

Corneal Ulcers

The cornea is the clear, shiny membrane that makes up the surface of the eyeball. There are multiple layers, but because all of these layers are clear, it is not possible to see them without special stains and equipment. The cornea must maintain its transparency to ensure clear vision.

Corneal Abrasion vs. Corneal Ulcer

An erosion through a few layers of the epithelium is called a corneal erosion or a corneal abrasion. A corneal ulcer is an erosion through the entire epithelium into the stroma.

Clinical Signs

Because a corneal ulcer is quite painful, most cats rub the affected eye with a foot or on the carpet. To protect the eye, they keep the eyelid tightly closed or will frequently squint in an attempt to the eye closed. Some animals will seek dark areas because light is painful; they may hide under things

Causes/Transmission

A number of different disorders may lead to corneal ulceration. Some of these include trauma, foreign bodies, abnormalities of the eyelid, decreased tear production, chemical irritation to the cornea, and certain infectious diseases.

Diagnosis

Superficial corneal abrasions are usually not visible without special stains. They can be seen when a drop of fluorescein stain is placed on the cornea. This is the most basic test performed and may be the only test needed if the ulcer is acute (sudden) and very superficial. If the ulcerated area is chronic or very deep, samples are taken for culture and cell study prior to applying the stain or any other medication.

Treatment

Treatment depends on whether there is a corneal abrasion, corneal ulcer, or descemetocoele present.

Corneal abrasions generally heal within 3-5 days. Medication is used to prevent bacterial infections (antibiotic ophthalmic drops or ointment) and to relieve pain (atropine ophthalmic drops or ointment) and pain medications. If the corneal ulcer does not heal within these first few days, complicating factors must be identified, if possible.

If a deep corneal ulcer or descemetocoele is present, measures must be taken to protect the eye and to promote healing. Since pets do not wear eye patches well, surgical techniques are often used to close the eyelid and cover the ulcer or descemetocoele. These measures protect the eye for several days, and then are reversed so the animal can use the eye again. This approach is also taken if a superficial ulcer is very slow in healing.

If there is a concern that the eye may rupture, an appointment with a specialist is strongly recommended. Surgery to actually repair the hole on the surface of the eye (a conjunctival flap) may be the only way to prevent rupturing and preserve use of the eye.

Drugs Commonly Used

Atropine

Atropine relieves pain by preventing spasming of the eye muscles. Because atropine also dilates the pupil widely, the animal is very sensitive to light in that eye. Atropine's effects may last for several days after the drug is discontinued. Do not be alarmed if the pupil stays dilated for several days.

Antibiotics

Antibiotic drops or ointments are commonly used on ulcers. They treat or prevent bacterial infections from occurring within the ulcer. Bacterial infections greatly slow or even stop healing of a corneal ulcer. Antibiotic

drops and ointments remain on the cornea for a short period of time. Therefore, they must be used several times each day. Ointments remain in contact with the cornea longer than drops.

Topical Anesthetics

A topical anesthetic is often used to numb the cornea so the diagnostic tests may be performed. However, these drugs are toxic to the corneal epithelium. They are safe for one time use, but they should not be used as part of treatment.

The Danger of Topical Steroids

It is important that steroids not be used in the damaged eye because they will stop healing of a corneal ulcer and may worsen it. Therefore, the fluorescein dye test should be performed before beginning this type of medication. If steroids are used and the eye becomes painful again, discontinue the steroids and have the eye rechecked. Steroids can cause the corneal ulcer to eventually perforate.

Side Effects of Treatment

Rarely, a cat will be allergic to an antibiotic that is instilled in the eye. If your cat seems more painful after the medication is used, discontinue it and contact the veterinarian.

If you see your cat drool or paw at the mouth after instillation of eye medications, do not be alarmed. 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 that may cause this response. Again, you are seeing your pet's response to a bad taste.

Discontinuation of Medication

The best way to tell that the cornea has healed is to repeat the fluorescein stain test. This should be done after about 2-3 days of treatment. If healing is progressing well, the eye should be checked again before treatment is discontinued to be sure healing is complete. Please consult with us before discontinuing medication unless you have been instructed otherwise.

Prognosis

The prognosis is usually good for uncomplicated corneal ulcers that receive prompt treatment. The prognosis is less certain when the ulcer is deep, the ulcer does not respond to medication, or a complication of the ulcer cannot be successfully treated.