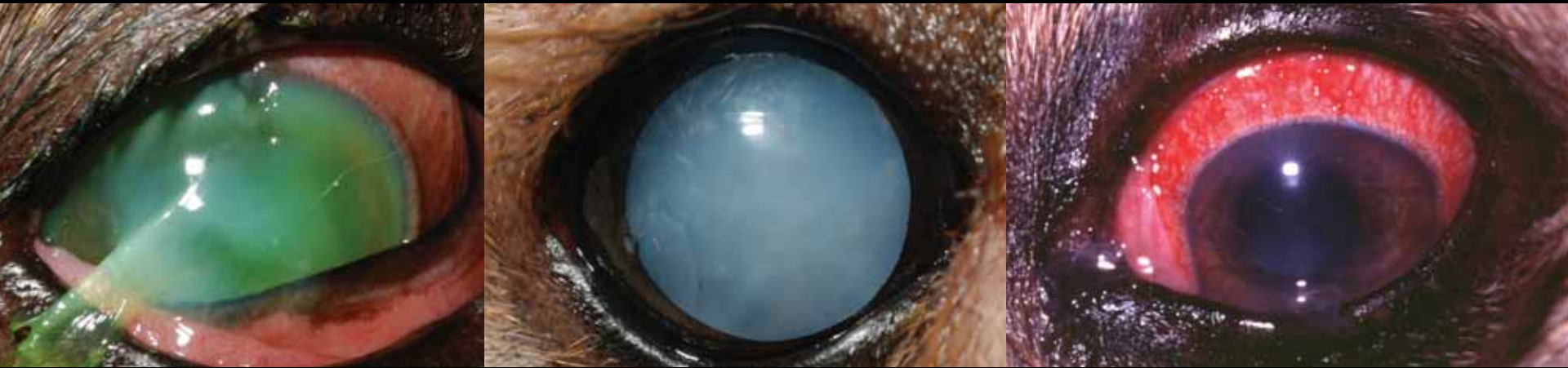


What Are Your Colleagues Sending?

Identifying Great Ophthalmology Referrals in Modern Veterinary Practice



Jacqueline W. Pearce, DVM, MS, DACVO

The Top Ten

1. Cataracts
2. Glaucoma
3. Non-Healing Ulcers
4. Complex Ulcers
5. Orbital Disease
6. Eyelid Masses
7. Nictitans Gland Abnormalities
8. Entropion
9. Weird Fundus Stuff
10. Enucleations



Cataracts

- When to refer?



Cataract Surgery When to Refer?



WHEN THE
CATARACTS
ARE INITIALLY
DIAGNOSED!

Treatment of Cataracts

To Cut is to Cure!

- Surgery
 - Only cure
- Neglect
 - Failure 255x likely
(Lim et. al. 2009)
- Medical
 - Topical NSAID
 - Anti-cataract drugs?
 - Generally ineffective
 - Delay professional care



Cataract Surgery Case Selection

Referral and Ophthalmologist Evaluation

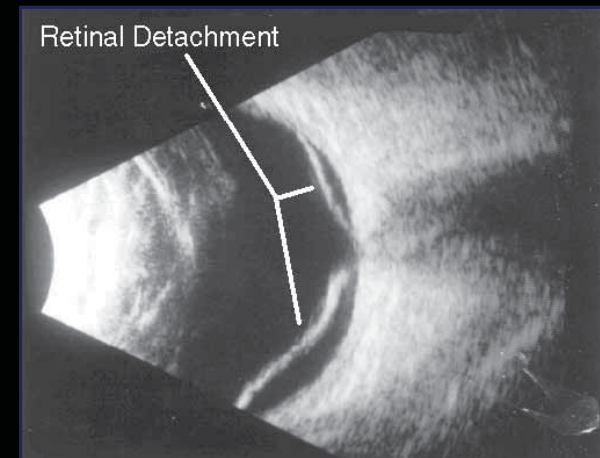
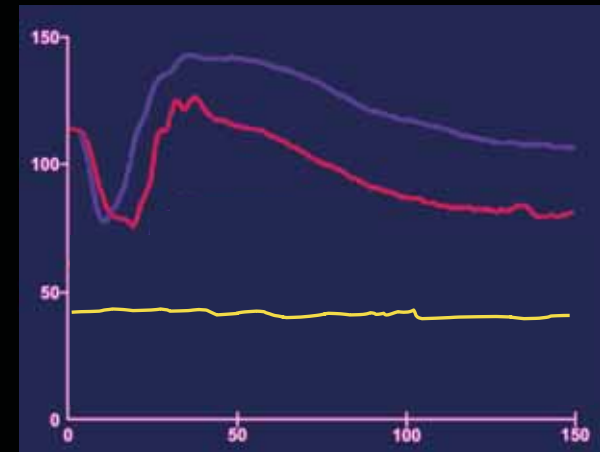
- Vision deficit
- Progression of the cataract
- Amenable patient
 - Handling
 - Topical medication
- Patient health
 - General anesthesia
- Client commitment
 - Financial
 - Time



Cataract Surgery Case Selection

Referral and Ophthalmologist Evaluation

- Absence of pathologic processes
 - Complete ophthalmic exam
 - Minimum ophthalmic database
- Glaucoma risk
 - Gonioscopy
- Retinal function
 - Electroretinogram (ERG)
- Retinal attachment
 - Ocular ultrasound



Never Underestimate the Importance of Vision in Pets!



Tips for Great Cataract Referrals

- Send when cataract first diagnosed
 - Diabetics
 - Young dogs
 - Rapidly progressing cataracts
- Check for diabetes
- Surgical candidates
 - Diabetics: CBC, Chem, UA, Fructosamine
 - Non Diabetics: CBC, Chem, UA
 - Dental prophylaxis



Glaucoma

The Acute Abdomen of the Eye

- Non-specific
- Painful
- Treat medically or surgically
- Emergency
 - Vision at risk
 - Address discomfort



8yo FS Cocker Spaniel

- IOP 45 mmHg OS, acute blindness, pain



Acute Glaucoma



- Treatment
- Latanoprost q20 minutes x 2 doses
- Recheck IOP in 1h
 - Normal IOP
 - Latanoprost BID
 - Dorzolamide/Timolol BID
 - Oral NSAID, Oral Tramadol
 - Refer next available
 - High IOP
 - Emergency referral

7yo SF Basset Hound

- IOP 36 mmHg OS, red eye x 1 week, blind, buphthalmic globe



Chronic Glaucoma



- Blind eyes
- Treatment
 - Latanoprost BID
 - Dorzolamide/Timolol BID
 - Oral NSAID, Oral Tramadol
 - Refer next available

13yo SF Shih Tzu

- IOP 41 mmHg OD, red eye x 1 week, hyphema,



Secondary Glaucoma



- Eyes with lens luxation, hyphema, pre-existing uveitis etc.
- Treatment
 - Dorzolamide/Timolol BID
 - Topical steroid and/or NSAID
 - Oral NSAID, Oral Tramadol
 - Visual
 - Urgent referral
 - Blind
 - Next available referral

