

Glaucoma

Glaucoma is a medical condition in cats and dogs which describes an increase in the pressures within the eyes (intraocular pressure). The eye is typically filled with a clear fluid called aqueous humor. The ciliary body produces this fluid within the eye, and it is drained out of the eye through a sieve-like network located between the iris and the cornea. Usually the eye makes enough fluid to replace the fluid that is lost through the drain. However, in glaucoma the fluid builds up in the eye, causing increased pressure in the eye. When the pressure in the eye rises it leads to increased pressure on the eye cells on the nerve and the retina and results in blindness. Normal pressure in the eye is 15 to 25mmHg. Glaucoma can happen in a matter of hours and pressure such as 80 to 90 mmHg can be seen. Increased pressure not only causes blindness but is very painful to your pet.

With early aggressive treatment of glaucoma pet's can regain vision and the damage to the nerves and retina can be reversed. Untreated glaucoma will lead not only to permanent blindness but will result in a painful blind eye.

In general, there are two broad categories of causes of glaucoma: primary vs secondary causes. Primary glaucoma occurs without any previous history of eye disease. There are certain pure breeds that are predisposed or have a genetic defect that will lead to primary glaucoma. It can further be divided into open angle or closed angle glaucoma where the angle between the iris and the cornea affects the drainage of the fluid. (Remember the fluid is supposed to drain out of the eye between the iris and the cornea)

Secondary glaucoma occurs when other eye diseases predispose the eye to fluid retention. These things include lens luxation, trauma to the eye, or severe inflammation of the eye.

The goals of therapy include preservation of the eye, vision, and to maintain a pain free eye. Sometimes it is not possible to preserve vision, but we can maintain the eye and keep the patient comfortable. If we cannot preserve vision and the eye remains painful, we may recommend enucleation or removal of the blind painful eye.

Diagnosis of glaucoma is based on history, clinical signs, and measurement of eye pressure. This is done with a handheld measuring device. Once we confirm that your pet's eye pressure are elevated, we may recommend referral to an ophthalmologist to have the iridocorneal angle evaluated. This can help us give you a prognosis for whether the other eye has a risk of developing glaucoma.

Treatment of glaucoma includes many eye drops and follow up care. This may require a brief period of hospitalization. During periods of hospitalization, osmotic diuretics may be given orally or intravenously to reduce the intraocular pressure quickly. Once the pressure has been

controlled, maintenance levels of medications are prescribed for long-term therapy. Medications that are commonly used include those that are aimed at improving the outflow of aqueous humour or suppressing its production. Drugs that can improve aqueous outflow include pilocarpine and latanoprost. Other medications designed to reduce the aqueous production include carbonic anhydrase inhibitors and beta-blockers. Unfortunately, medical management of glaucoma is often unsuccessful in veterinary patients, and the initial response to medication may be short-lived. In some instances, it is impossible to control the pressure with medications alone and a variety of surgical techniques have been developed to aid in the control of pressure. Surgeries for glaucoma can be divided into vision saving procedures and surgeries of comfort. Vision saving procedures are an option for patients with acute glaucoma that still have vision.