



Always consult with a veterinarian that you feel comfortable with before diagnosing or treating any disease on your own. This information is for reference only.

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Retinal Detachment

Issue Description

Retinal detachment is a disorder of the eye in which the retina peels away from its underlying layer of support tissue. Initial detachment may be localized, but without rapid treatment the entire retina may detach, leading to vision loss and blindness. It is a medical emergency.

The retina is a thin layer of light-sensitive tissue on the back wall of the eye. The optical system of the eye focuses light on the retina much like light is focused on the film in a camera. The retina translates that focused image into neural impulses and sends them to the brain via the optic nerve. Occasionally, posterior vitreous detachment, injury or trauma to the eye or head may cause a small tear in the retina. The tear allows vitreous fluid to seep through it under the retina, and peel it away like a bubble in wallpaper.

Causes

Detached retinas have many causes. An injury to the eye or face can create a detachment, as can tumors and diseases like diabetes, high blood pressure, lupus, kidney disease and sickle cell anemia. In some cases, a detached retina can occur as a complication during cataract surgery or other types of eye surgery. In dogs, the cause most often is a disease-related accumulation of fluid underneath the retina that separates it from the choroid. Detached retinas can occur at any age and can affect one or both eyes, depending upon the underlying cause.

Types Of Retinal Detachment

- Rhegmatogenous retinal detachment - A rhegmatogenous retinal detachment occurs due to a hole, tear, or break in the retina that allows fluid to pass from the vitreous space into the subretinal space between the sensory retina and the retinal pigment epithelium.
- Exudative, serous, or secondary retinal detachment - An exudative retinal detachment occurs due to inflammation, injury or vascular abnormalities that results in fluid accumulating underneath the retina without the presence of a hole, tear, or break.
- Tractional retinal detachment - A tractional retinal detachment occurs when fibrovascular tissue, caused by an injury, inflammation or neovascularization, pulls the sensory retina from the retinal pigment epithelium.

Diagnosis

Your veterinarian will do an eye examination using an ophthalmoscope where they will immediately notice that the retina is not where it is supposed to be. Instead they will see something floating in the back of the eye. An ultrasound of the eye will create an image of the eye which can greatly aide treatment.

Treatment

Therapy must be instituted as early in the disease process as possible, or the detached retina will deteriorate and the dog will be permanently blind. Treatment is usually directed at the underlying cause of the retinal detachment. The detachment itself is very difficult to treat. Depending on the physical condition of the patient, treatment options may include outpatient care or may necessitate hospitalization. If the detachment is due to high blood pressure, then medications are instituted to lower the blood pressure. As the blood pressure is being controlled, systemic anti-inflammatory medications may be used to try to decrease the damage done to the retina.

There are several methods of treating a detached retina which all depend on finding and closing the holes (tears) which have formed in the retina:

Adatomed Silicone Oil

In this treatment, Adatomed Silicone Oil is a sterile, colorless liquid injected into the eye and mechanically holds the retina in place until it reattaches. The oil is not intended to remain in the eye permanently, but is usually removed within a year. This treatment has shown to be particularly effective in retinal detachment related to Cytomegalovirus secondary to AIDS.

Cryopexy and Laser Photocoagulation

Cryotherapy (freezing) and laser photocoagulation are treatments used to create a scar/adhesion around the retinal hole to prevent fluid from entering the hole and accumulating behind the retina and exacerbating the retinal detachment. Cryopexy and photocoagulation are generally interchangeable. However, cryopexy is generally used in instances where there is a lot of fluid behind the hole; laser retinopexy will not take.

Scleral Buckle Surgery

Scleral buckle surgery is an established treatment in which the eye surgeon sews one or more silicone bands (bands, tyres) to the outside of the eyeball. The bands push the wall of the eye inward against the retinal hole, closing the hole and allowing the retina to re-attach. The bands do not usually have to be removed. The most common side effect of a scleral operation is myopic shift. That is, the operated eye will be more short sighted after the operation.

Pneumatic Retinopexy

This operation is generally performed in the doctor's office under local anesthesia. It is another method of repairing a retinal detachment in which a gas bubble (SF6 or C3F8 gas) is injected into the eye after which laser or freezing treatment is applied to the retinal hole. The patient's head is then positioned so that the bubble rests against the retinal hole. Patients may have to keep their heads tilted for several days to keep the gas bubble in contact with the retinal hole. The surface tension of the air/water interface seals the hole in the retina, and allows the retinal pigment epithelium to pump the subretinal space dry and pull the retina back into place. This strict positioning requirement makes the treatment of the retinal holes and detachments that occurs in the lower part of the eyeball impractical. This procedure is usually combined with cryopexy or laser photocoagulation.

Vitrectomy

Vitrectomy is an increasingly used treatment for retinal detachment in countries with modern healthcare systems. It involves the removal of the vitreous gel and is usually combined with filling the eye with a gas bubble (SF6 or C3F8 gas). Advantages of this operation is that there is no myopic shift after the operation. A disadvantage is that a vitrectomy always leads to more rapid progression of a cataract in the operated eye. In many places vitrectomy is the most commonly performed operation for the treatment of retinal detachment.

Ignipuncture

Ignipuncture is an outdated procedure that involves cauterization of the retina with a very hot pointed instrument. It was pioneered and named by Jules Gonin in the early 1900s.

After treatment patients gradually regain their vision over a period of a few weeks, although the visual acuity may not be as good as it was prior to the detachment, particularly if the macula was involved in the area of the detachment. However, if left untreated, total blindness could occur in a matter of days.

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