10yo NM Domestic Shorthair

- IOP 37 mmHg OD, red eye x 1 week,



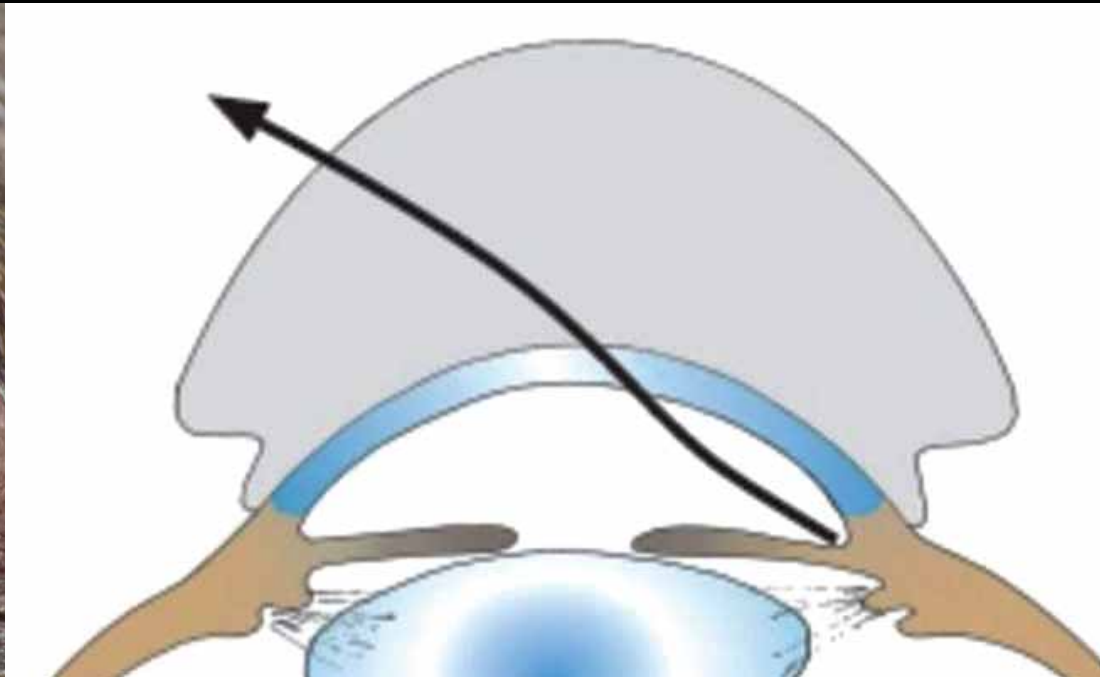
Feline Glaucoma

- Treatment
 - Dorzolamide TID
 - Azopt TID
 - Oral anti-inflammatory (if safe)
 - Oral buprenorphine or tramadol
 - Urgent referral



Glaucoma Diagnostics: Gonioscopy

- Performed by specialist
- Visualization of iridocorneal angle
- Determine if primary vs. secondary



Treating Glaucoma: The Ophthalmologist's Cancer

- We diagnose it
- We stage it
- We treat it
- It goes into remission
- It comes out of remission
 - Typically ~6 months
 - Surgical intervention stage
- Eventually we euthanize
 - Enucleation



Glaucoma Treatment Goals: Vision and Comfort

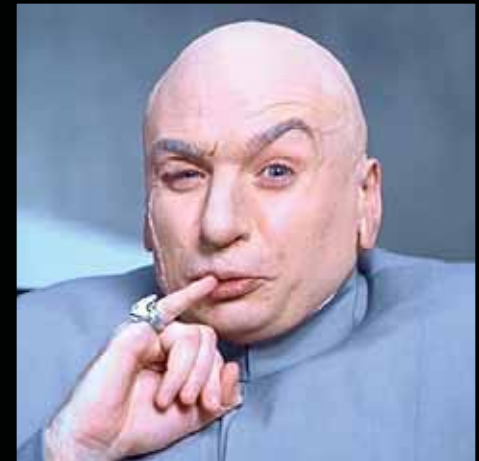
- Decrease aqueous production
- Increase aqueous outflow
- Specific treatments
 - Medical
 - Surgical



Glaucoma Surgical Therapy

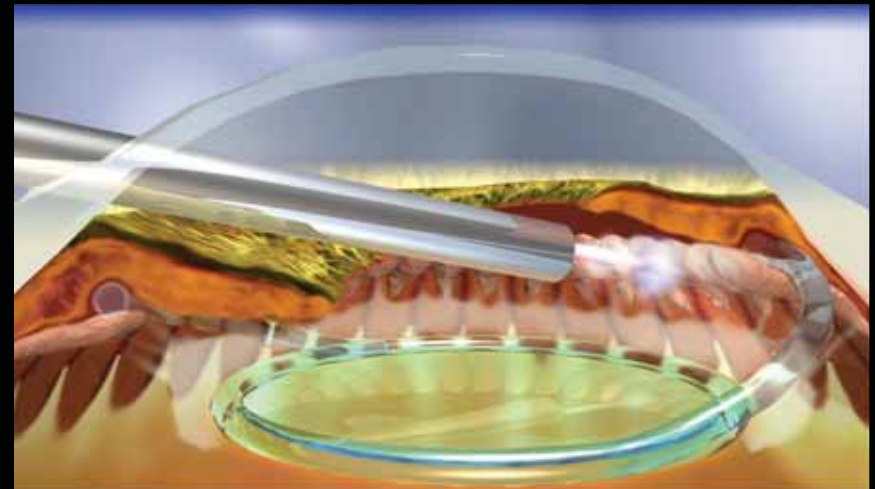
Laser Cyclophotocoagulation

- Laser ablation of ciliary body
 - Damage cells producing aqueous
 - Decrease aqueous production
- Different routes
 - Transcleral
 - Through intact sclera
 - Endolaser
 - Intraocular route

