What Are Your Colleagues Sending?
Identifying Great Ophthalmology Referrals in Modern Veterinary Practice

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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
Descemetocele

- Acute or chronic
- Complete stromal loss
- Fluroescein 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
- Histology 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 orbitototomy 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
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

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Caring For Life’s Greatest Companions
Questions

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