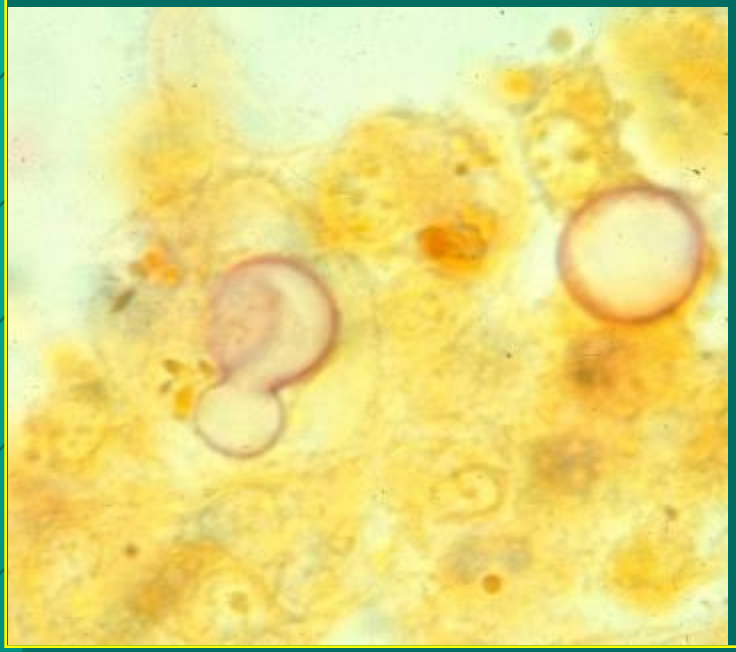
Active

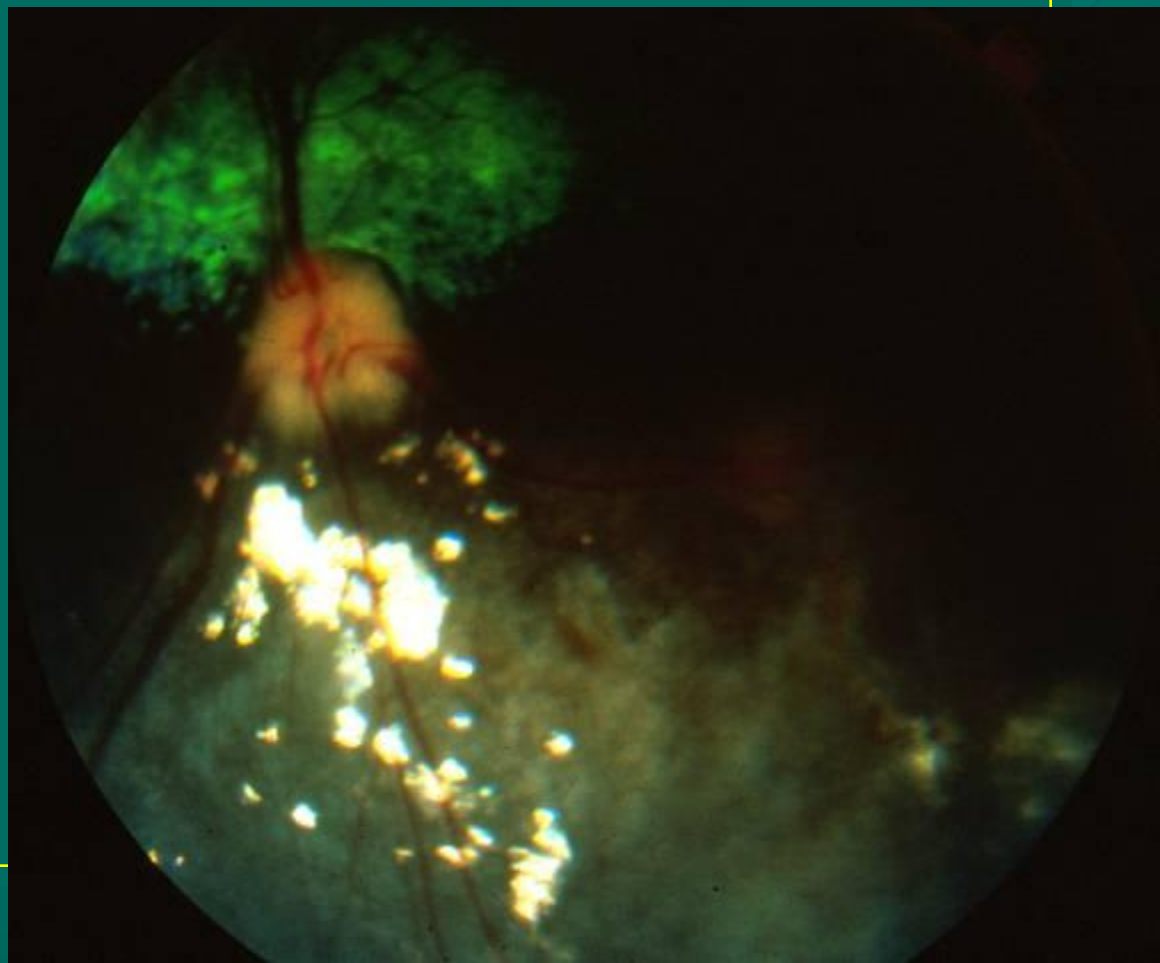
Inactive



Blastomyces dermatitidis

- affects dogs > cats
- respiratory, skin, bone, testicles, CNS lesions
- ~ 43% develop ocular signs
  - unilateral or bilateral



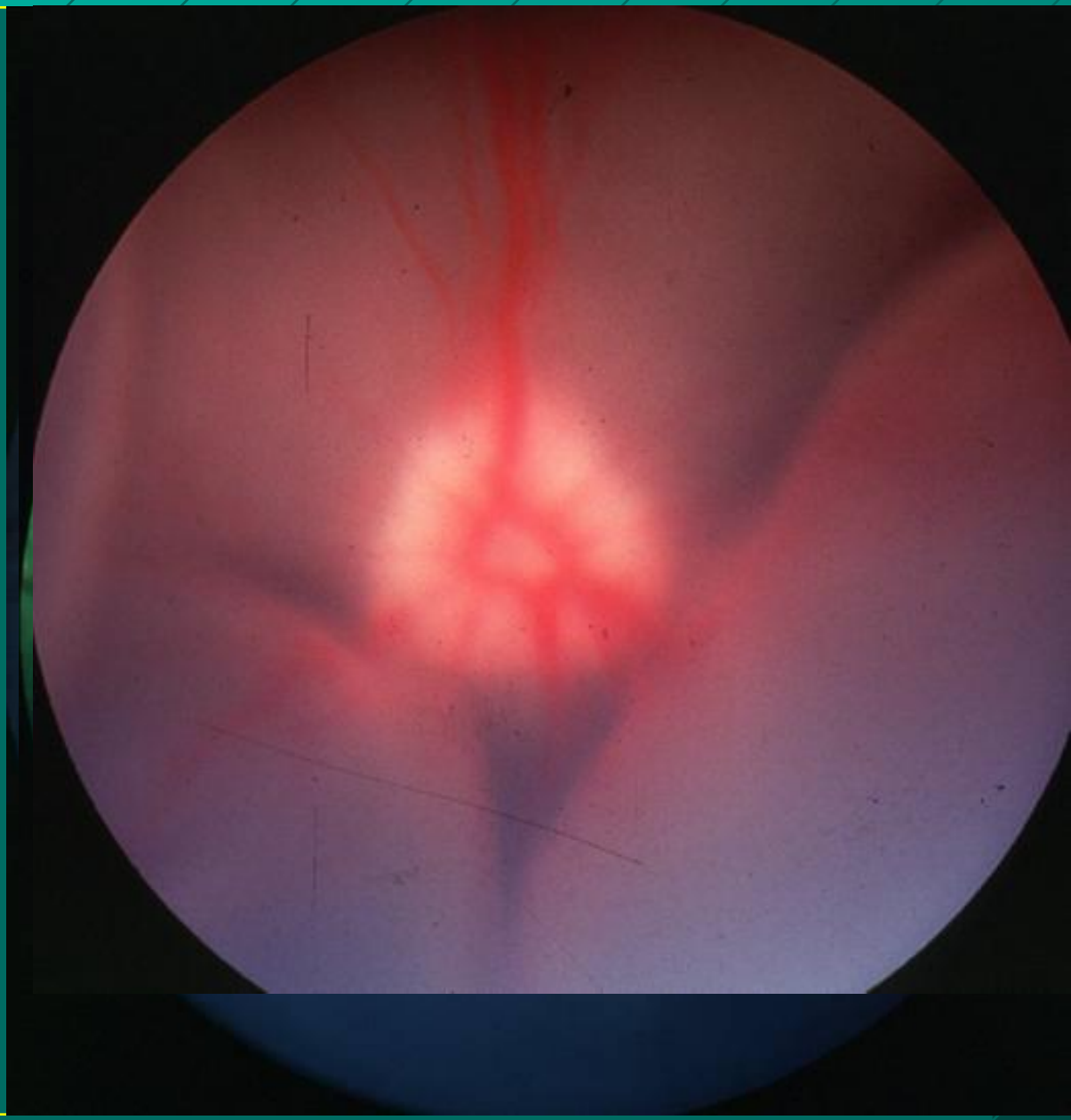


Blastomycosis

- ocular signs
  - corneal edema/vascularization
  - granulomatous chorioretinitis
  - retinal detachment
  - secondary glaucoma
  - optic neuritis

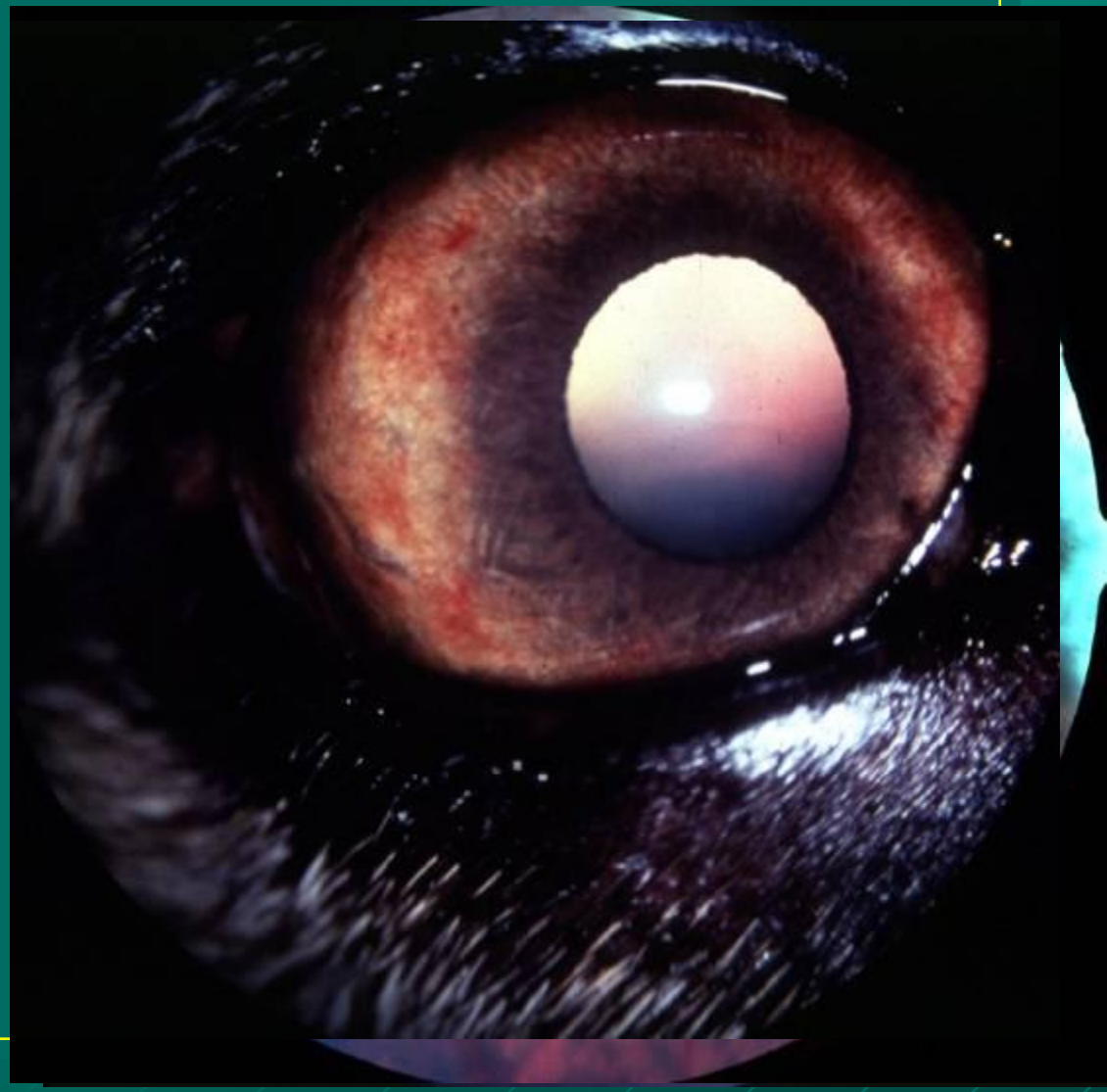
Ehrlichia canis

- acute, subclinical, and chronic phases
- replicates in mononuclears
- incites a vasculitis in target tissues
- tortuous vessels & grey perivascular foci
- chorioretinitis & retinal vasculitis, optic neuritis, retinal detachment/hemorrhages
- uveitis, hyphema