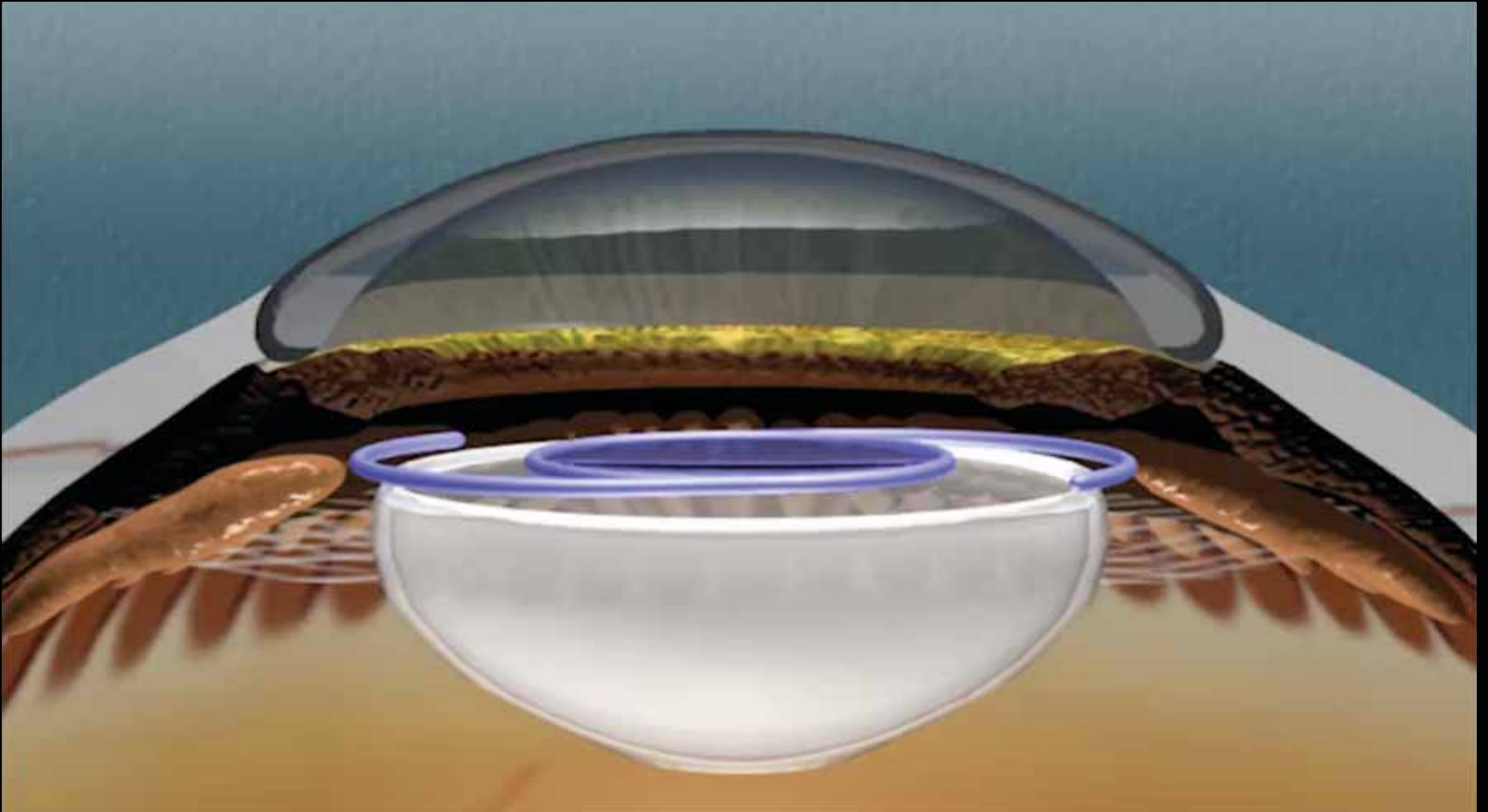


EndoLaser Cyclophotocoagulation

- Pros
 - Higher success rates
 - ~70% (Lutz *et al.*, 2015)
 - Directly targets tissue
- Cons
 - More expensive
 - More invasive
 - Longer surgery time



EndoLaser Cyclophotocoagulation



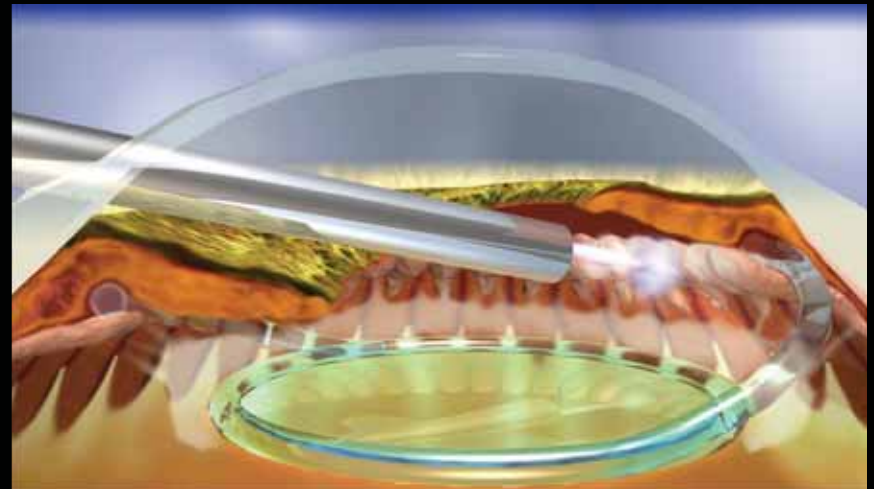
Kobe 6yo MN Bichon

- Rapidly progressing juvenile cataracts OU
- Lens-induced uveitis OU
- Secondary glaucoma OD
 - IOP 20 mmHg
 - Dilated 30 mmHg



Plan

- Medical treatment
 - Prednisolone BID OU
 - Diclofenac TID OU
 - Dorzolamide/Timolol OD
- Cataract Sx OU
- Endolaser OS



Outcome

- Visual, comfortable OU
- Stable IOP OD off glaucoma meds



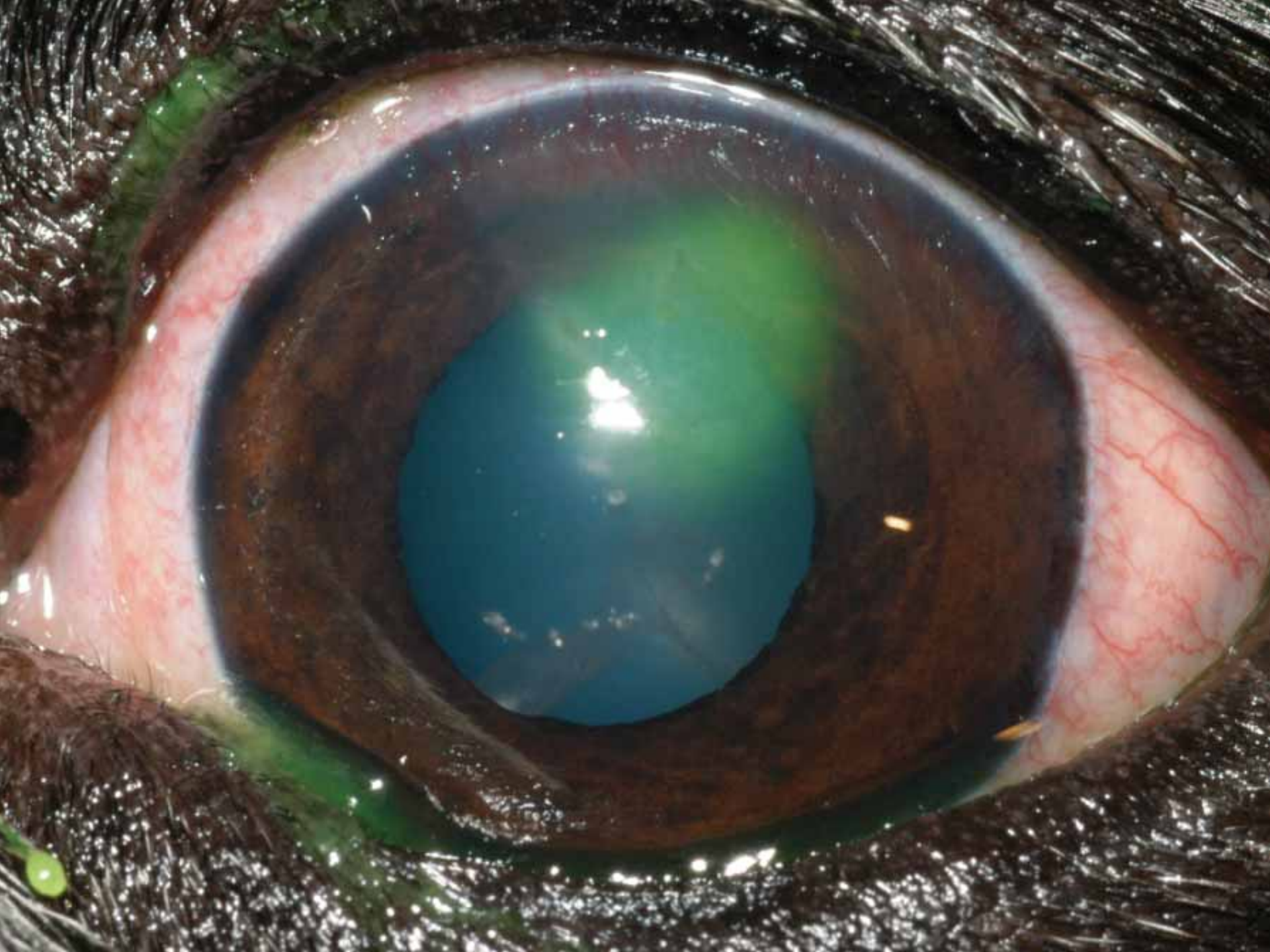
Never Underestimate the Importance of Vision in Pets!



Referral for Glaucoma

- When is the best time?
 - At initial diagnosis
- When is it an emergency?
 - Visual eye
 - Acute vision loss
 - Pain/discomfort
 - Not sure
- When can it wait?
 - Responds to medical treatment
 - Chronic blindness with no obvious pain





Non-Healing Corneal Ulcers: Change Your Diagnosis Not Your Antibiotic!

