A Case of Canine Glaucoma

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Auburn University, College of Veterinary Medicine (AUCVM)
4-year-old, castrated male, Labrador retriever mix

One-week history of blepharospasm (OD)

Intraocular pressure (IOP): 50-mmHg
  - Normal: 12-mmHg to 25-mmHg

Placed on triple antibiotic ophthalmic ointment and referred to the AUCVM
Right eye: blepharospasm, buphthalmia, aqueous flare, corneal edema, posterior synechiae, vascular attenuation, cupped optic disc, IOP of 47-mmHg

Left eye: reportedly unremarkable

CBC and chemistry values: WNL

Treated with latanoprost and dorzolamide (decrease IOP) and tramadol (pain relief)
  ▪ Owners opted for enucleation of the right globe
CORNEAL EDEMA

H&E

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CLOSED IRIDOCORNEAL ANGLE

500-um

H&E

100-um
POSTERIOR SYNECHIAE

H&E

100-um
RETINAL DEGENERATION

Nerve fiber layer
Inner plexiform layer
Inner nuclear layer
Outer plexiform layer
Outer nuclear layer
Rods and cones
Right globe: Lymphohistiocytic endophthalmitis, multifocal, scant, subacute with iridocorneal angle closure, posterior synechiae, retinal degeneration and atrophy, and corneal stromal edema
BUT WAIT

THERE'S MORE
RIGHT GLOBE: Goniodysgenesis with minimal lymphohistiocytic endophthalmitis, iridocorneal angle closure, posterior synechiae, retinal degeneration and atrophy, and corneal stromal edema
GONIODYSGENESIS

- Congenital anomaly of the iridocorneal angle
  - Abnormal intraocular fluid egress

- Risk factor for development of primary glaucoma

- Associated with abnormal development of:
  - Pectinate ligament
  - Trabecular meshwork
  - Ciliary cleft

- Absence of concurrent ocular or systemic disease
GONIODYSGENESIS

- Hallmark histologic feature:
  - Solid sheet of iridal tissue extending to the distorted terminus of Descemet’s membrane³

- Although congenital, clinical signs in dogs manifest at 4-8 years of age⁴,⁵

- Following diagnosis in one eye, the contralateral eye may also develop glaucoma
  - Clinical course can range from days to years
REFERENCES


