Corneal Dystrophy and Corneal Degeneration

Corneal dystrophy refers to the accumulation of crystalline deposits in the cornea which are white in color. Typically, the deposits are made up of calcium, cholesterol, or fat. The location, size, shape, and density of the deposits will vary from patient to patient and even from eye to eye. Although the deposits are visible to the naked eye, they do not cause blindness or visual difficulties.

Symptoms

Corneal dystrophy is a non-painful condition. Often, the only symptom of corneal dystrophy is white crystalline deposits in one or both corneas.

Corneal degeneration is slightly different from corneal dystrophy. With corneal degeneration, the deposits can breach the surface of the cornea and cause chronic or recurrent ulcerations. This will lead to symptoms such as squinting, redness, and excessive discharge from the affected eye. A clear distinction between corneal dystrophy and degeneration relates to the presence of blood vessels in the cornea. Blood vessels only occur with corneal degeneration and are a sign that the cornea is irritated.

Cause

Corneal dystrophy is often an inherited condition. Several breeds of dogs are known to be at high risk for cornea dystrophy. These include the Airedale Terrier, Beagle, Cocker Spaniel, King Charles Cavalier Spaniel, Miniature Schnauzer, Shetland Sheepdog, and Siberian Husky. The inherited form often affects both eyes and the deposits tend to be symmetrical.

Corneal dystrophy can also be due to hypothyroidism and other metabolic abnormalities which cause high levels of calcium, cholesterol, or lipid in the blood stream.

Corneal degeneration often occurs in older pets. It can affect one or both eyes and usually occurs in corneas where previous ulcers, trauma, or chronic disease processes have occurred.

Diagnosis

The diagnosis of corneal dystrophy or degeneration is made during the slit lamp examination.

Further testing may include a full blood work panel to evaluate internal organ function as well as levels of calcium, cholesterol, and fat in the blood. Thyroid testing is also recommended.

Treatment

The overall goals of treatment are to make your pet comfortable and to maintain vision.

If an underlying metabolic issue is discovered on blood work, the condition will require treatment.
With corneal dystrophy, there have been some reports of Tacrolimus or Cyclosporine resolving or at least improving the deposits. These medications also make the surface cells of the cornea overlying the deposits healthier. This reduces the chance of the crystals breaching the surface.

A diet modification may also be discussed. Though diet itself may not cause corneal dystrophy or degeneration, we can make the deposits worse with a high fat diet.

For pets with chronic ulceration and pain related to corneal degeneration, surgery may be recommended. We are able to remove the deposits from the cornea and place a graft over the surgical site. This is intended to improve comfort, decrease the likelihood of recurrent crystalline deposits, and prevent future ulceration.

Complications with this surgery are rare but include: conjunctivitis, graft retraction or rejection, infection at the surgical site, and corneal scarring.

Have Questions or Need a Consult?
If you have any questions about Corneal Dystrophy/Degeneration or suspect your pet may have one of these conditions, please contact South Texas Veterinary Ophthalmology anytime; we are available 24-7 at 210.930.8383, ext 3.