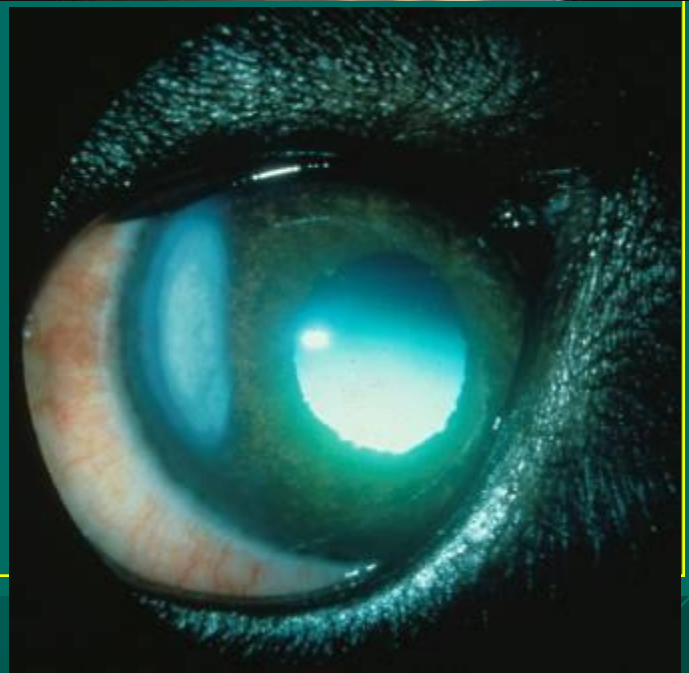
Rocky mountain spotted fever

- *Rickettsia rickettsii*
- multifocal vasculitis
- uveitis, conjunctivitis, retinal vasculitis/perivasculitis



Hyperlipidemia

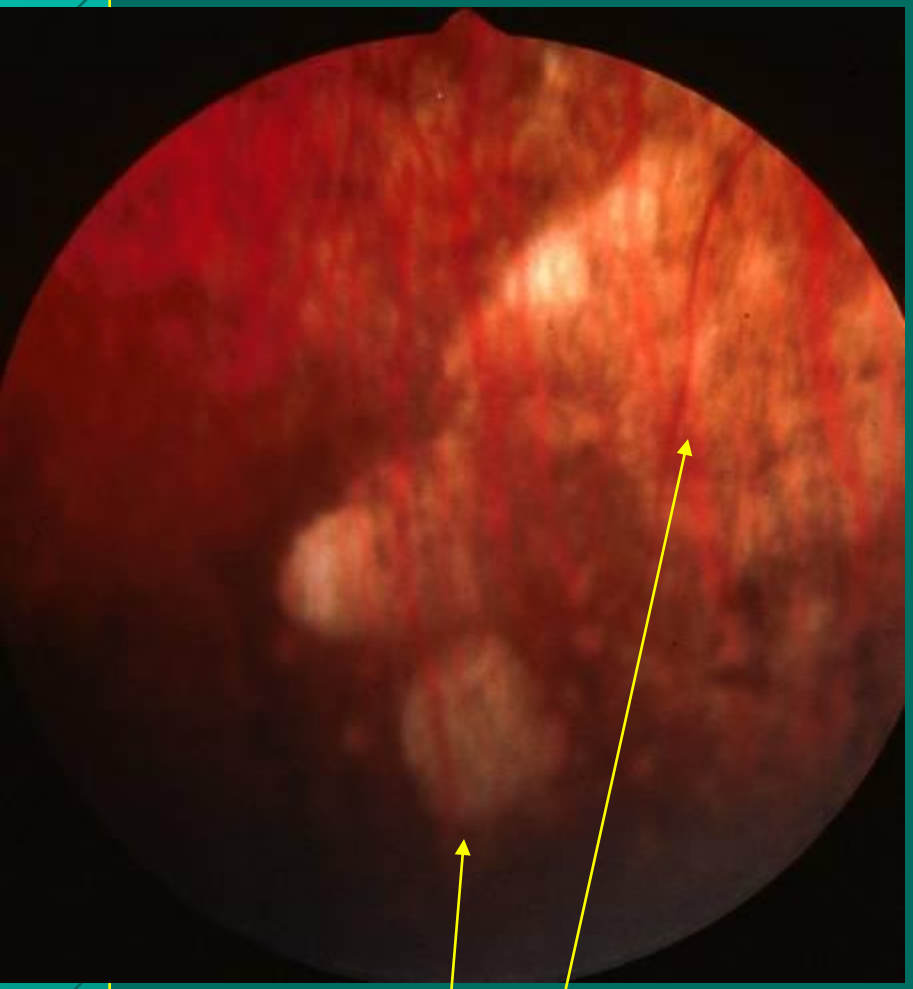
- primary
  - hyperlipoproteinemia in Miniature Schnauzers
- secondary: diabetes, hypothyroidism, pancreatitis, Cushing's, liver disease
- increased triglycerides
  - lipid-laden aqueous humor
  - lipemia retinalis
- increased cholesterol
  - lipid keratopathy
  - atherosclerosis



Hyphema and lipid in AC

Uveodermatological syndrome

- spontaneous autoimmune disease against melanin containing tissues
- Akitas, OESD, Golden Retrievers, Samoyeds, Irish Setters
- panuveitis, retinal detachments
- poliosis/vitiligo- nose, muzzle

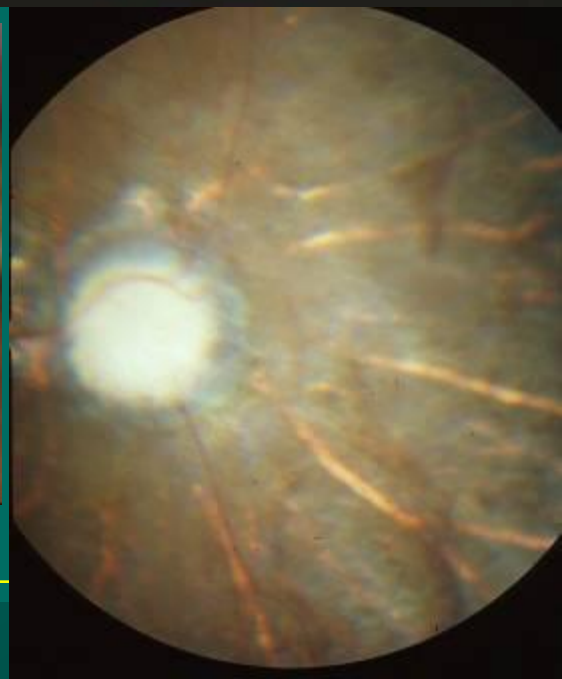


Retinitis

Healed

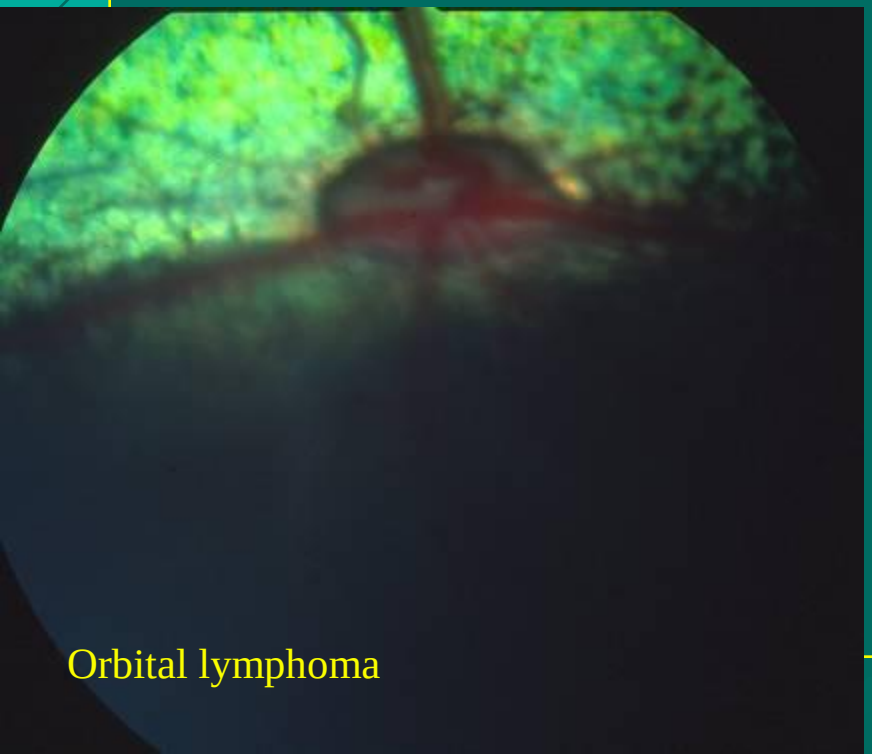
GME and Reticulosis

- usually presents with CNS signs
- acute blindness with fixed dilated pupils
- optic neuritis (absent if retrobulbar) leading to optic nerve atrophy
- peripapillary retinitis with RD
- Etiology: inflammation/neoplasia

