

Glaucoma in the Lhasa Apso

by Jenny Drastura

Lhasa Apsos are susceptible to a number of eye conditions, including dry eye, cataracts and progressive retinal atrophy (PRA). There is one condition, however, that is often overlooked until it is too late. That is glaucoma, the most devastating eye disease a Lhasa, or any dog, can develop.

In the past, it has been thought that glaucoma is caused by increased intraocular pressure (IOP) in the eye. However, in recent studies, changes in the optic nerve and retina have been observed *before* the IOP is elevated, making increased IOP a risk factor rather than the primary cause. IOPs in excess of 25 to 30 mm Hg in dogs (and cats) are generally troubling. The elevated IOP results from inadequate drainage of the aqueous humor—the clear, watery fluid in the front part of the eye. In addition to blindness, the disease causes the dog a great deal of pain.

Primary glaucoma is classified as either open angle or closed angle in both human and veterinary medicine. Open-angle glaucoma, generally milder, chronic and more responsive to treatment, is most common in people. In dogs, most cases are closed angle, marked by an acute, marked increase in IOP, accompanied by pain and acute vision loss. The pattern of inheritance is unknown.

The most dangerous thing about glaucoma is that many veterinarians are unaware the disease is in a particular breed, according to Dr. Kerry Ketring, DVM, DACVO (diplomate in the American College of Veterinary Ophthalmologists), in private practice in Cincinnati, Ohio. “Often the redness and discomfort is treated as conjunctivitis or some other condition,” said Ketring. “By the time I see the dog in my practice, it may be already blind in one eye and the disease is progressing in the other. Often my only option is to remove the eye and perhaps put in a prosthetic eye to maintain comfort for the dog.”

Glaucoma As a Secondary Disease

There are a number of secondary causes of glaucoma; for example, due to an injury, retinal detachment or lens luxation, manifesting in 24 to 48 hours. *This is a medical emergency!*

Signs of Glaucoma

Pain is usually not conspicuous in the early stages of glaucoma, but occasionally you may see your dog trying to hold his eye open or blinking frequently. You may see redness to the eye, cloudiness in the cornea, impaired vision, and a fixed, dilated pupil. As the pressure increases, the dog may not want his head or face to be touched, he may cry, or he become lethargic or anorexic. The cornea may eventually become enlarged (megalocornea). Untreated chronic glaucoma will surely progress to total blindness.

Diagnosis

Chronic glaucoma is easily diagnosed. The IOP is measured with a tonometer; the Tono-Pen being the most common type used. The doctor will look for such signs as chronic

corneal edema (buildup of excess fluid) and white irregular streaks. She may also detect concurrent conditions such as secondary cataracts, corneal ulcers, mechanical injuries and subluxation or luxation of the lens. The latter condition is caused by dislocation of the lens or by blockage of the pupil by the lens or vitreous (the fluid that fills the main cavity of the eye between the lens and the retina). Some light perception is sometimes present in even advanced cases of glaucoma.

Ophthalmologists can perform additional tests to determine the type of glaucoma or predict latent tendencies toward the disease. Electroretinography can determine if the eye will remain blind despite treatment. In secondary diseases, X-rays and an ultrasound may show abnormalities within the eye.

Treatment

The aim of treatment in most chronic cases is to keep the dog comfortable and pain free. Lowering the IOP is vital, as well as giving medication to either increase drainage of or reduce the production of aqueous fluid. This is not a cure, but it can help stop or slow the progression. In some cases, the optic nerve can be damaged beyond repair and surgery will be required.

Several surgical procedures are available and depend on the cause and progression of the disease. Cyclocryotherapy uses cold temperatures to kill the cells that produce intraocular fluid. If found early, this procedure may slow or stop further progression. As mentioned earlier, a dog who is already blind and suffering from pain may benefit from the removal of the affected eye. The eye can be sewn shut or a prosthetic eye can be inserted.

It is vital that the veterinarian also start aggressive treatment in the remaining eye, even if clinical signs are not apparent. "Intraocular pressure causes tremendous pain, even in the early stages," said Ketring. "Since blindness due to glaucoma is irreversible, the outcome is often removal of both eyes. If this does happen, however, blind dogs that are comfortable adapt very well to their own environment. It is much better than being in chronic pain."

If any of the above-mentioned signs appear in your dog, suggest that your veterinarian test for glaucoma in addition to other disease. Early detection and treatment may save your dog's eyesight.

Sources

Armour, Micki, VMD, DACVO. "A new way of looking at glaucoma," *DVM360*, July 7, 2015.

Ketring Kerry, DVM, DACVO. Phone interview.

Peiffer, Jr., Robert L. and Simon M. Petersen-Jones. *Small Animal Ophthalmology*, W.B. Saunders, London, 1999.