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GLAUCOMA

What is it? Increased pressure in the eye. Untreated elevations of pressure in the eye – called intraocular pressure - ultimately causes injury to the retina which results in permanent blindness.

Causes of glaucoma fall into two major categories:

- 1) Primary glaucoma – this is caused by anomalies in the patient's eye that relate to the production and drainage of the liquid (aqueous humor) of the eye
- 2) Secondary glaucoma – there is an underlying disease or problem that results in changes in the flow and drainage of the liquid in the eye.

Who gets it? Glaucoma is most common in dogs. Primary glaucoma typically occurs in middle aged dogs (4-9 years old) and breeds that are pre-disposed, including Cocker Spaniels as well as other spaniel breeds, Arctic breeds (Husky, Samoyed, Malamutes, etc), Chows, Shar Peis. Secondary glaucoma can occur in any dog since it is the underlying disease that causes the glaucoma. However, a subset of secondary glaucoma is caused by luxation (or displacement of) the lens in the eye. This occurrence is more common in Terriers.

Cats get glaucoma too – they, however, almost always get secondary glaucoma and are almost always older (>6years).

What are the clinical signs? Most people first notice a red eye and blindness. Other signs include pain, excessive blinking and tearing of the eye, a more bulged appearance to the eye, hazy grey color to the cornea, and dilated pupils.

Some dogs will bump into things, paw at their faces, or become very lethargic.

How is it diagnosed? A special piece of equipment called a Tonometer is required to measure the pressure in the eye. Experienced veterinarians may be suspicious that glaucoma is present in a symptomatic eye simply by pressing on the eye – the glaucomatous eye feels “harder” than normal. However, the veterinarian should still measure the pressure in the eye because other conditions can affect how firm or soft the eye feels.

Sedation is not required. Typically a topical anesthetic is placed on the cornea, and the tonometer is very lightly tapped or placed on the eye to measure the internal pressure of the eye.

How is it treated? There are two phases to treating glaucoma:

- 1) In the acute or emergent phase, immediate measures are taken to decrease the pressure in the eye. In most cases, this requires hospitalization for administration of IV medications, as well as serial monitoring of the intraocular pressures. Generally, topical medications in the eye are started as well.
- 2) The long term phase of therapy depends on if there is primary or secondary glaucoma. Primary glaucoma has the best chance for long term vision if surgery is pursued. Surgical procedures are either aimed at decreasing the production of aqueous humor or improving the drainage of this fluid from the eye. For secondary glaucoma, identifying and treating the underlying cause is important.

3) For all cases of glaucoma, treating for pain is an important component of therapy.

What is the aftercare? Most of the time chronic medication of both eyes is required to maintain pressures in normal ranges and to minimize chances for loss of vision. Immediately after diagnosis, daily monitoring of pressures may be required, but once the condition is under control, intermittent measurement/recheck is all that is necessary. For some dogs that have suffered irreparable injury to the eye or develop chronic pain, removal of the eye may become necessary.

What is the prognosis? Primary glaucoma can often be managed in the short term. However, primary glaucoma is almost always going to affect both eyes. Unfortunately, almost 50% of dogs can develop glaucoma in the opposite eye within 8 months. Forty percent of dogs will become blind in the affected eye, even if everything is done correctly. Primary glaucoma treated with medical management alone (i.e. no surgery) will result in blindness within a year for 90% of patients. Dogs that have treatable underlying disease causing secondary glaucoma may have a much better prognosis if vision can be saved in the initial phase of diagnosis. Dogs that have lens luxations have a good return to function if the lens can be removed prior to permanent retinal injury occurring.