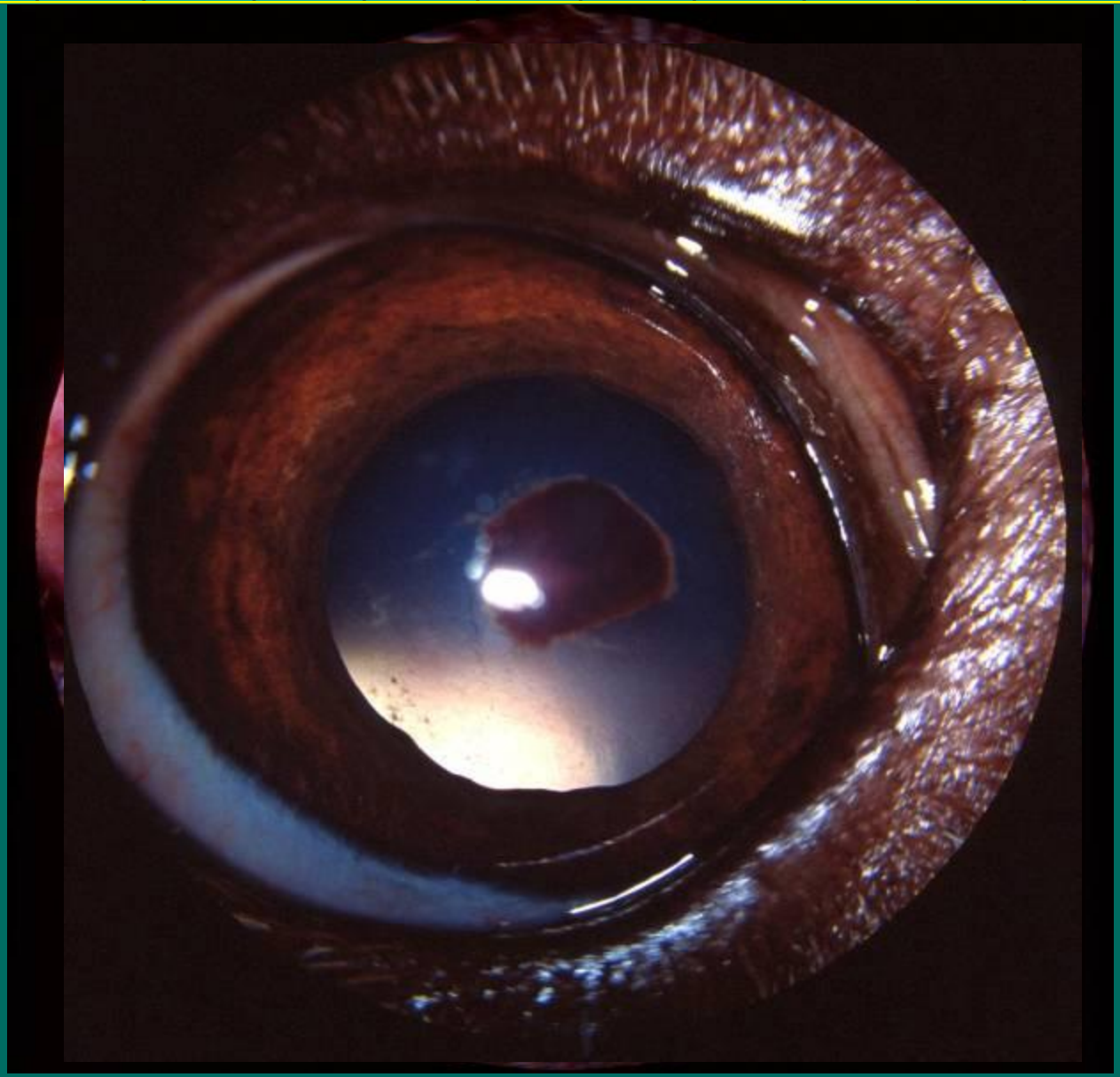


Lymphosarcoma

- ocular metastasis is common
- uveitis, hyphema, pseudohypopyon
- tortuous retinal vessels, perivascular cuffing, retinal detachment or neoplastic infiltration



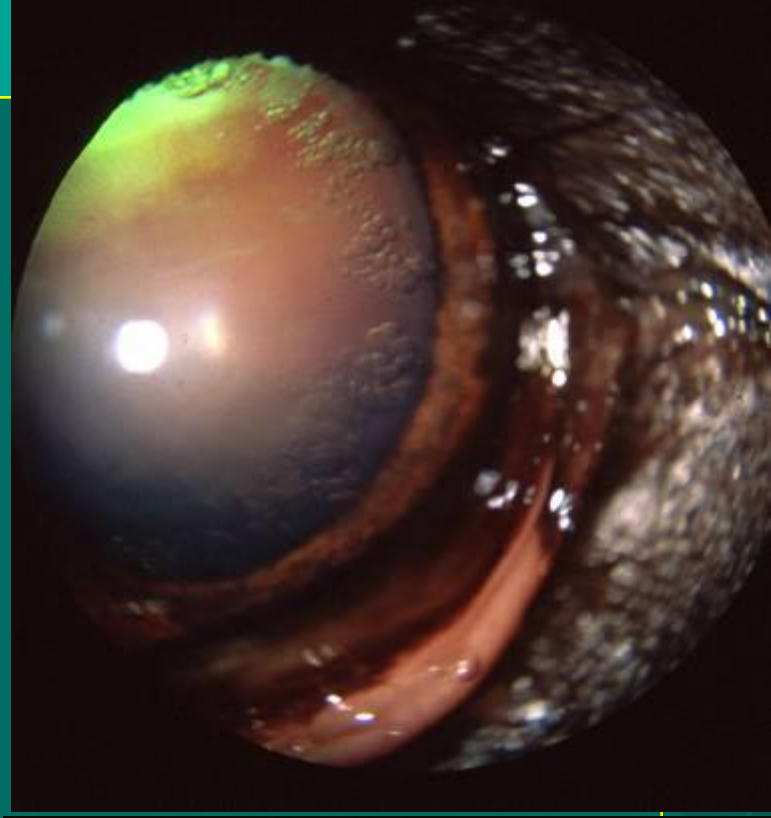
Orbital lymphoma

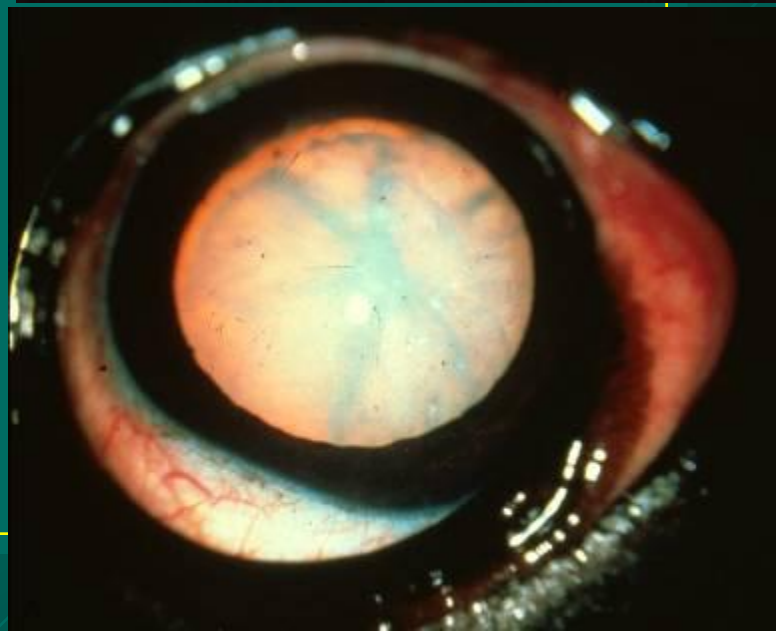


Diabetes mellitus

- cataracts develop in dogs>>cats
- sorbitol draws water into the lens causing lens fiber swelling & rupture
- early cataractous changes appear as vacuoles in the equatorial lens cortex
- cataracts rapidly progress to maturity

- 28% lower STT; 37% lower corneal sensation; 58% lower TFBUT



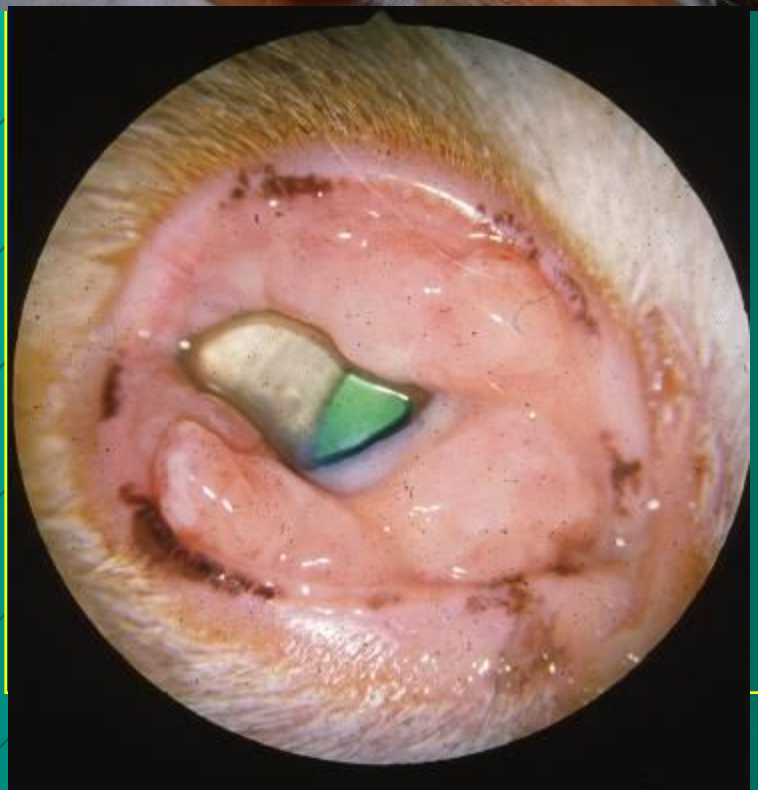


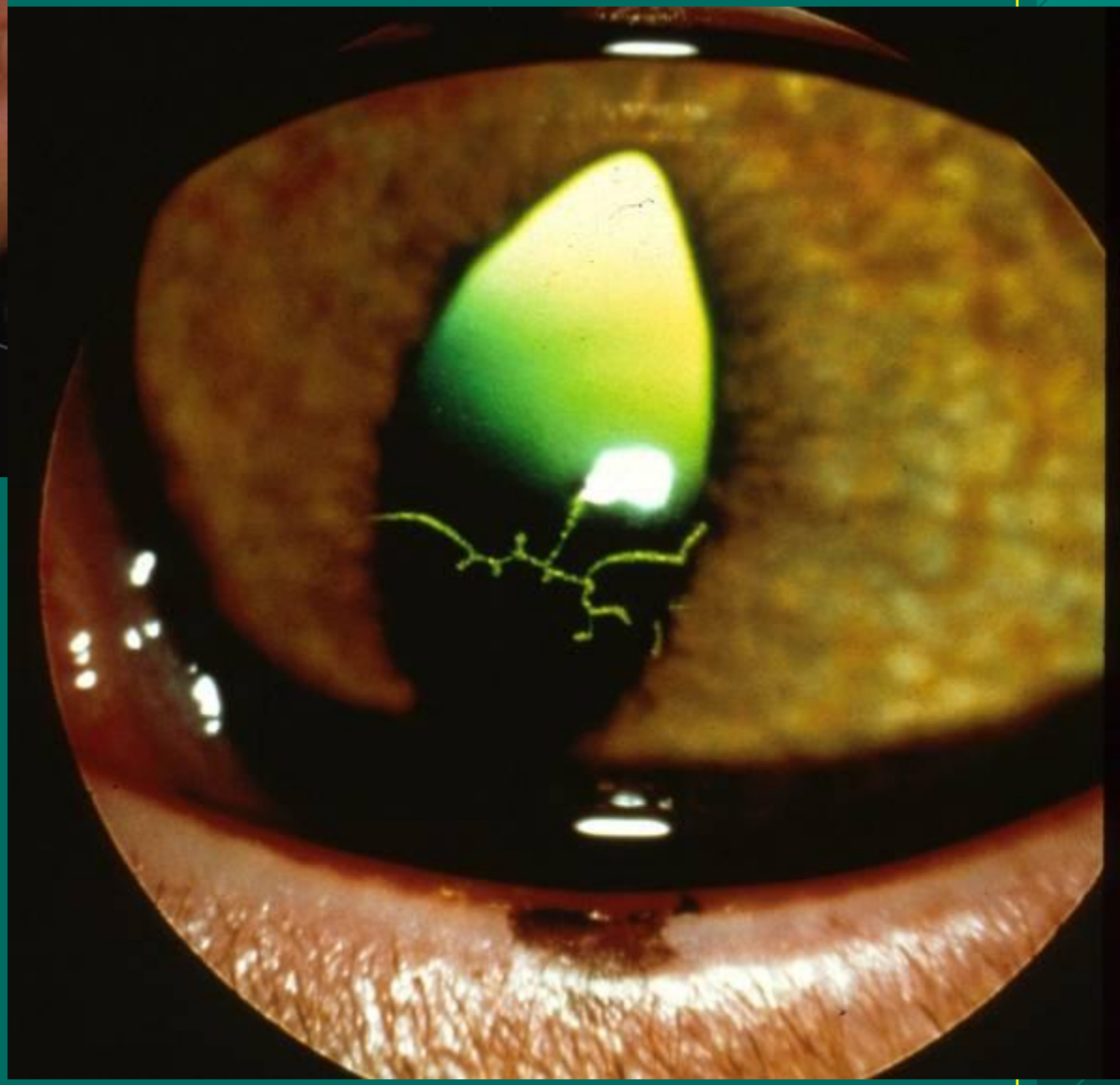
Toxoplasmosis

- Retinochoroiditis
- Cats with retinitis and iritis have systemic signs more often than cats with iritis alone.

