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## **CORNEAL ULCERS**

### **What is a corneal ulcer?**

The cornea is the transparent, shiny membrane which makes up the front of the eyeball. The cornea is comprised of three layers. The most superficial layer is the epithelium. Below the epithelium is the stroma, and the deepest layer is Descemet's membrane.

A corneal ulcer is an erosion through the entire epithelium and into the stroma. If the erosion goes through the epithelium and stroma to the level of Descemet's membrane, a descemetocele exists. If Descemet's membrane ruptures, the liquid inside the eyeball leaks out, the eye collapses and irreparable damage can occur.

### **How does a corneal ulcer occur?**

There are several causes for corneal ulcers in dogs. The most common is trauma. An ulcer may result from blunt trauma, such as a dog rubbing its eye on the carpet, or due to a laceration, such as a cat scratch. The second most common cause is chemical burn of the cornea. This may happen when irritating shampoo gets in the eye. Less common causes of corneal ulcers include bacterial infections, viral infections, and other diseases. These may originate in the eye or develop secondary to disease elsewhere in the body. Keratoconjunctivitis Sicca or "dry eye" (drying of the cornea due to abnormal tear formation) may also result in corneal ulceration.

### **How does a corneal ulcer affect my dog?**

A corneal ulcer is very painful and most dogs rub at the affected eye. To protect the eye, they keep the lids tightly closed. Occasionally, there is a discharge that collects in the corner of the eye or runs down the face.

### **How is a corneal ulcer diagnosed?**

Corneal ulcers can be visualised with the use of special stains such as fluorescein. A drop of this stain is placed on the cornea. The dye will adhere to an area of ulceration and is visualised with a ultra-violet light such as Wood's lamp.

### **How is a corneal ulcer treated?**

Superficial corneal ulcers generally heal within 3-5 days. Medication is used to prevent bacterial infections (antibiotic drops or ointment) and to relieve spasm and pain (atropine drops or ointment). Antibiotic drops are only effective for a few minutes so they must be applied frequently; ointments last a bit longer but still require application every few hours. It is suggested that an antibiotic preparation be instilled in the eye 4 to 6 times per day. On the other hand, the effects of atropine last many hours so this drug is only instilled about once or twice daily.

If a deep ulcer or descemetocele is present, measures must be taken to protect the eye and promote healing. Surgical techniques are often used to close the eyelids and cover the ulcer or descemetocele.

### **Are there any side-effects from the eye medications?**

Atropine relieves the pain and spasm but also dilates the pupil widely. In consequence the eye is very sensitive to light and because of this the eye will be held closed in bright lights. The effect of atropine may last for several days after the drug is discontinued. Do not be alarmed if the pupil stays dilated for several days.

### **My dog began to drool excessively and paw at its mouth after I administered the eye medications. Is that a reaction?**

No. The tear ducts carry tears from the eyes to the back of the throat. The eye medications may go through the tear ducts and eventually get to the throat where they are tasted. Atropine has a very bitter taste which may cause drooling and pawing at the mouth. You are seeing your dog's response to a bad taste, not a drug reaction.