VET 433A Lens Learning Objectives

1. Know the factors involved in lens transparency.

Non-pigmented

Avascular

Precise organization of fibers

2. Be able to recognize nuclear sclerosis on a photographic image and know the cause and treatment for this condition.

Bilateral, symmetric, greyish opacity in the center of the lens

Does not interfere with fundic exam, or vision clinically

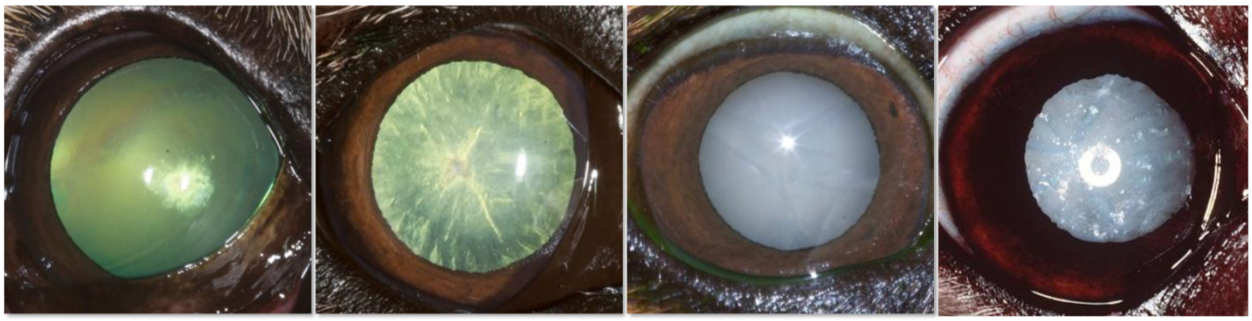
No treatment required

*Need to differentiate from cataracts!

3. Be able to recognize cataracts on a photographic image, and to classify the cataract as incipient, incomplete, complete, or resorbing based on its appearance.

Any opacity on or within the lens

Impairs vision



Etiology

Congenital (most common in young dogs)

Senile (aged dogs)

Secondary (uveitis) – most common in cats and horses

Metabolic – diabetes mellitus > alteration on lens metabolism, increased sorbitol in the lens leading to hyperosmolality and swollen lens fibers (intumescent cataract)

VET 433A Lens Learning Objectives

Hereditary

Toxic

Nutritional

Traumatic

4. Be able to list the adverse sequelae, besides blindness, associated with cataracts.

Vision Impairment

Lens-induced uveitis > secondary glaucoma

Phacolytic > intact lens capsule, slow release of abnormal lens proteins to aqueous humor> low grade uveitis

Phacoclastic > rupture of lens capsule (trauma/diabetes) > abrupt release of lens fibers, severe uveitis needing aggressive treatment

5. Be able to recognize lens subluxation, anterior lens luxation, and posterior lens luxation on a photographic image.

- Anterior lens luxation
  - Lens in anterior chamber
  - Pain, blepharospasm
  - Indistinct pupillary borders
  - Possible corneal edema
  - Possible anterior uveitis
  - Possible glaucoma (pupillary block)
- Posterior Lens Luxation
  - Lens in posterior segment
  - Deep anterior chamber
  - Vitreous in anterior chamber
  - Usually comfortable
  - Possible glaucoma
    - Less likely, mostly due to chronic uveitis
- Lens subluxation
  - Changes in AC depth
  - Aphakic crescent
  - Phacondonesis / Iridodonesis
  - Vitreous in AC
  - At risk for full luxation and glaucoma
- Causes
  - Primary

        - Zonular dysplasia (inherited) terriers
    - Secondary
        - Uveitis
        - Cataract
        - Glaucoma
        - Senility
- Treatment
    - Anterior Lens Luxation (EMERGENCY)
        - Surgical removal of lens
        - Trans-corneal lens reduction
        - Enucleation (blind with no light perception)
        - If sx is not possible, use medical therapy to maintain a low IOP
        - DO NOT USE MIOTICS! (latanoprost)
    - Posterior Lens Luxation / Lens subluxation
        - USE MEIOTICS
        - Monitor IOP and uveitis
        - May not work…