Herpes

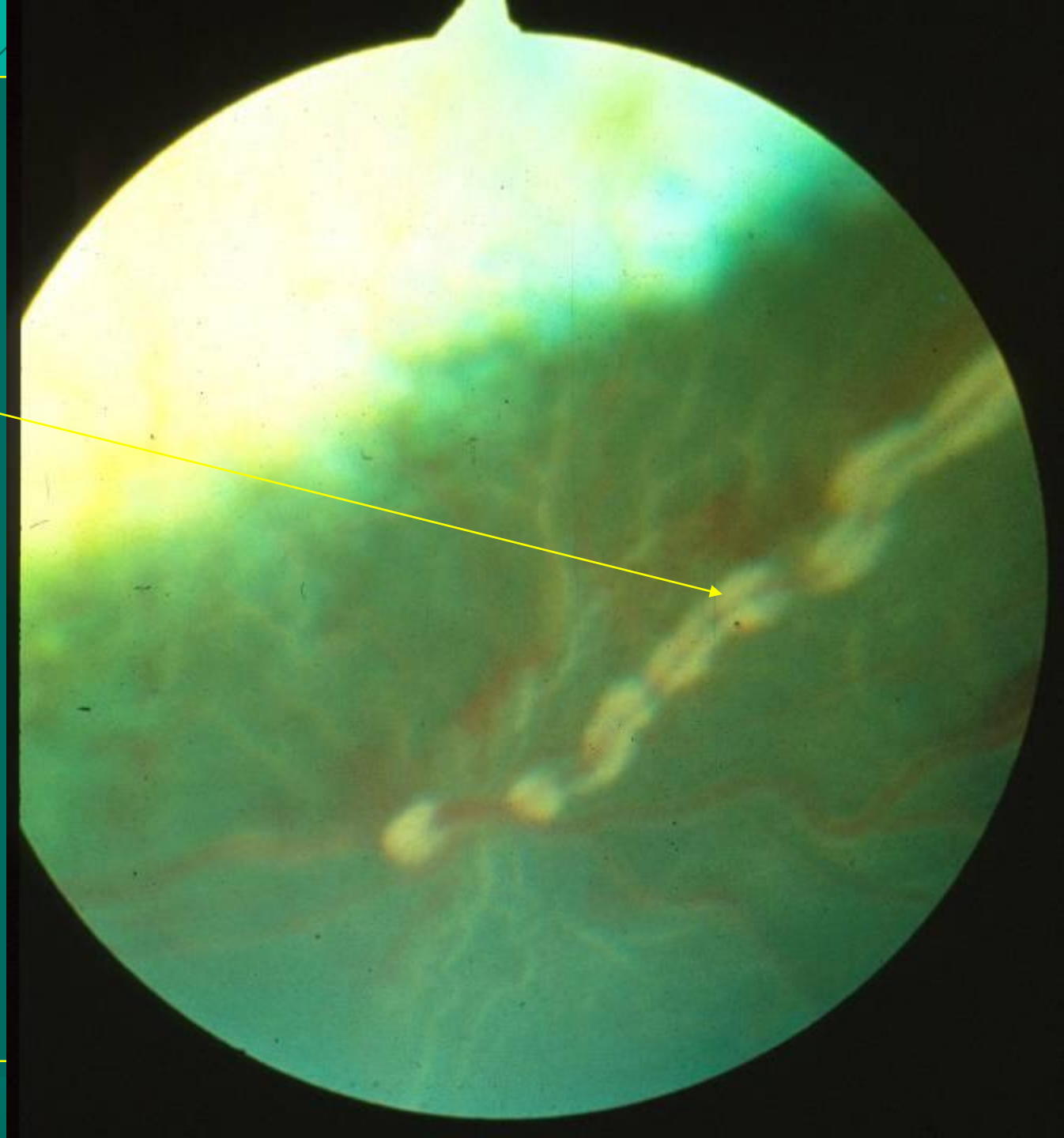
- Conjunctivitis, uveitis, keratitis
- Chronic cases should be tested for FIV
- Viroptic, acyclovir, idoxuridine
- Oral lysine
- Oral interferon





FIP

- Perivascular cuffing



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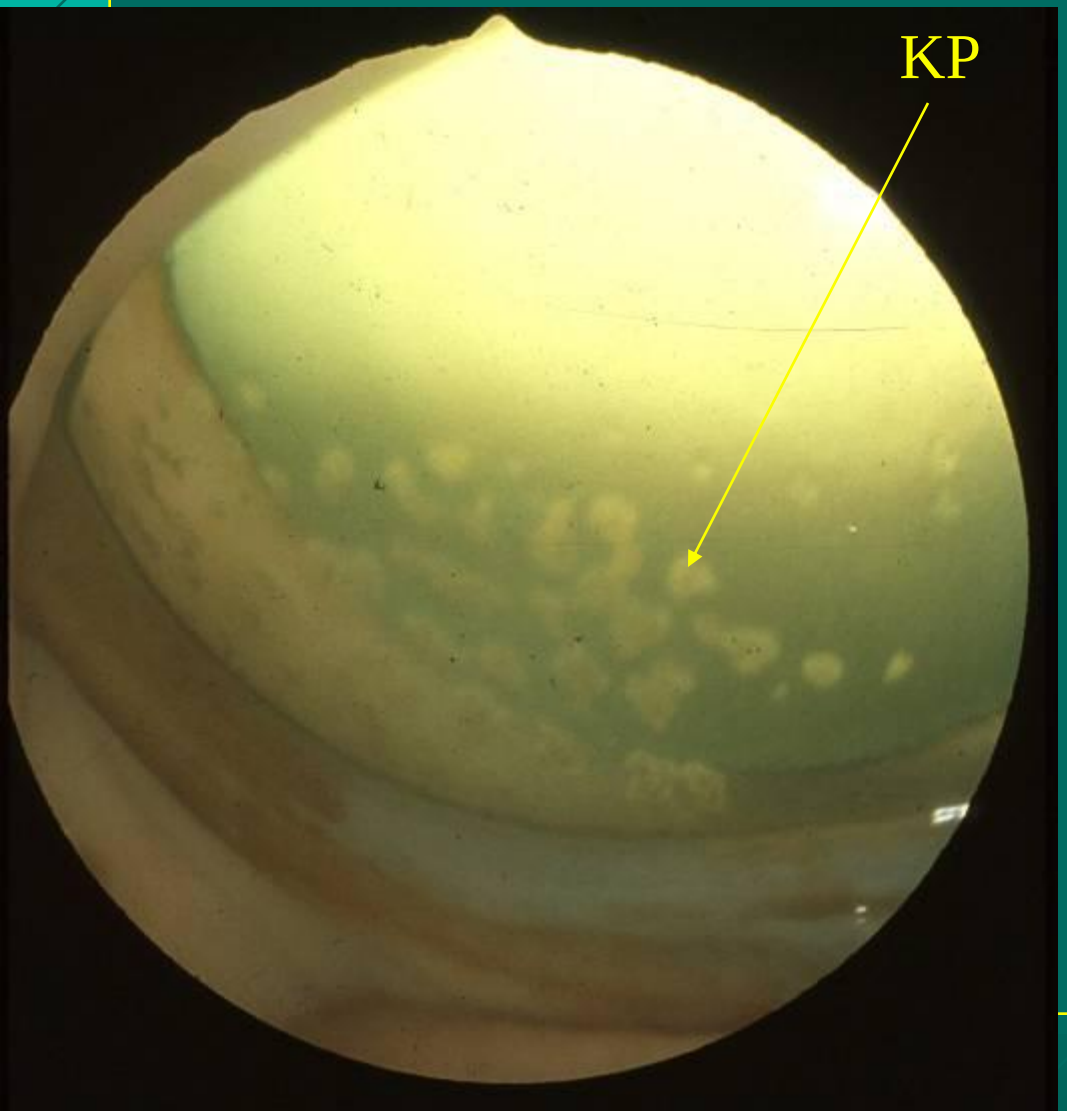

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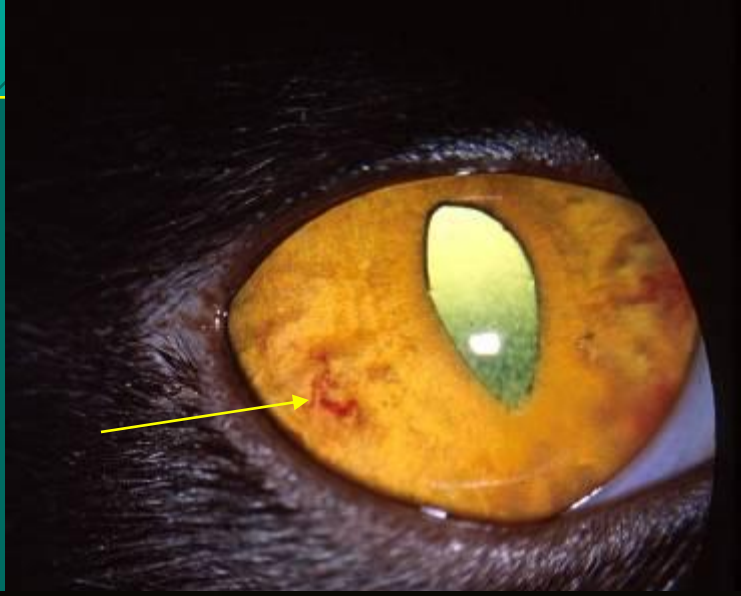
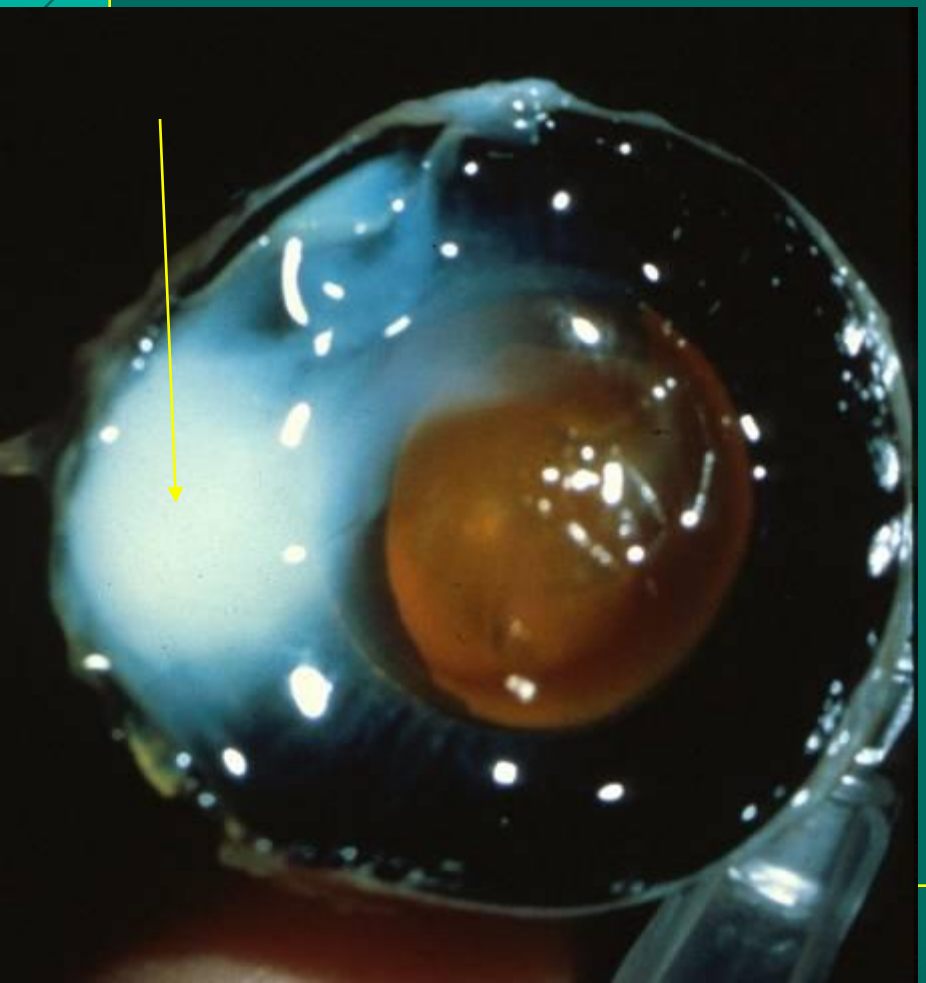
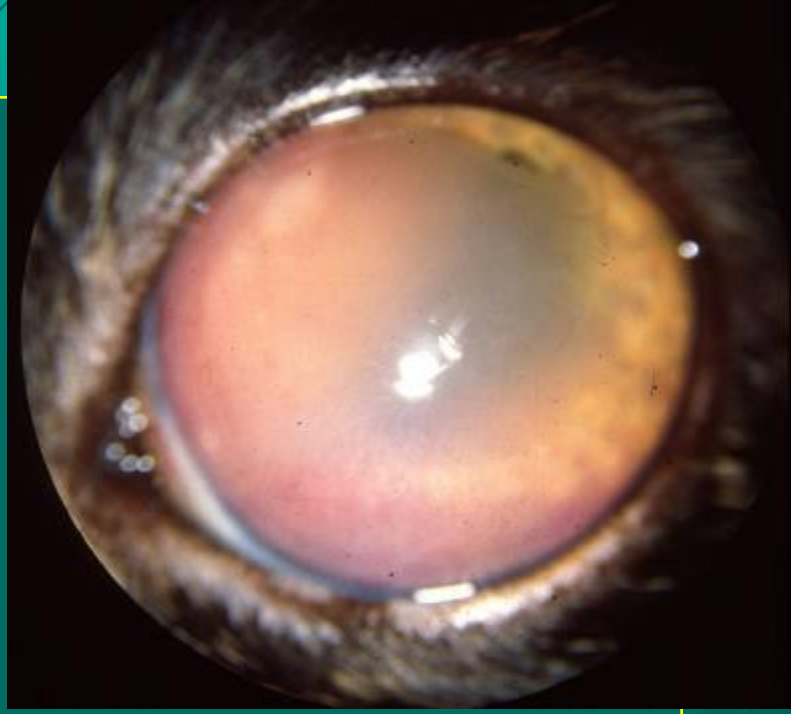