- Why don't they heal?
 - Primary cause not identified
 - Ulcer is infected
 - Ulcer is indolent



Non-Healing Ulcers Are Frustrating!

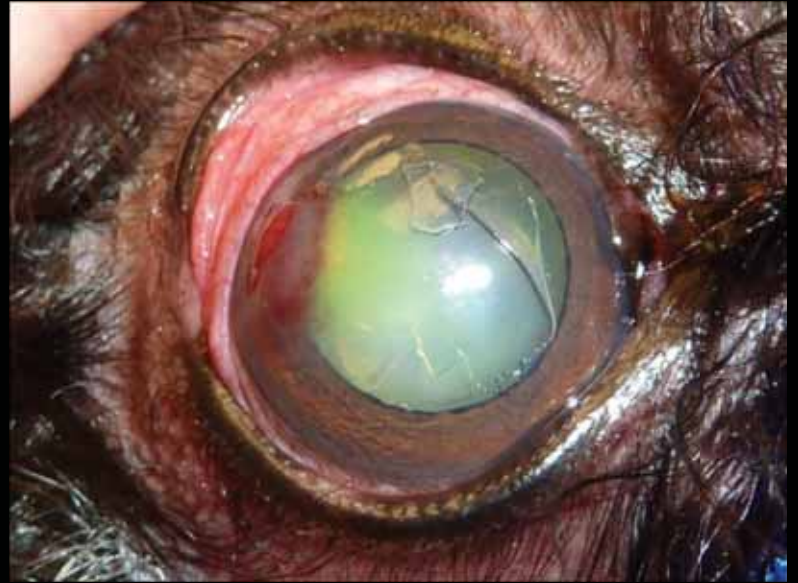
Veterinary Ophthalmologists Can Help!

- Multiple procedures MAY be needed
- MAY be a microscopic underlying cause
- Contact lens placement MAY help
- Superficial keratectomy in refractory cases (99% successful)



Indolent Ulcers

- Chronic
- Superficial ulcer
- Stromal issue
- Clinical signs
 - Redundant lip
 - Granulation tissue
 - Very painful



Indolent Ulcer Treatment

- Topical anesthesia
- Debride with Q-tip first
 - 50%
- Grid Keratotomy
 - 85%
 - Sedation
- Diamond burr
 - 90% heal
 - Can do awake
 - Bandage contact lens improved healing time
 - DBD + Grid = not any better



Diamond Burr Debridement



Indolent Ulcer Pearls

Standard Medical Treatment

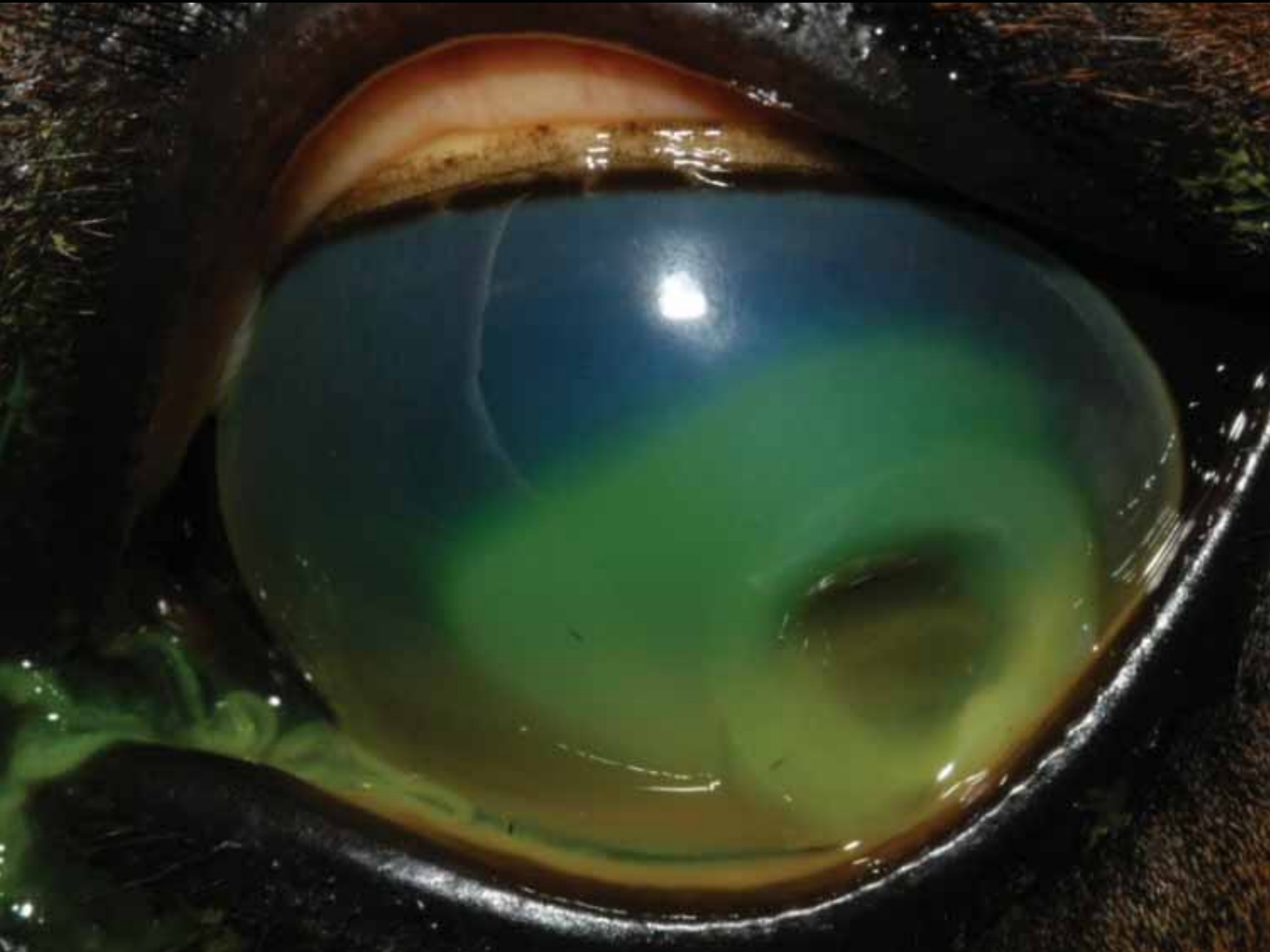
- E-Collar
- Ofloxacin QID
- Muro 128 QID
- Morphine 1% TID
- Oral
 - NSAID
 - Tramadol
- Recheck 2-3 weeks



