CATARACTS IN CATS: DIAGNOSIS

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INVESTIGATION
Assess patient breed and age for signalment

- Young and/or purebred Himalayan, Birman, Persian, or British shorthair
  - Suspect congenital and/or inherited cataract

- Young (<2 years) and not purebred Himalayan, Birman, Persian, or British shorthair
  - Likely secondary cataract

- Middle-aged (ie, 2-5 years)
  - Likely primary (Birman cats) or secondary cataract

INVESTIGATION
Gather patient history:
- Pertinent ocular history
- Trauma
- Cloudiness
- Haziness
- Decreased or absent vision

- Menace response
  - Absent: Mature cataract, chronic uveitis, or retinal detachment
  - Present: Immature cataract or nuclear sclerosis

- Pupillary light reflexes
  - Normal: Primary cataract
  - Miosis and/or difficulty assessing suggests uveitis

- Fluorescein stain
  - Positive if trauma to cornea has occurred

INVESTIGATION
Evaluate lens for opacity
- Dilate with tropicamide unless elevated IOP or lens luxation

- Intraocular pressure (IOP)
  - Decreased: Anterior uveitis may be present
  - Increased: Primary or secondary glaucoma may be present or cause of cataract may have resolved (ie, transient uveitis)

- Anterior chamber assessment
  - Normal: Could denote primary cataract
  - Abnormal: Anterior uveitis is present (eg, flare, hypopyon, hyphema, keratic precipitates on corneal endothelium)

DIAGNOSIS
Nuclear sclerosis
- Cloudiness, bluish discoloration (evenly distributed), and rounded
- Center of lens
- Functional vision not affected
- Bilateral and symmetrical
- Tapetal reflection and fundus still visible

DIAGNOSIS
Cataract
- White and opaque (dependent on maturity)
- Vision possibly affected
- Tapetal reflection and fundus partially or completely obscured

TREATMENT
No treatment needed

IOP = intraocular pressure
Stage of progression

INVESTIGATION

Vision present?

YES

NO

Hypermature cataract
▶ Advanced
▶ Shimmering areas
▶ Wrinkled anterior lens capsule
▶ Tapetal reflection may or may not be present

Present and decreased

Present and unchanged

Hypermature cataract
▶ Advanced
▶ Shimmering areas
▶ Wrinkled anterior lens capsule
▶ Tapetal reflection may or may not be present

Present and decreased

Present and unchanged

Immature cataract
▶ 15%-99% lens volume

Incipient cataract
▶ <10%-15% lens volume

Early immature cataract

Primary hypoparathyroidism
▶ <10%-15% lens volume

INVESTIGATION

Location

Subcapsular
▶ Capsular
▶ Cortical
▶ Nuclear
▶ Equatorial

Secondary (most common)

Uveitic (most common)
▶ May see posterior synechiae, rubeosis iridis, aqueous flare, fibrin, keratic precipitates, miosis, low IOP
▶ IOP will be elevated if secondary glaucoma develops

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Lens luxation
▶ In cats, usually secondary to uveitis

Glaucma
▶ Primary
▶ Secondary (more common in cats): Uveitis, neoplasia

Arginine deficiency from milk replacer
▶ No longer an important cause because of commercial products
▶ May diminish with age
▶ Diffuse anterior and posterior lens opacification and vacuolations

Idiopathic
▶ Immune-mediated
▶ Diagnosis of exclusion
▶ Mostly affects middle-age to older cats
▶ Affects 1 or both eyes
▶ Iris nodules, keratic precipitate, fibrin, cataract, glaucoma
▶ Usually not painful
▶ May result in enucleation if long-term therapy fails

Neoplastic

Protozoal
▶ Toxoplasma gondii

Metastatic:
▶ Lymphoma
▶ Hemangiosarcoma
▶ Adenocarcinoma

Fungal
▶ Blastomyces dermatitidis
▶ Coccidioides immitis
▶ Histoplasma capsulatum
▶ Cryptococcus neoformans
▶ E. cuniculi

Protozoal
▶ Toxoplasma gondii

Bacterial
▶ Septic lens implantation syndrome

Viral
▶ Feline immunodeficiency virus
▶ Feline leukemia virus
▶ Feline infectious peritonitis

Primary
▶ Diffuse iridal melanoma
▶ Trauma-associated sarcoma (highly malignant)

Infectious

See page 30 for references and suggested reading.
CATARACTS IN CATS: TREATMENT

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INVESTIGATION
Uveitis present?

NO

YES

TREATMENT
Pursue therapeutic management and monitoring to:

- Stabilize blood-aqueous barrier, decrease inflammation to preserve vision
- Treat ocular pain
- Prevent and/or minimize sequelae
- Treat clinical signs
- Treat underlying condition

CATARACT IDENTIFIED

Steroidal (eg, prednisolone acetate)
- May negatively affect corneal health
- Avoid if corneal ulceration is present, as these drugs may delay healing

Nonsteroidal (eg, flurbiprofen, ketorolac, diclofenac)
- Not as effective as steroids, but may be used when steroids are contraindicated
- May be used as adjunctive therapy
- Use caution with topical NSAIDs, which can affect glomerular filtration rate

Prednisolone
- 1-2 mg/kg once a day
- Taper to lowest possible dose as uveitis resolves
- Use if topical medications are not effective and infectious disease is ruled out

Robenacoxib or meloxicam (extralabel)
- Efficacy is questionable, but drug may be useful when steroids are contraindicated (eg, while looking for neoplastic or fungal cause)

Administer topical anti-inflammatory drugs (steroidal and/or nonsteroidal) 1-4 times a day

Administer mydriatic to treat cycloplegia and prevent synechiae formation

Atropine, tropicamide
- Every 8 to 24 hours or every other day, depending on severity
- Tropicamide duration is shorter and strength is less potent than atropine, so dosing may need to be more frequent
- Atropine ophthalmic ointment is recommended in cats, as atropine solution is bitter

Administer systemic anti-inflammatories (NSAIDs or corticosteroids)

Treat clinical signs as necessary and monitor

Small, nonprogressive cataract; vision not affected
Monitor every 3-6 months for 1 year for cataract progression and/or inflammation; then monitor yearly or if clinical signs progress

Dense, progressive cataract; vision significantly affected
Treat underlying cause or diagnose as primary cataract

TREATMENT

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**INVESTIGATION**
Perform preoperative screening
- Minimum database (CBC, serum chemistry profile, urinalysis)
- Electoretinography to evaluate retinal function
- Ocular ultrasonography to rule out retinal detachment

**TREATMENT**
Pursue medical management
- Phacoemulsification
- Enucleation
- Intracapsular lens extraction

**TREATMENT**
Pursue surgical management
- Phacoemulsification
- Enucleation
- Intracapsular lens extraction

Phacoemulsification (best option for primary cataract)
- Consider if:
  - Primary or congenital cataract
  - Underlying disease treatable and under control

Not recommended if:
- Chronic uveitis present
- Secondary cataract
- Glaucoma present
- Retinal dysfunction or detachment present
- Neurologic signs present and suggestive of lesions in visual cortex

Enucleation
- Traumatic cataract with severe phacoclastic uveitis

Intracapsular lens extraction
- Lens luxation
- Prognosis depends on duration and underlying cause

Reference
References

References (cont.)

Suggested Reading