FIV

- uveitis

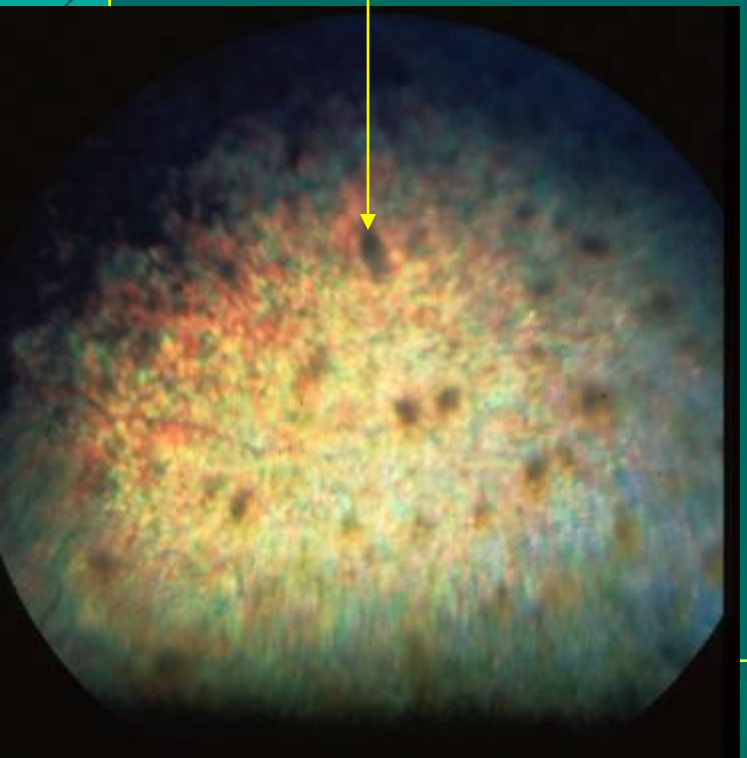
FeLV



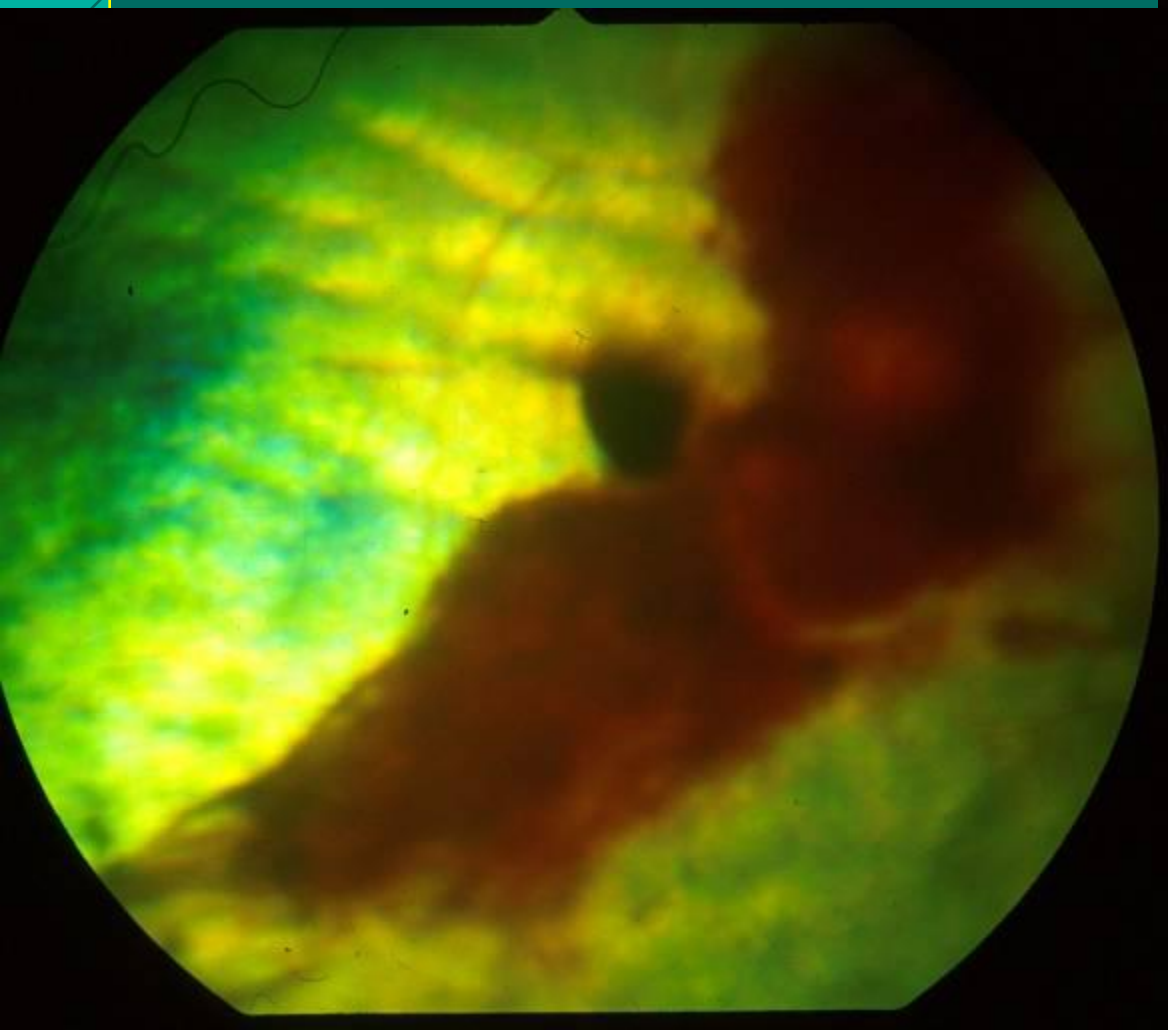
Uveitis and retinitis

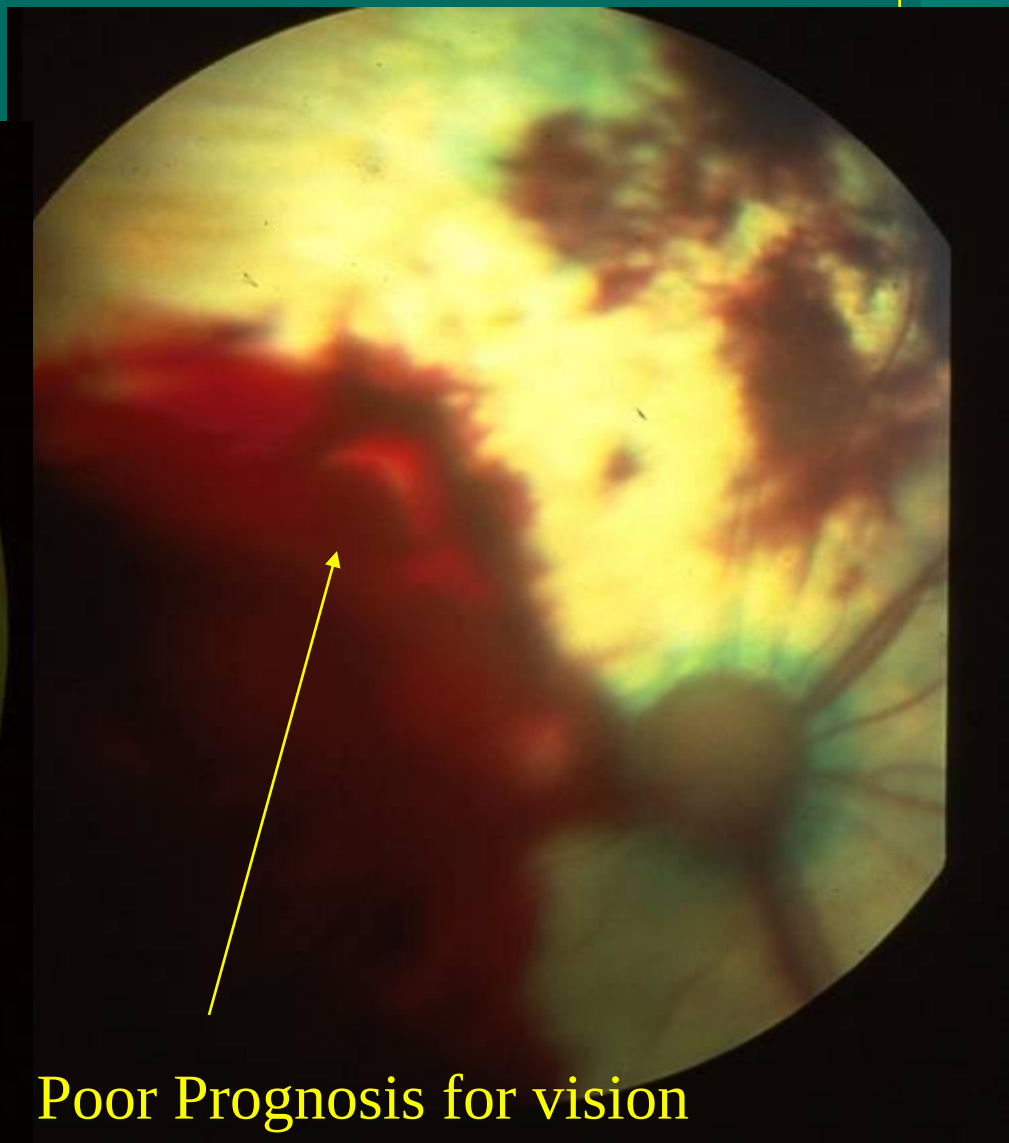
Nutritional Retinopathy

- Taurine deficiency
- Vit E deficiency



Vascular Hypertension





Poor Prognosis for vision

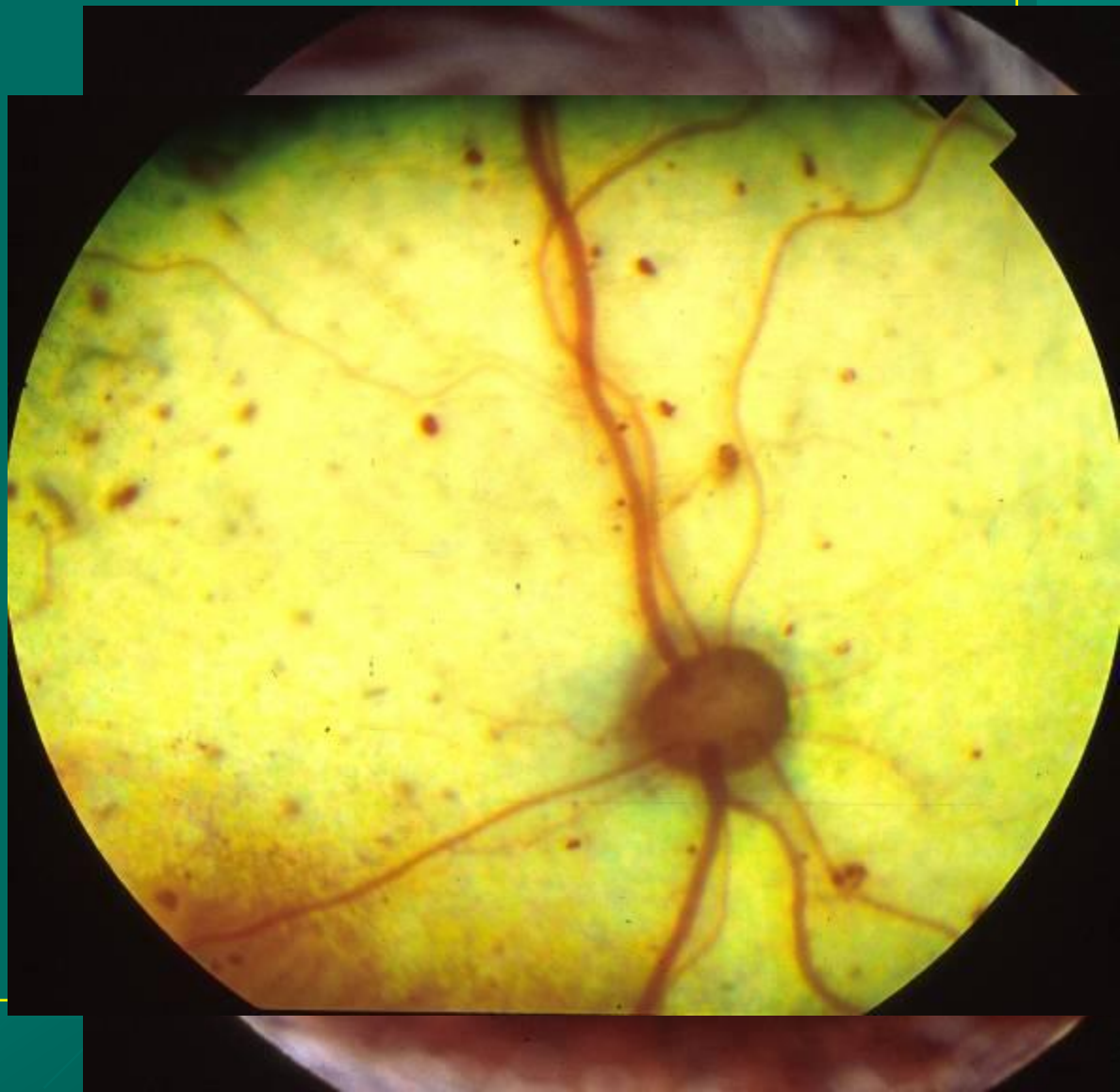
Vascular Hypertension