Tips for Indolent Ulcer Referral

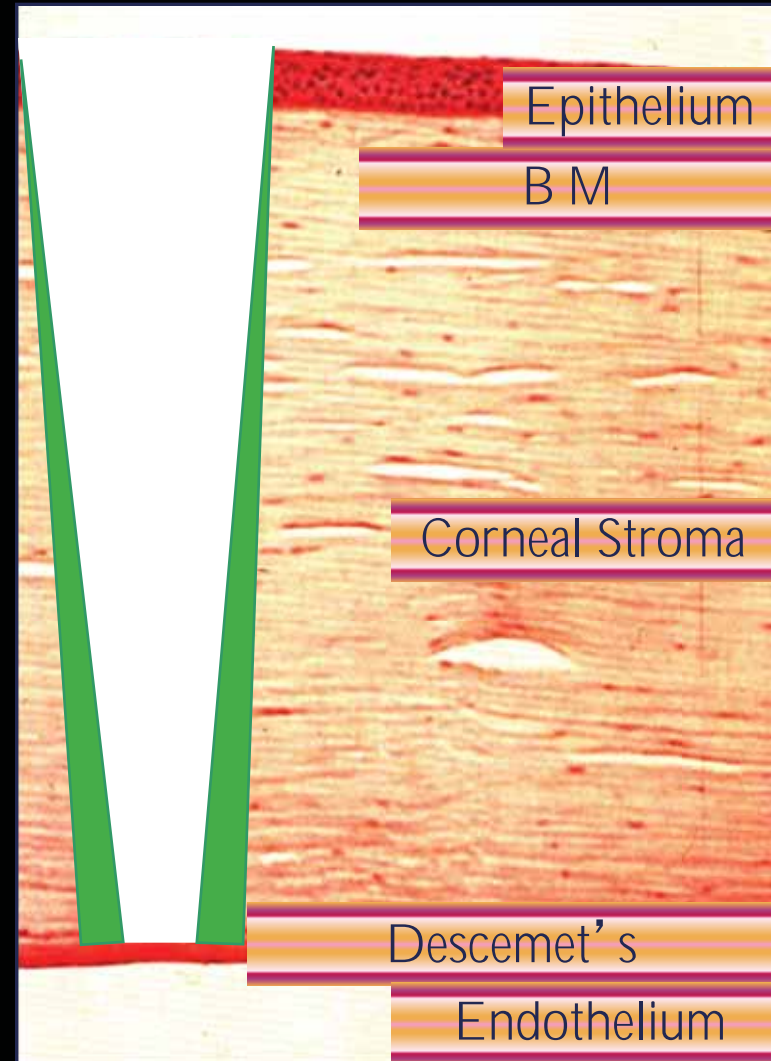
- Diagnosis is key
 - Refer if not 100% sure
- Try 1 procedure
 - Comfort level individual
 - Ofloxacin QID
 - Muro128 QID
 - E-Collar
 - Good pain control
- Not healed 2 weeks
 - Refer





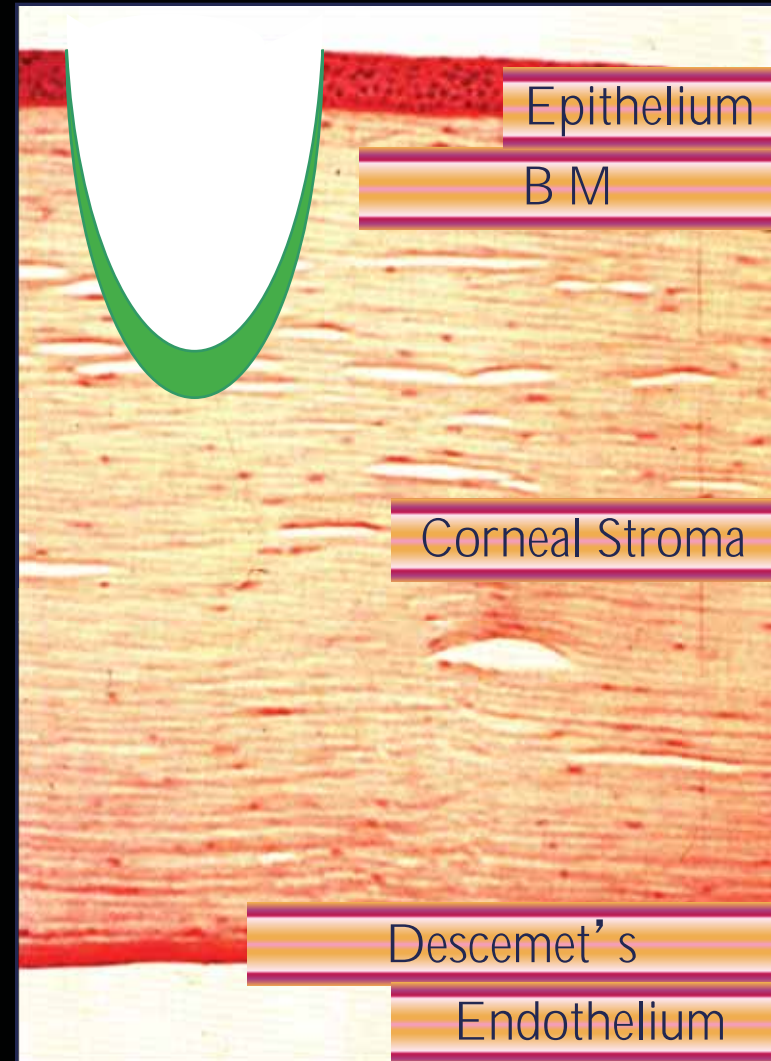
Descemetocoele

- Acute or chronic
- Complete stromal loss
- Fluroesccein stains walls



Melting or Deep Stromal Ulceration

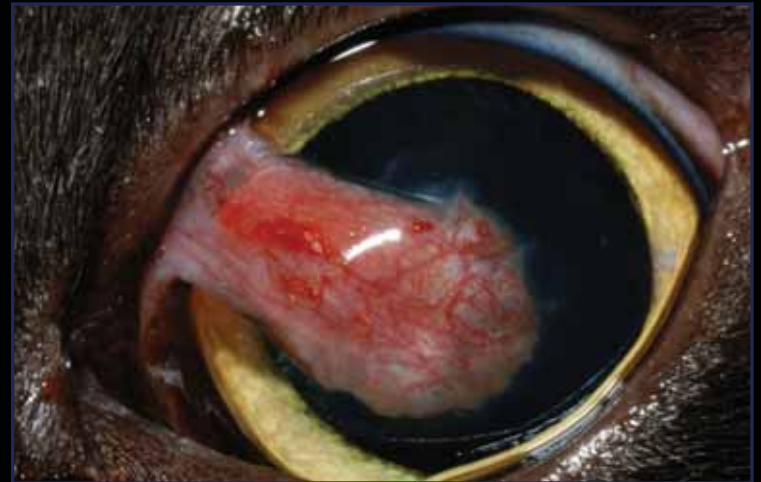
- Acute or chronic
- Epithelial and stromal loss
- Fluorescein stains walls and floor of ulcer
- Stroma frequently unhealthy



Medical vs. Surgical Treatment

Medical Management

- If reasonable potential to heal
- Until surgery can be performed
- If owner cannot afford surgery
- Conjunctival Graft
 - >70% stromal depth
 - Melting
 - Perforated



Conjunctival Graft Alternatives

- Corneal Transplant
- Corneal Transposition



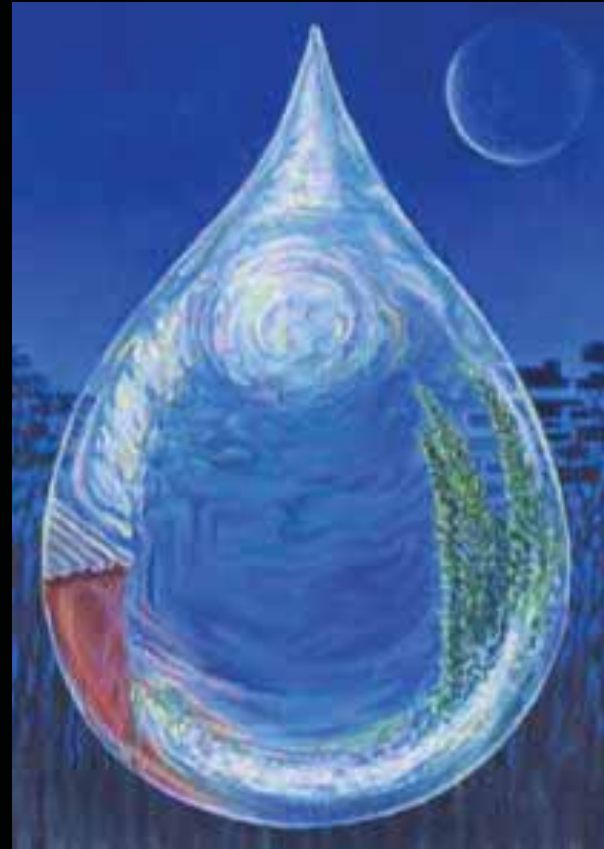
Referring Complex Corneal Ulcers

- Recommend referral if.....
 - Stromal involvement (divot)
 - Rapidly progressive
 - Melting
 - No neovascular response
 - Perforated or leaking
 - Iris prolapse



