

# Painful Ocular Lesion

Dennis E. Brooks, DVM, PhD, Diplomate ACVO, University of Florida

**Case Presentation.** A 12-year-old, spayed female Labrador retriever was diagnosed with diabetes mellitus 4 months previously. The diabetes was believed to have been controlled with insulin, but blindness and blepharospasm developed in the past week. Ophthalmic findings are listed in the Box.

**Diagnosis.** Diabetic cataracts with iridocyclitis and suspected choroiditis

### Ophthalmic Findings

Blepharospasm in both eyes.

Schirmer's tear test: 15 mm wetting/minute in both eyes

Dazzle reflex: Brisk in both eyes

Pupillary light response: Slow, but present in both eyes

Intraocular pressure: 5 mm Hg in both eyes

Fluorescein: Negative

Cornea: Subtle stromal edema causing slight haze in both eyes

Anterior segment: Slight aqueous flare in both eyes; iris sphincter atrophy

Lens: Immature cortical cataract with spoke wheel opacities in both eyes (**Figure 1**)

Electroretinogram: Low normal-amplitude a- and b-waves at both low and high flash intensities



### ASK YOURSELF ...

The intraocular inflammation, while not especially severe in this case, must be controlled before cataract surgery. How is the inflammation of the iris, ciliary body, and choroid most effectively treated in this diabetic dog?

- A. Topically administered corticosteroids
- B. Subconjunctivally administered corticosteroids
- C. Topically administered corticosteroids and topically and systemically administered NSAIDs
- D. Systemically administered corticosteroids
- E. Systemically administered NSAIDs.

continues

NSAIDs = nonsteroidal antiinflammatory drugs

## INSIGHTS FROM CLINICAL CASES . DISCUSSION

### Correct Answer: C Topically administered corticosteroids and topically and systemically administered NSAIDs

#### The Correct Answer Explained ...

The status of insulin regulation should be carefully monitored in small-breed dogs in case the topical steroids alter the amount of insulin required. Diabetes mellitus is generally a contraindication to systemic corticosteroid therapy, and although topical therapy may temporarily alter an animal's insulin requirements, the clinician must weigh the benefits against the risks. Systemic and subconjunctival corticosteroids may adversely affect the ability to properly regulate diabetes.

The most common ocular manifestation of diabetes mellitus in small animals is cataracts, which may develop acutely and cause sudden blindness. Varying degrees of inflammation of the iris, ciliary body, and choroid are frequently found with rapid onset of cataracts due to leakage of lens proteins through the intact lens capsule (lens-associated uveitis).

#### Increasing Surgical Success

The degree of lens-associated uveitis varies substantially among individual patients, but all diabetic dogs with cataracts have some degree of uveitis.<sup>1,2</sup> The clinical signs are most obvious in the anterior part of the eye but are found in the posterior segment as well. Recognition and treatment of uveitis are important before cataract surgery is considered, because uveitis increases the likelihood of postoperative complications of cataract surgery and decreases its success rate. Ocular pain in uveitic eyes arises from prostaglandin release into the inflamed ocular tissues and spasm of the ciliary body muscles.

Ocular tissues reached by topical drug administration include the conjunctiva, cornea, iris, and ciliary body; in general, topical medications cause only slight systemic effects. Ocular tissues reached by systemic routes include the eyelids, iris, ciliary body, choroid, retina, optic nerve, and vitreous. Ocular inflammation breaks down the blood–aqueous barrier, so systemic drugs can more easily enter inflamed parts of the eye.

#### Topical vs. Systemic

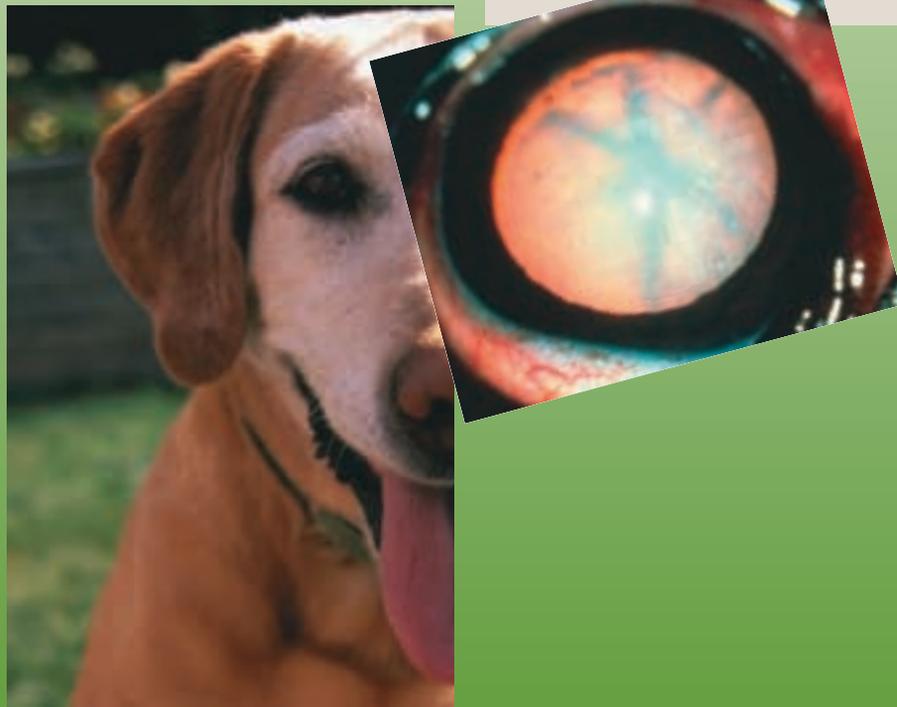
Topical therapy alone may suffice in diabetic dogs with mild anterior uveitis, but systemic therapy is indicated for eyes with severe anterior and posterior uveitis. Both NSAIDs and corticosteroids are effective when used alone, but their therapeutic effects are additive. NSAIDs inhibit prostaglandin-mediated inflammation by interrupting the cyclooxygenase pathway, whereas corticosteroids inhibit phospholipase and the release of arachidonic acid. ■

See Aids & Resources, back page, for references, contacts, and appendices.

#### TAKE-HOME MESSAGE

Medical management of lens-associated uveitis in the canine diabetic patient is as follows:

- **Topical NSAIDs: Q 8 H flurbiprofen (Ocufen), suprofen (Profenal), or diclofenac (Voltaren)**
- **Systemic NSAIDs: carprofen (Rimadyl), 2 mg/kg PO Q 12 H, or etogesic (Etodolac), 15 mg/kg PO Q 24 H**
- **Topical 1% atropine: Q 12 H stabilizes the blood–aqueous barrier, minimizes pain from ciliary muscle spasm, and causes pupillary dilatation**
- **Topical 1% prednisolone acetate or 0.1% dexamethasone acetate is critical: both penetrate the intact cornea and are quite potent**



NSAIDs = nonsteroidal antiinflammatory drugs