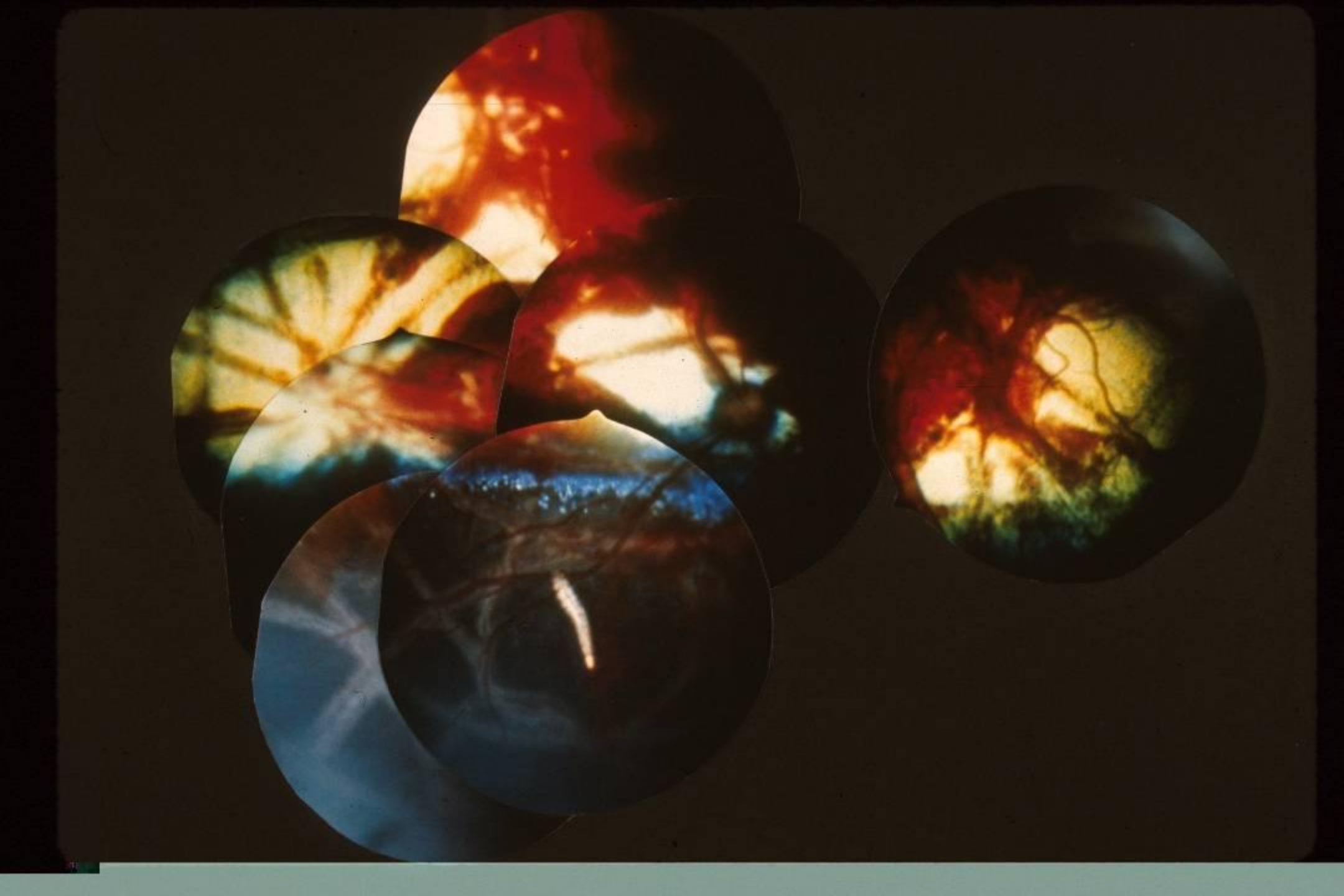
Retina

Cornea

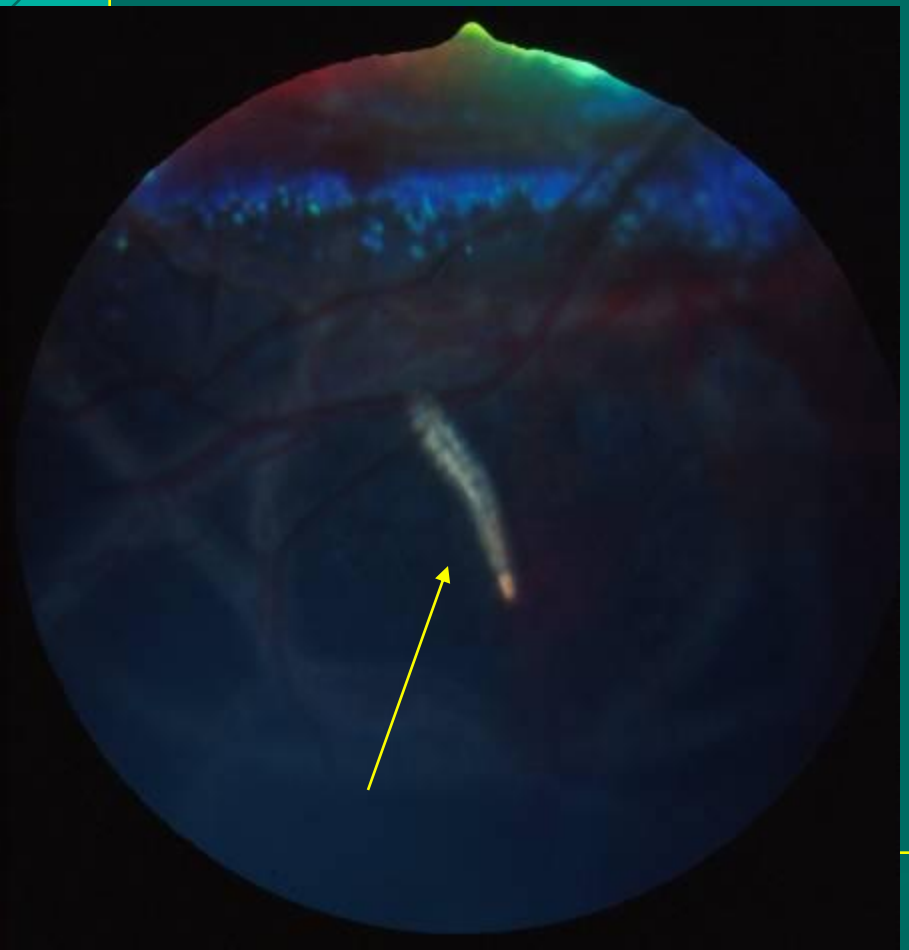
Hyperviscosity Syndromes

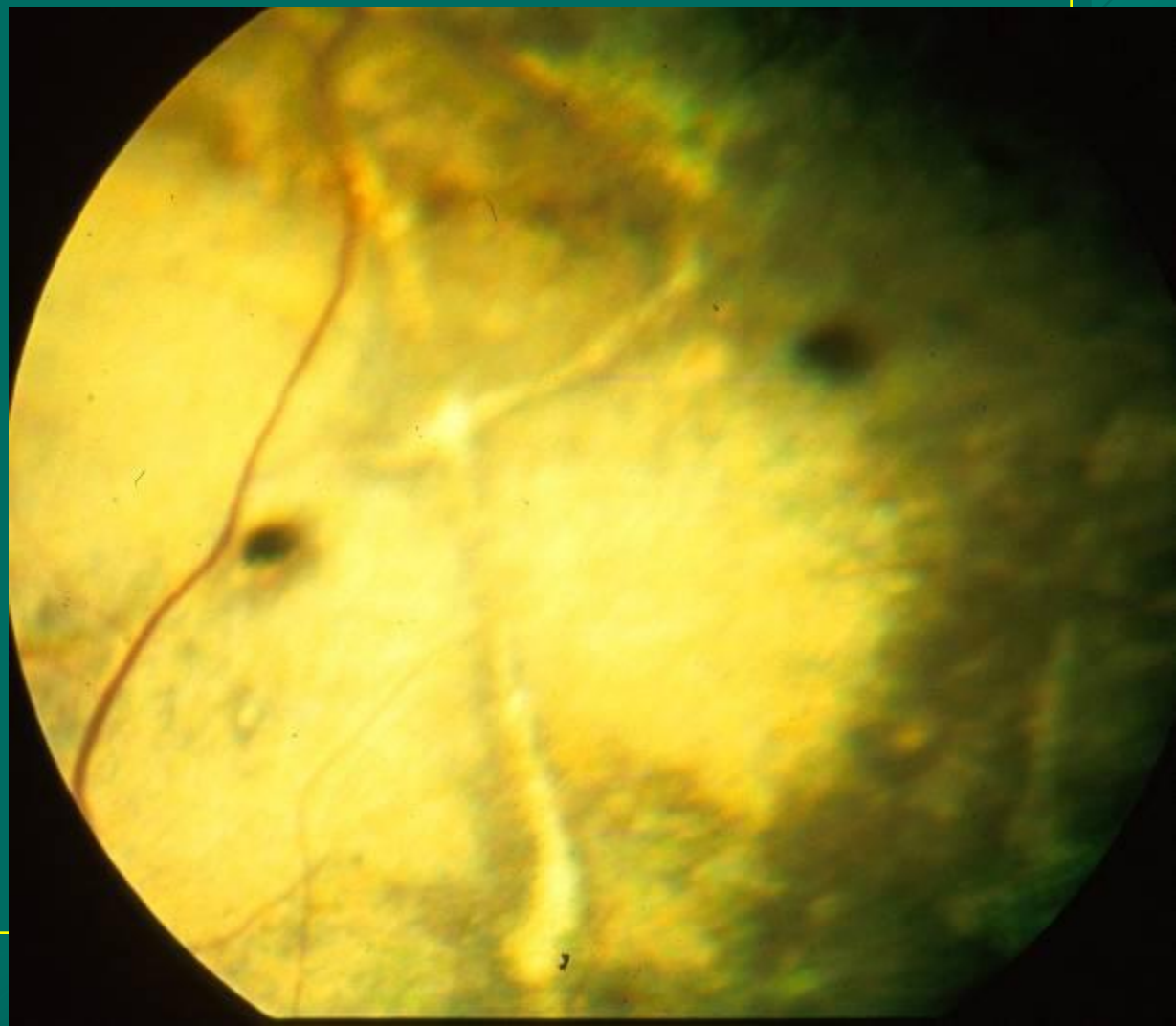
- Plasma cell tumors

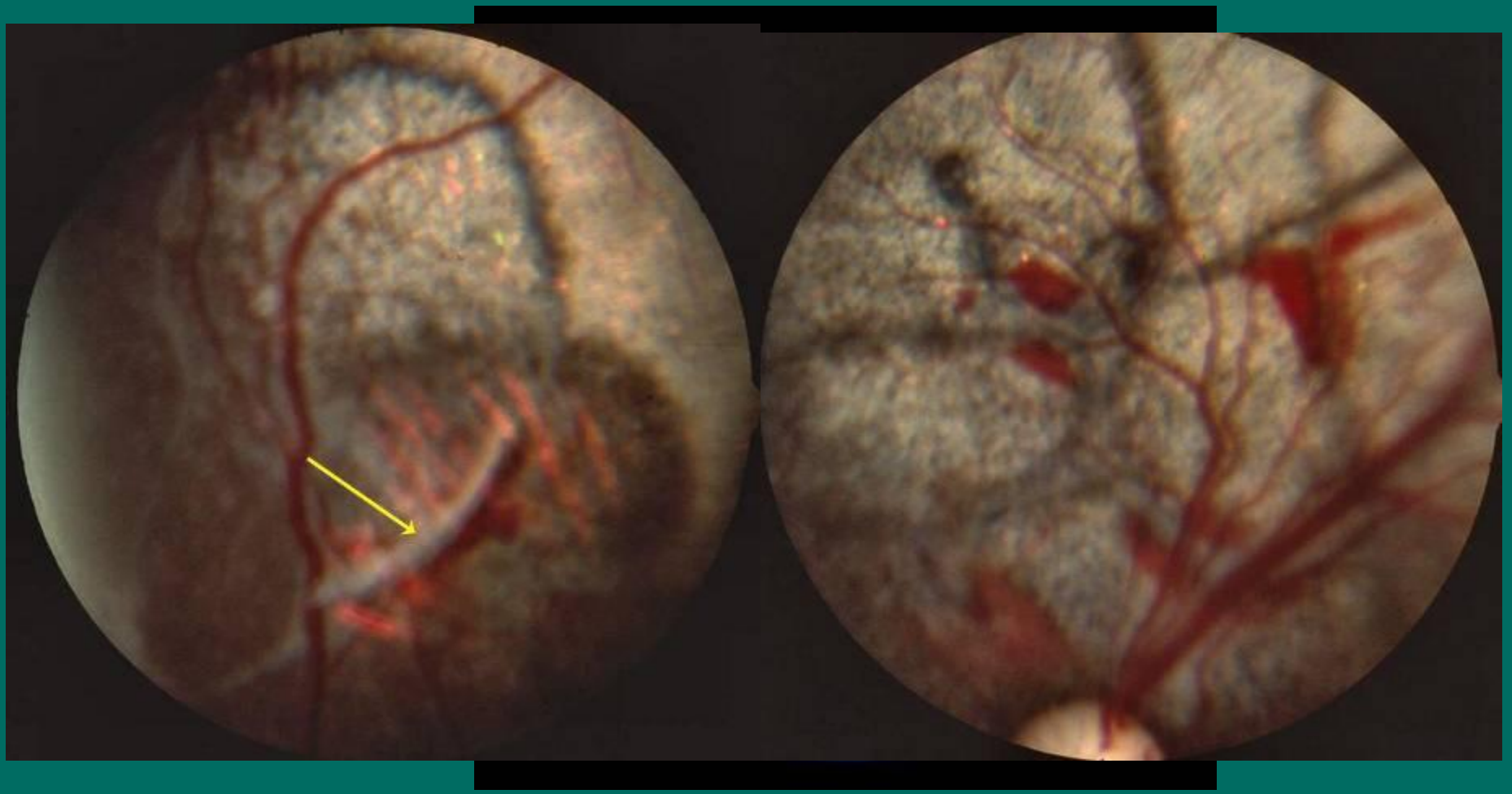




Ophthalmomyiasis

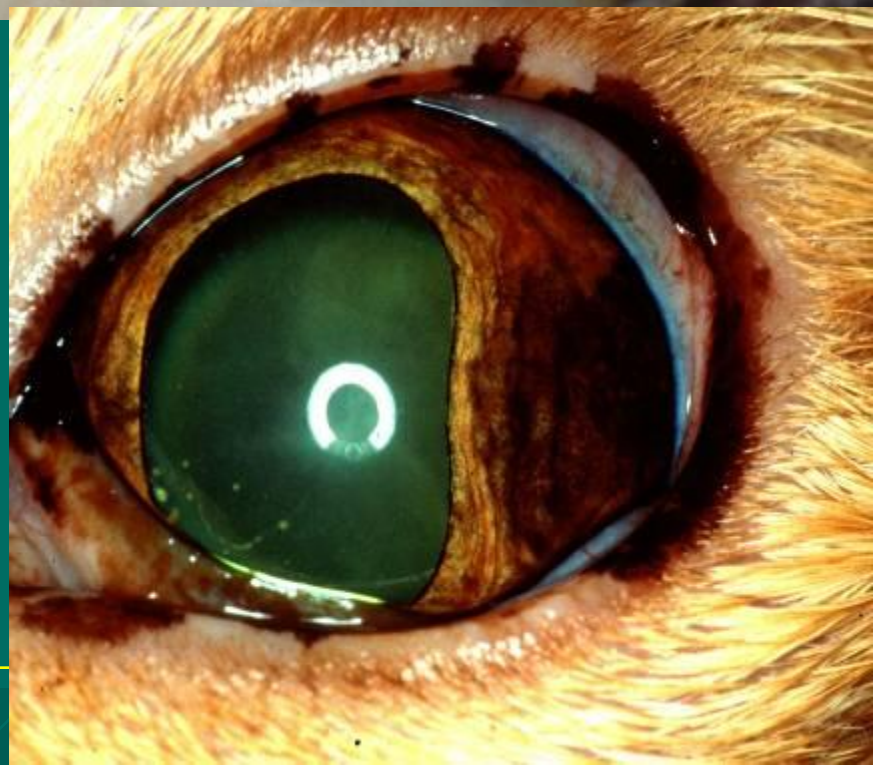




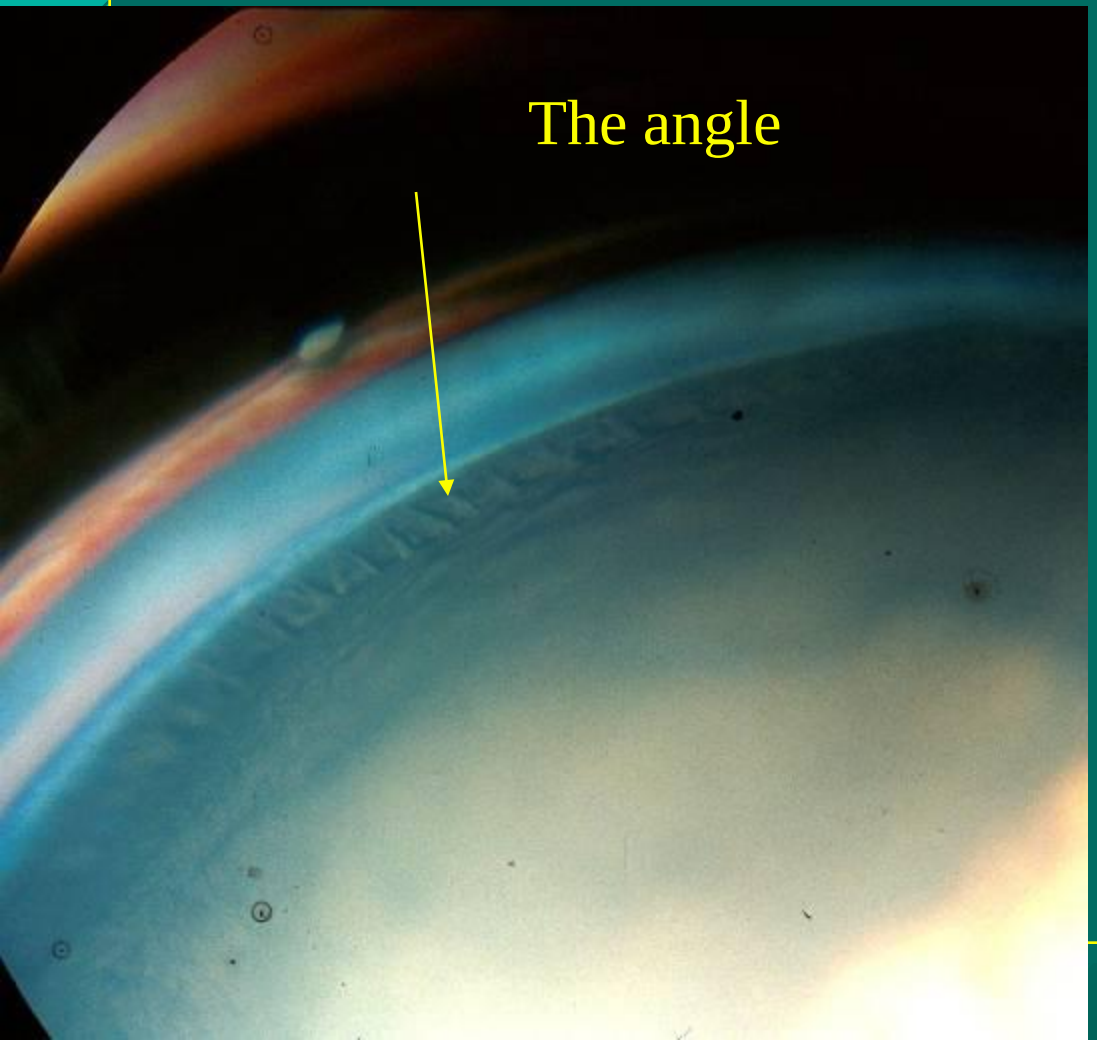


Intraocular Tumors

- Melanomas
- Adenomas

