ADVANCED CARE FOR PETS

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VETERINARY SPECIALISTS & EMERGENCY CENTER

Cataracts

A cataract is an opacity (clouding) which develops in the normally translucent lens within the eye. In a normal eye, the clear cornea allows light to enter. The pigmented iris controls the amount of light entering the eye by changing the size of the pupil. Light passes through a clear lens, which is surrounded and supported by a capsule, then through the vitreous (a clear gel that fills the back portion of the eye). The light is focused onto the back of the eye, the retina, creating an image. In an eye with a cataract, light is prevented from passing through the lens normally, interfering with vision.

The lens itself consists of layers of protein held together by a fibrous capsule. The arrangement of the protein layers allows the lens to be transparent. A biochemical pumping mechanism within the cellular layer of the lens capsule keeps the protein layers relatively dehydrated compared with the surrounding fluid environment of the eye. A cataract forms when more fluid enters the lens proteins than is pumped out. This fluid causes the proteins of the lens to swell, interrupting their transparent arrangement, resulting in a cataract. The word cataract is of Latin derivation, and means a waterfall.

In most dogs, cataracts are a result of a hereditary disorder, in which the parents may be normal-eyed carriers of the trait. Popular breeds that often develop cataracts include American Cocker Spaniels, Bichon Frise, Poodles, Min. Schnauzers, and Siberian Huskies. The cataracts in these breeds are often juvenile in onset, and may occur suddenly.

Occasionally, cataracts may occur as a result of aging. However, as all dogs age, the lens normally hardens (lenticular sclerosis), affecting the ability to focus, but not substantially affecting vision. Cataracts can also occur due to metabolic disorders such as diabetes, and from previous trauma or inflammation within the eye.

Cataracts occur less frequently in the cat, and often are associated with chronic inflammation and/or lens luxation.

Rapid onset cataracts as seen with diabetes or juvenile cataracts are often associated with lens-induced uveitis. The presence of the cataract acts as a foreign body within the eye, causing an inflammatory reaction. It is important that this inflammation be controlled with appropriate topical anti-inflammatories, to prevent inflammatory changes within the eye.

Presurgical Evaluation

One goal of the presurgical evaluation is to try to rule out preexisting eye problems which may influence the success of cataract surgery in restoring vision. Changes behind the cataractous lens often cannot be evaluated directly. The vision history, along with the examination findings is used to predict the possibility of underlying retinal and/or optic nerve disease in a cataract patient. More definitive presurgical evaluations, including an electroretinogram (ERG) and/or ocular ultrasound may be indicated to rule out the possibility of retinal disease or detachment.

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Cataracts *continued*

Cataract Surgery

The treatment of cataracts is surgical removal. One or both cataracts may be removed at one time. It is generally recommended that cataracts be surgically removed as soon as possible before the cataract material hardens in consistency, or causes severe cataract-induced inflammation, with associated complications such as glaucoma or dislocation of the lens.

There are two techniques presently used in the removal of cataracts. One is phacoemulsification, which utilizes ultrasonic energy to break up and liquefy the cataract that is aspirated from the eye. The second is extracapsular cataract extraction, which utilizes a larger incision into the upper cornea and lens capsule to allow the cataractous lens to be removed in one piece. Every attempt is made to insert an artificial lens, that helps the pet adapt to the new vision, but this is not always possible.

Cataract surgery is permanent- the lens does not grow back. Occasionally, however, the posterior capsule of the lens, which is left is place with both surgical techniques, may get fibrotic, or cloudy in appearance. This usually has no detrimental effect on the restored vision.

After the scheduled surgery, the pet stays in the hospital 24-48 hours to monitor the surgical eye(s) for possible complications.

Success

The success achieved in cataract surgery has markedly increased within the last five-ten years, due to the increased understanding of the response of the eye to a cataract, and improved surgical techniques and instrumentation. Cataract surgery is highly successful in restoring good, functional vision. As in most aspects of medicine, there are no guarantees of success given to owners whose pet is undergoing cataract surgery.

Limitations/Potential Complications

Cataract surgery is advised when it is felt to be the most beneficial mode of treatment for the patient. It is our goal to explain the benefits of cataract surgery as well as the limitations and possible complications associated with it. Possible complications of cataract surgery are similar to those in humans, including secondary glaucoma, spontaneous intraocular hemorrhage, retinal detachment, and prolonged intraocular inflammation. Every effort is made to prevent intra-surgical or post surgical complications with the use of appropriate pre- and post surgical medications, and the most effective surgical techniques available.

Presurgical Preparation

Before surgery, the patient is evaluated clinically on the basis of risks of anesthesia. Laboratory tests and possible cardiac evaluation may be recommended. The anesthesia protocol is tailored to the needs of each patient. While under anesthesia, the patient is constantly monitored by a trained anesthesia technician as well as cardiac and blood oxygen level monitors.

After the initial evaluation, each patient is put on a preoperative treatment protocol, to minimize any preexisting intraocular inflammation. This protocol should be followed to insure the highest possible chance of successful cataract removal. ▪