Treatments Prior to Referral

- Ofloxacin or Ciloxan
- Serum or plasma
- Muro 128
- Atropine
 - Not in glaucoma
 - Not in KCS
- Lubricant
 - If KCS
 - Optixcare (purple)



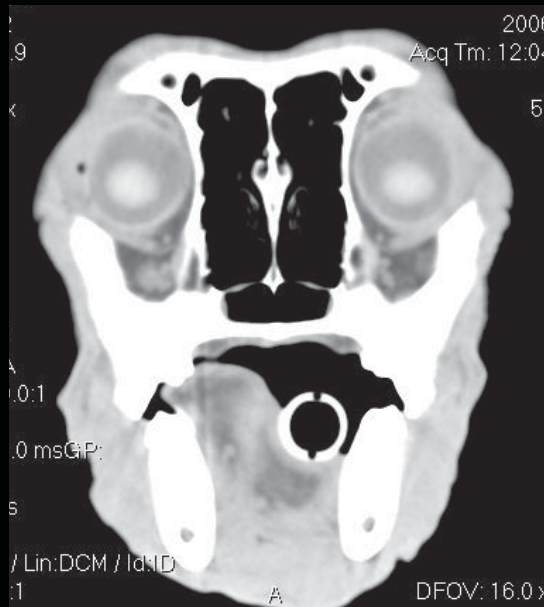
Treatments Prior to Referral

- Oral pain control
 - NSAID
 - Low dose corticosteroid
- Oral analgesic
 - Tramadol
 - Buprenorphine (cats)
- Oral antibiotics
 - Ascending infection



Orbital Disease

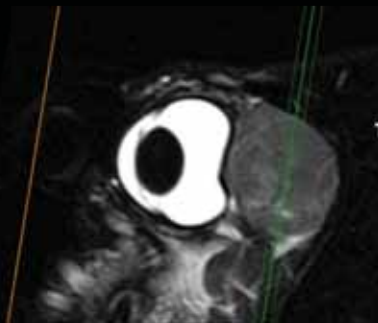
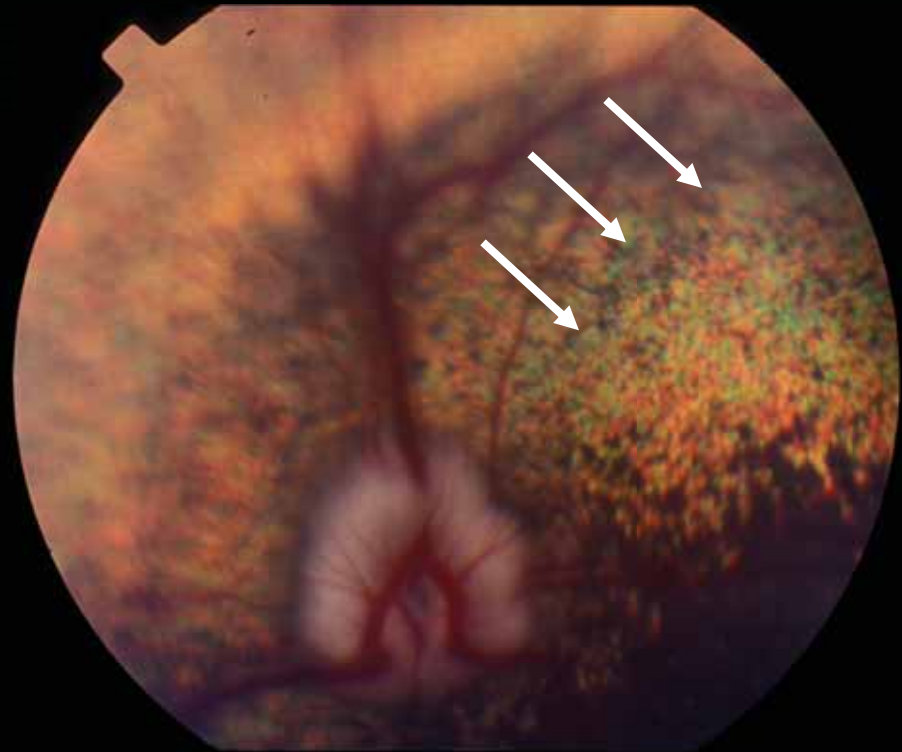
- Excellent referrals
 - Advanced imaging
 - MRI/CT
 - Ultrasound
 - Supportive care
 - Multi-specialist involvement



Bailey

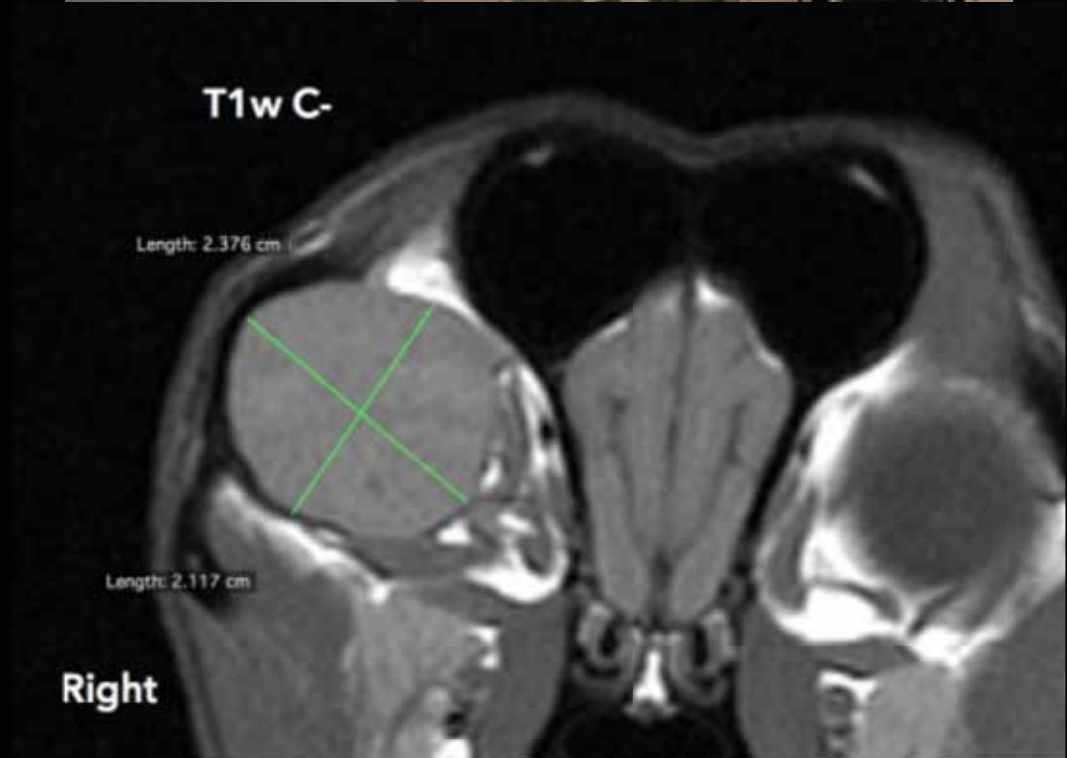
12yo MN Beagle

- Slowly progressive exophthalmos OD
- Decreased retropulsion
- No pain on opening mouth/retropulsion
- Posterior scleral indentation
- Visual OU