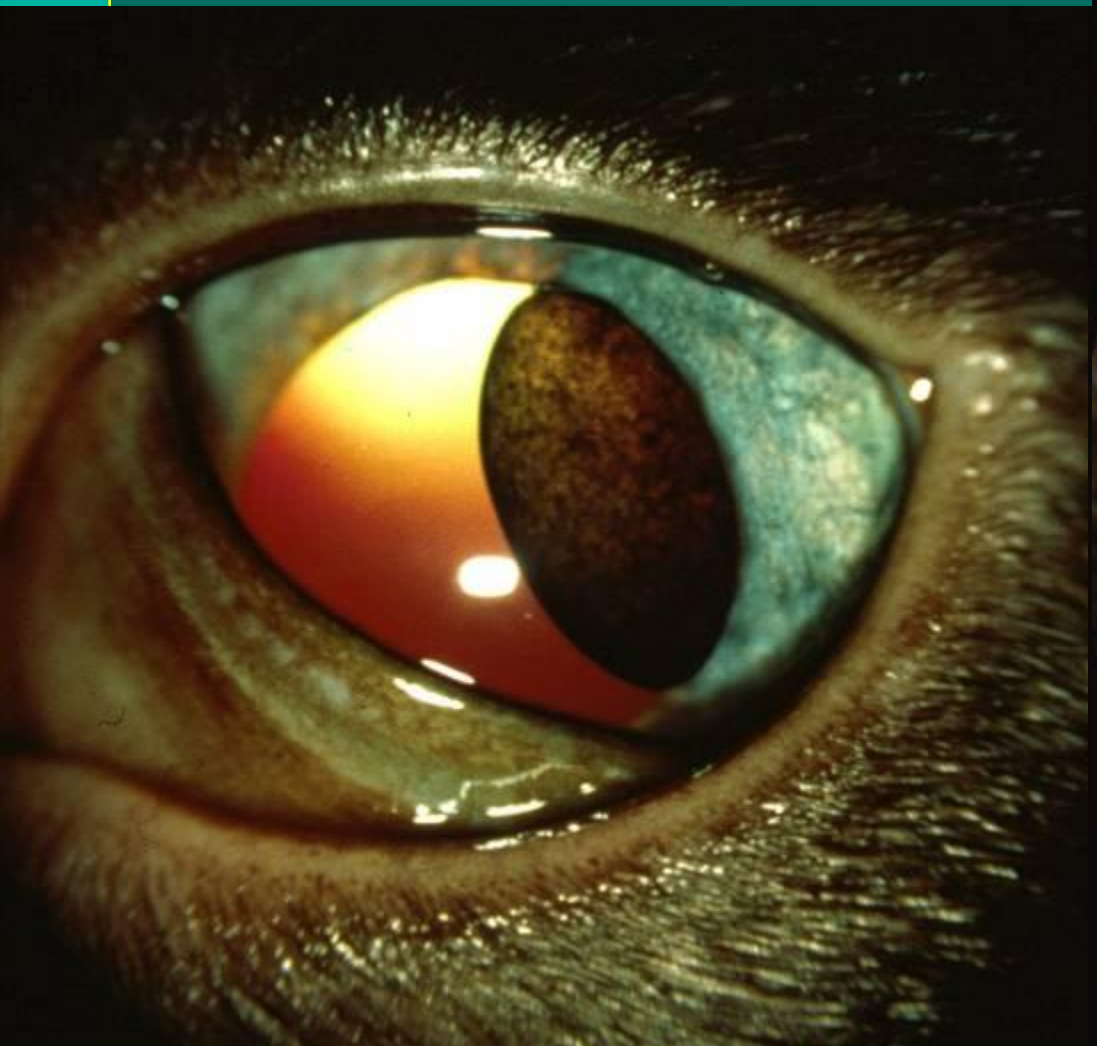


Melanomas

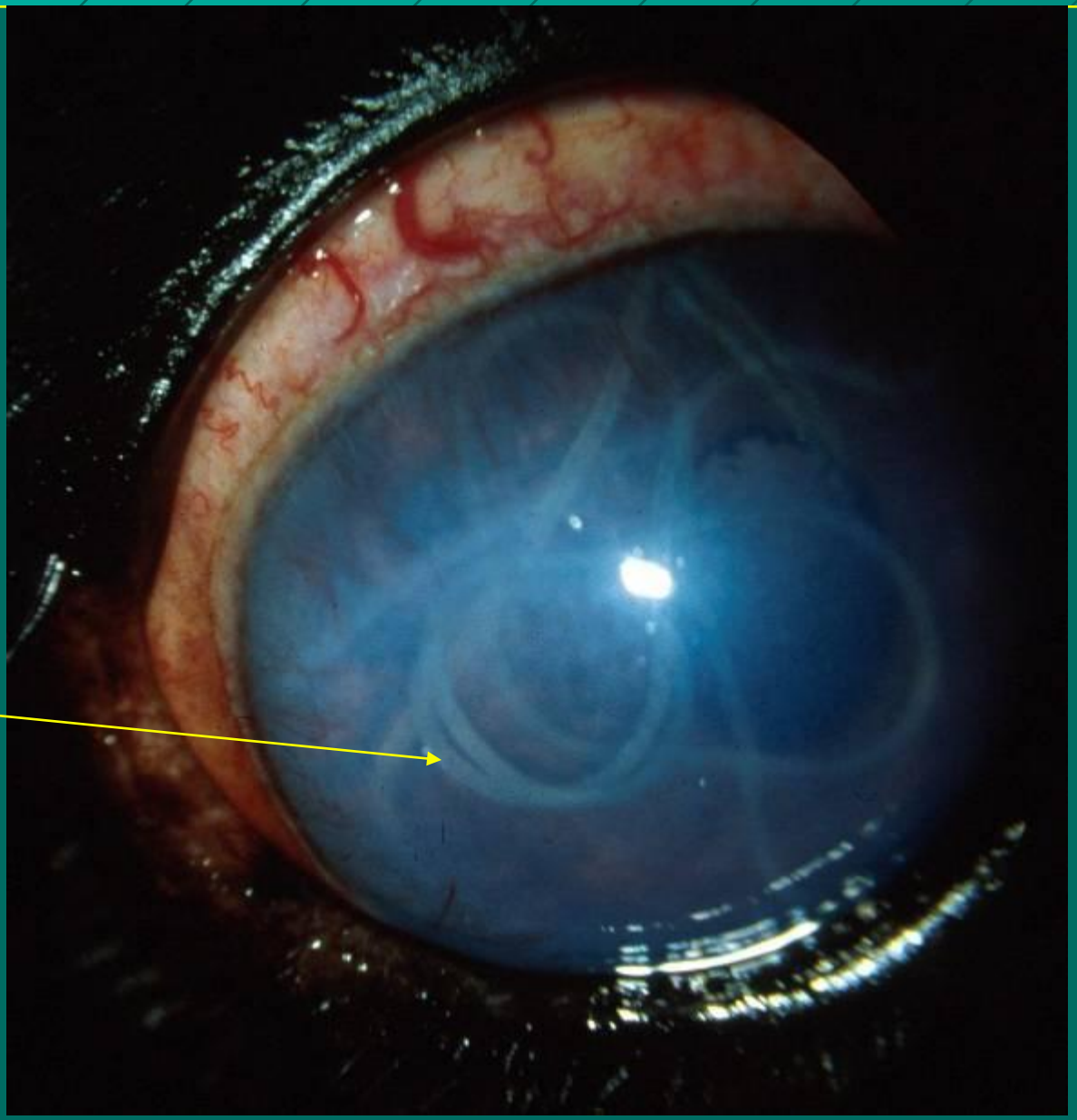


Iris melanoma

Intraocular Cysts or Tumors??

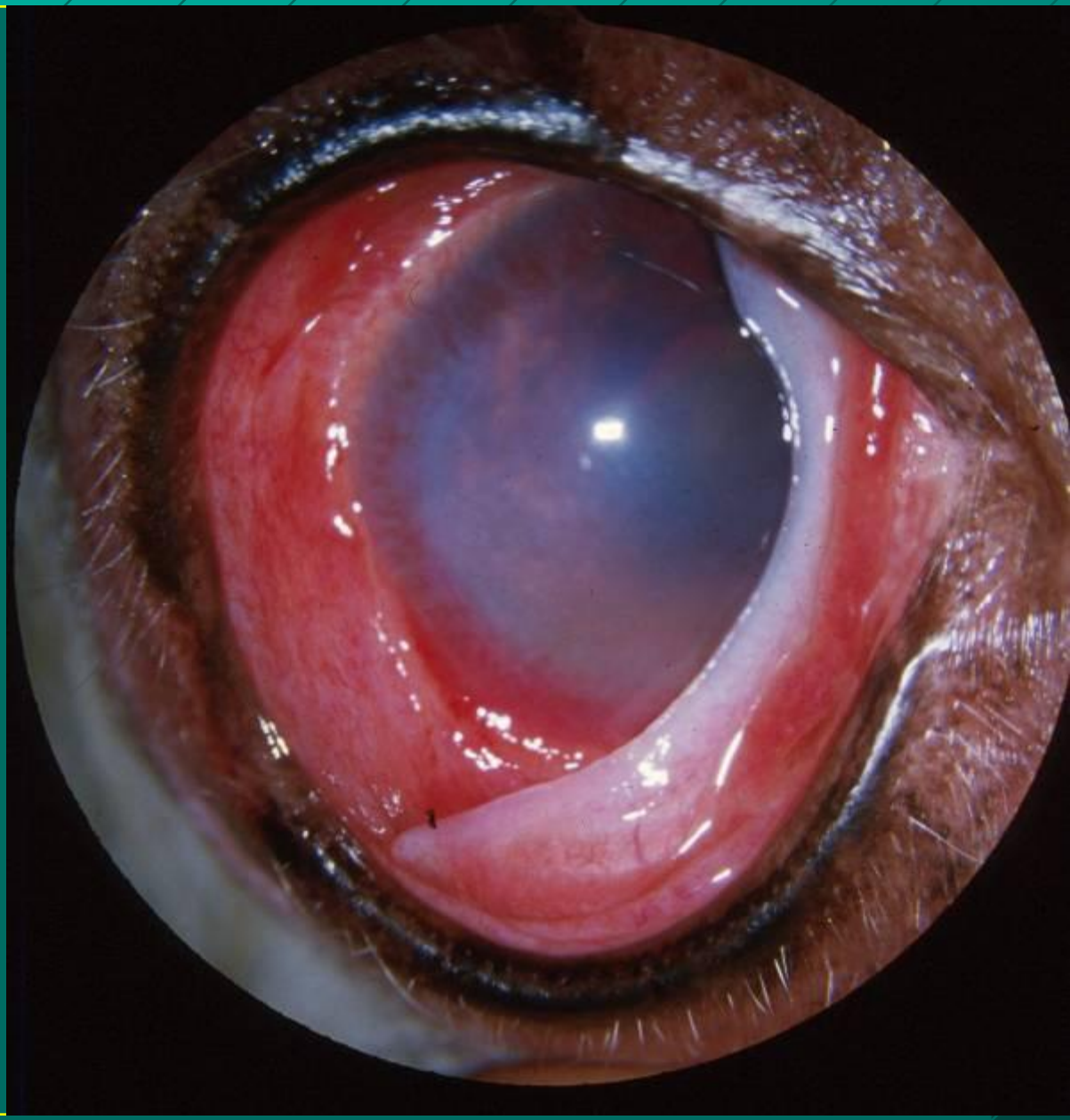


Dirofilaria



Brucella canis

- ocular
  - corneal edema, anterior uveitis, chorioretinitis, glaucoma
- systemic
  - reproductive problems, discospondylitis, lymphadenopathy



Coccidioides immitis

- cats rarely affected
- ocular signs-
  - granulomatous uveitis and retinitis, retinal detachments, keratitis
  - posterior segment lesions predominate
- vitreal sample-may see endospores

Bartonellosis Therapy

- Azithromycin 5mg/kg QOD PO for 10-21 days
- Rifampin 10mg/kg SID PO for 1 week
- Doxycycline 5 mg/kg BID PO for 6 weeks
  - Combinations of first two with doxycycline