

# GLAUCOMA

## **WHAT IS GLAUCOMA?**

Glaucoma is defined as increased pressure within the eye that causes degenerative changes in the optic nerve and retina with subsequent blindness.

## **WHAT CAUSES GLAUCOMA?**

Cells inside the eye behind the iris, called the ciliary epithelium, continuously make the fluid (“aqueous humor”) that fills the front portion of the eye. Glaucoma develops when the normal flow of this fluid out of the eye is impaired. In most cases, this is caused by a hereditary defect where the filtering mechanism (“filtration angle”) around the periphery of the iris is blocked off. This is referred to as “primary glaucoma” and is most commonly seen in pure bred dogs, such as the Cocker Spaniel, Basset Hound, Bouvier, Springer Spaniel, Beagle, Shar Pei, Chow Chow, as well as many others. “Secondary glaucoma” refers to increased pressure in the eye due to other diseases such as anterior uveitis (inflammation inside the eye), lens luxation (dislocation of the lens from its normal position), and hyphema (bleeding inside the eye).

## **WHAT ARE THE SIGNS OF GLAUCOMA?**

- red eye
- cornea may turn blue
- pain
- the pupil may be dilated
- watery discharge from the eye
- blindness
- enlargement of the eye

## **HOW IS GLAUCOMA TREATED?**

Rapid diagnosis and treatment (within 72 hours of onset) are necessary to save vision once glaucoma has developed. Before referring you to the ophthalmologist, your veterinarian may have given your pet some medications and/or eye drops; these help to start treating the glaucoma, however, they cannot control the pressure on their own. To effectively decrease the pressure in the eye, a route needs to be created for the aqueous fluid to drain from the eye. An experimental implant called the “Frontal Sinus Shunt” has been showing promising results. The shunt is a plastic tube with a valve on the end that controls the pressure of fluid allowed to pass through. The shunt is placed under the upper eyelid with the tube end inside the eye in the anterior chamber (behind the cornea, in front of the iris), and the valve end inside the hollow sinus cavity just above the eye. For implantation of the shunt, your pet will be placed under anesthesia and the ophthalmologist will make an incision in the skin above the eye, create a hole through the bone into the sinus cavity, place the valve into the sinus, then run the tube under the eyelid and into the eye. Once the shunt is in place, aqueous fluid slowly drains up through the tube and into the sinus cavity.

If glaucoma has been present for 72 hours or more, irreversible damage has been done to

the nerve and vision cannot be saved. In this case, one of two surgeries can be performed to eliminate the pain:

- enucleation - the eye is removed and the lids are sewn shut.
- silicone implant - the contents of the inside of the eyeball are removed - leaving the sclera and the cornea (the white of the eye and the clear part at the front) - and a silicone ball is placed inside. The shape of the eye is maintained and the eye moves normally. This procedure is for cosmetic purposes only. The clear cornea usually turns a hazy bluish colour with time.

### **WHAT HAPPENS AFTER TREATMENT?**

Once the pressure has been stabilized, it is very important that the pressure in both eyes be monitored on a 3 month basis for the first year, then every 6 months after that. This may be performed at our office or at your regular veterinarian's, depending on the situation. Due to the genetic nature of primary glaucoma in the pure bred dog, the other eye has a very high chance of developing glaucoma as well. The ophthalmologist will likely start preventive eye drops in the good eye. In some instances, it may even be necessary to perform laser therapy on the good eye.

### **WHAT WILL I NEED TO DO AT HOME?**

- Your pet's eye will remain slightly red and inflamed for about 2 weeks after glaucoma surgery. If redness or pain begins to increase or if vision deteriorates, call us immediately.
- Keep the head collar on at all times (even at night).
- Your pet will go home on several eye drops and oral medications after surgery, these meds will be slowly decreased by the doctor. Some animals have to remain on medications for a long period of time. Be sure to give all meds at the appropriate times.
- When using eye drops, be sure to hold the lids open so the medication is placed onto the eyeball. Wait 5 minutes between different drops so as not to flush out the previous medication before it has been absorbed. Often dogs with glaucoma do not blink properly, therefore the eye needs to be lubricated with an ointment - always apply this ointment AFTER all the drops have been given.
- Wipe away any discharge from the eye with a clean, moist Kleenex or face cloth.
- Keep your pet quiet until directed otherwise by the doctor.