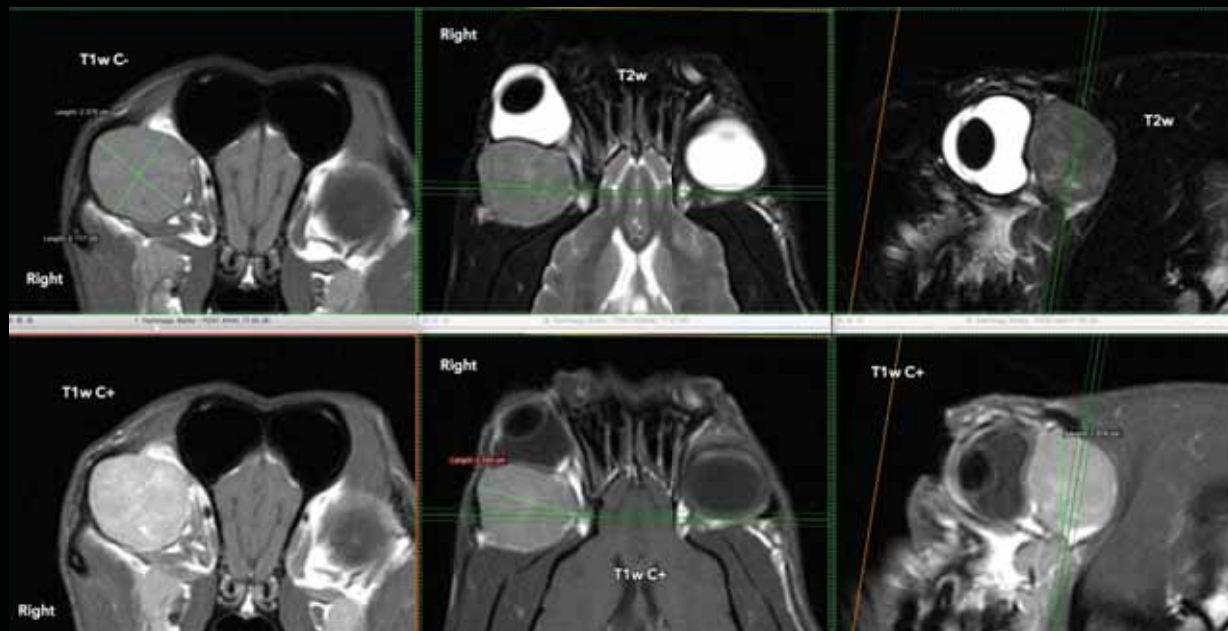
Work Up

- CBC/Chem/UA
- MRI with biopsy
- LN Aspirates
- Thoracic Rads
- Abdominal U/S



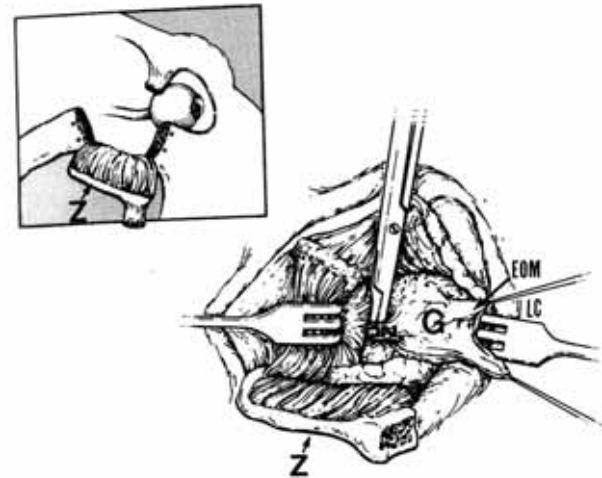
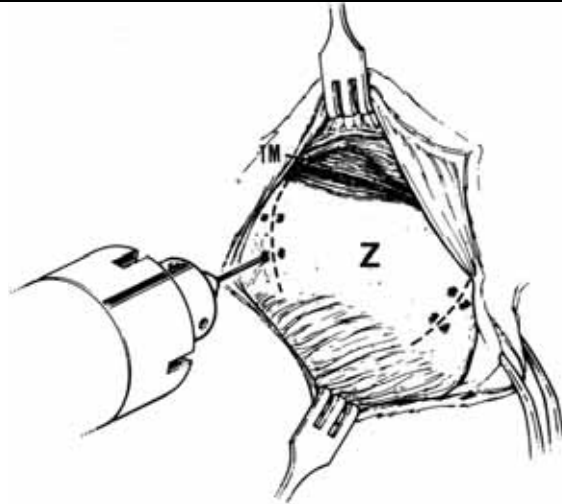
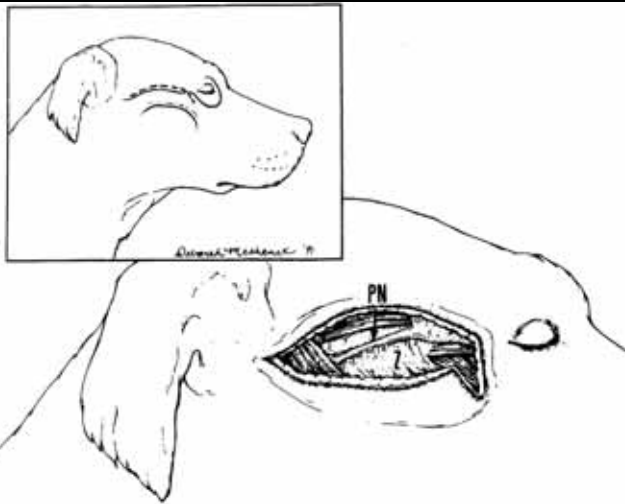
Initial Findings

- Retrobulbar mass OD
- Histo inconclusive, suspect glandular tumor
- Lymphoma in spleen and lymph nodes



Plan

- Based on recommendations DACVIM (Oncology)
- Chemo for lymphoma
- 1 week off during chemo protocol
- Exenteration vs. globe saving procedure OD
 - Owner elected save globe
 - Lateral orbitotomy surgery planned



Lateral Orbitotomy

- Assistance from DACVS (Dr. Marco Cervi)



Outcome:

Lobular Orbital Adenoma

- Visual, comfortable eye
- Good globe position
- Benign tumor



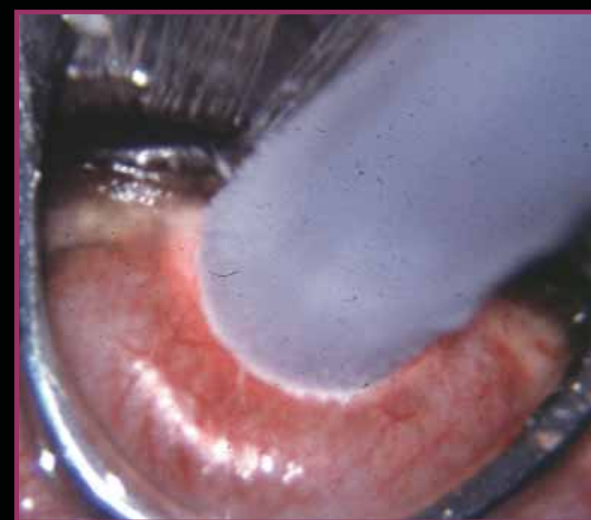
Eyelid Masses

- 85% benign
- Specialist Care
 - Larger mass
 - Suspicious cytology
 - Older dogs
 - Challenging anesthetic candidates



Adenomatous Lid Masses

- Preservation of lid
 - Debulk/Cryo
- Sedation with local anesthetic
 - Ideal in older patients, poor anesthesia candidates
- Anesthesia rarely needed
- Always submit histopathology



