An overview of Canine cataracts and their management

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Overview

- Clinical presentation and work up
- Anatomy
- Causes of cataracts
- Describing cataracts
- Treatment options
- Cataract surgery - considerations
Your next patient...

- 8 year old MN Weimaraner
- History: cloudy eyes, now bumping into things.
- Bilateral cataracts - quick onset (~1 month)
What are the next steps?

- Complete ophthalmic exam
- STT – if low affects candidacy for surgery and management of the eyes.
- IOP
- Fluorescein


What are the next steps?

- Discuss the options available to your client
  - Referral
  - Management with you
- The option to leave it be does not exist. Cataracts do not sit quietly....
Lenticular anatomy & embryology

Lens protein is foreign to the immune system

- Result – Lens induced uveitis

Lens anatomy

- Nucleus
- Lens epithelial cells
- Lens bow
- Lens capsule
# Cataract etiology

<table>
<thead>
<tr>
<th>Dogs</th>
<th>Human</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heritable **</td>
<td>Age **</td>
</tr>
<tr>
<td>Metabolic – diabetes *</td>
<td>Genetic predisposition*</td>
</tr>
<tr>
<td>Trauma</td>
<td>Lifestyle: Smoking, Alcohol, malnutrition</td>
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<tr>
<td>Uveitis</td>
<td>Systemic - corticosteroids</td>
</tr>
<tr>
<td>Toxic</td>
<td>Metabolic - diabetes</td>
</tr>
<tr>
<td>Nutritional</td>
<td>Trauma</td>
</tr>
<tr>
<td></td>
<td>Uveitis</td>
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<tr>
<td></td>
<td>Environment: UV light; x-ray exposure</td>
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</tbody>
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Classification of cataracts

- Location within the lens
- Age of onset
- Etiology
- Stage

Slatter’s Fundamentals of Veterinary Ophthalmology. 2008
Classification: Stage
Cataract surgery considerations

- Ability to give medications
  - elderly owners
  - fractious dogs
  - Time available post op
- Healing time post op
- Will it benefit the patient?
  - Retinal disease? (detachment or degeneration)
What do I do if they do not want to refer?

Medical management

- Topical NSAIDs – to treat LIU.
- Treat underlying disease
  - Metabolic disease (diabetes)
  - Ocular disease – dry eye, glaucoma.
- Regular monitoring – as frequently as monthly if IOPs elevated.
What happens when they are referred?

- Thorough ophthalmic exam
  - STT, IOP, Fluorescein
  - Slit lamp biomicroscopy and indirect

- Discuss options
  - Surgical – candidacy evaluation, surgery itself, what the post op time involves, potential complications, success rate (80-85%)
  - Medical management – goal of a quiet comfortable eye.
How we determine candidacy

- Screening tests
  - Electroretinogram (ERG)
  - Ocular ultrasound
  - Pre-anaesthetic bloodwork (CBC, Biochemistry)

- Ability to give medications
  - Client (schedule, health)
  - Patient (fractious?)
Screening tests: ERG

- ERG – measures the electric response of specific cells within the retina
- Pre-cataract surgery: 100uV
Screening tests: Ultrasound

- Screening for:
  - Retinal detachment
  - Persistent hyperplastic vitreous
  - Ruptured lens capsules

Normal cataractous lens
Cataract surgery

3 approaches

- Intracapsular
- Extracapsular
- Phacoemulsification

http://bigcountryeye.com/page4.html

http://faculty.valenciacc.edu/mludy/sensory.htm
Cataract surgery: human vs. dog

### Human
- Awake +/- sedation
- Topical anaesthetic +/- retrobulbar
- IOL (Custom)
- IOL placement – on/in bag, in pupil or anterior chamber
- Medication – up to 4 weeks post op

### Canine
- General anaesthesia
- Paralysis (atricurium)
- IOL (41 Diopters)
- IOL placement – in lens capsule/bag
- Medication – indefinitely in some
Post operative complications

- Retinal detachment
- Endophthalmitis
- Glaucoma
- Posterior capsular opacities
- Lens re-growth
Cataract surgery
Before and after

Right eye: prior to surgery

Right eye: Post op recheck
Questions?