Adenomatous Lid Masses

- Post-op
 - BNP TID x 1 week
 - Oral antibiotic
 - Oral NSAID (if safe)
 - Oral tramadol
 - Recheck in 2 weeks
- Transient depigmentation



8yo MN Domestic Shorthair

- Large lid mass, slow growing
- Non-painful
- Normal staging



Large Lid Masses

- Challenges
 - Lid reconstruction
 - Adequate margins
 - Closure without eyelid eversion/ectropion
- Oncologist
 - Pending biopsy



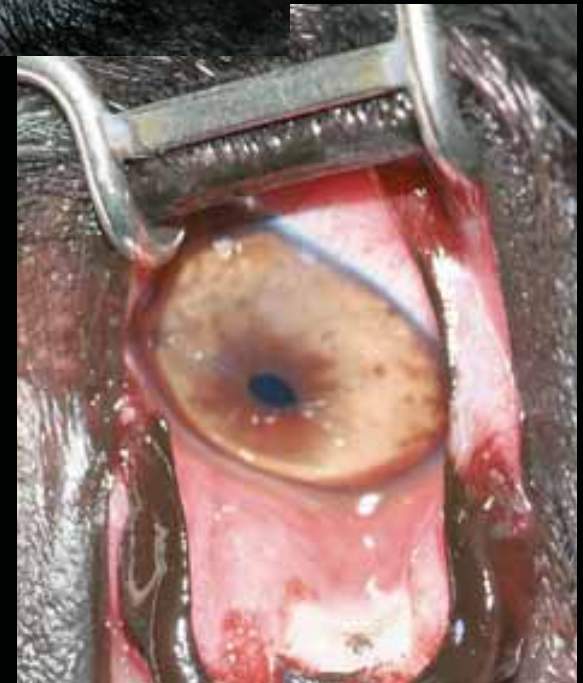
Prolapsed Nictitans Gland

- Variable training in vet school
- Can be frustrating
 - Challenging location
 - Close to cornea
 - Various procedures
 - Morgan pocket
 - Orbital rim tacking
 - Recurrence common
 - Bulldogs
 - Giant breeds



Scrolled Nictitans Cartilage

- Giant breed dogs
- Differentiate from prolapsed nictitans
- Surgery
 - Specialist procedure
 - Thermal cautery
 - Excision of scrolled cartilage



Thermal cautery of the canine third eyelid for treatment of cartilage eversion, Volume: 16, Issue: 5, Pages: 392-395, First published: 27 November 2012, DOI: (10.1111/vop.12012)

Entropion

- Blepharoplasty
- Perfection requires training and patience
- Challenging cases
 - Cats
 - Combined ectropion/entropion
 - Heavy brows
 - Chinese Shar-Pei
 - Chow Chow
 - Young animals (<1 year)



Weird Fundus Stuff

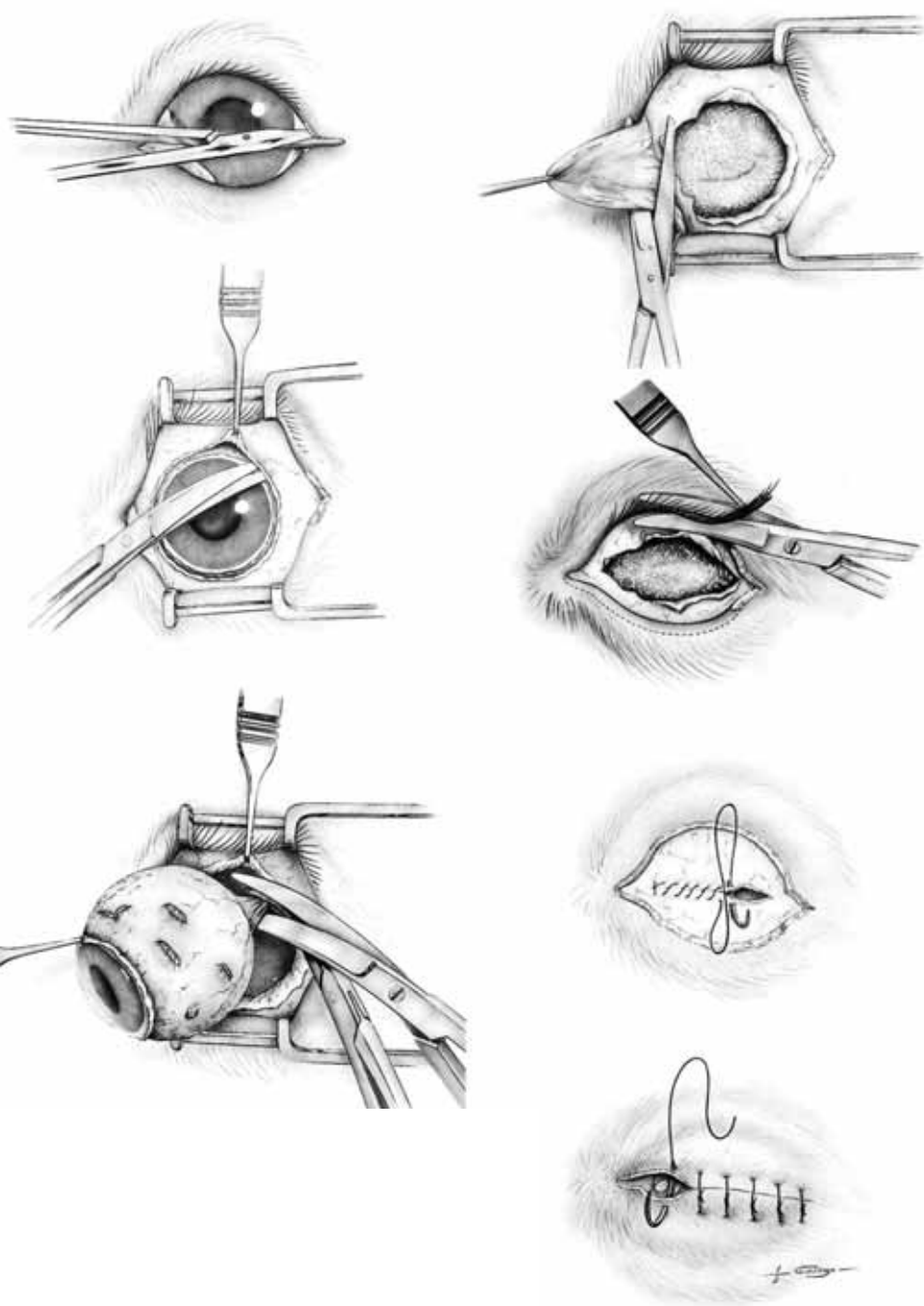
- If you don't know what it is it is probably a retinal detachment!
- Difficult to photograph/describe
- Compromised view
 - Uveitis
 - Miosis
 - Hyphema
- Advanced imaging may assist
- Referral report helps you learn!



Enucleations

- Limited training vet school
- Variable individual comfort
- Specialist
 - Efficiency
 - Cosmesis
 - Orbital prosthetic
 - Tertiary care facility
 - Older animals
 - Systemic disease
 - Brachycephalics
 - State-of-the-art pain control





Enucleation

- Pearls
 - ALWAYS Histopathology!
 - Retrobulbar block
 - Do not need to ligate optic nerve
 - Remove third eyelid, eyelid margins and conjunctiva
 - Can experiment with step order
 - No traction on optic nerve in cats especially!



THANK YOU

- Gia Klauss
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- Cecil Moore
- Denise Lindley
- Elizabeth Giuliano
- Laurence Galle
- Juri Ota
- Samantha Bishop
- Rene Backhouse

Caring For Life's
Greatest Companions

Questions

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