

CORNEAL LACERATIONS & ULCERS

Lacerations & Ulcers of the Corneal Surface of the Eye

The cornea is the thin clear convex shaped outer layer of the eyeball or globe. A corneal laceration is simply a cut or perforation of the cornea. A corneal ulcer is a painful erosion of one or more layers comprising the cornea. Ulcers can be shallow, involving only one or two layers, or deep involving almost all of the layers of the cornea. With most ulcers, there is usually infection seen as a severe conjunctivitis or reddening of the sclera or white portion of the eye. Both **lacerations and deep ulcers are medical emergencies** and should be seen by a veterinarian as soon as possible. All lacerations should be checked for foreign bodies such as shards of glass or flecks of dirt or gravel. Corneal ulcers are usually infected and if left untreated can eventually erode all the way through the cornea to cause a rupture of the eye. **If not promptly treated, dogs with ruptured corneal ulcerations and large corneal lacerations will almost certainly lose their vision and often the eye as well.**

Symptoms

- Painful eye
- Excessive tearing (epiphora)
- Excessive blinking and holding eye closed (blepharospasm)
- Swollen eyelids (chemosis)
- Conjunctivitis (pink eye = white part of eye is red and blood shot)
- Surface of eye looks cloudy, red or blue tinged (corneal edema & hemorrhage)
- Divot or visible ulcer on corneal surface

Diagnosis

The veterinarian will examine the eye carefully using different lights and ophthalmic viewing instruments- paying close attention to the integrity of the corneal surface, the lens, the retina (in the back of the eye), and looking for blood and fibrin in the anterior chamber or front of the eye. The eye should be stained with a special dye (fluorescein) which adheres to exposed corneal material and outlines the area of the ulcer or laceration. If a deep ulcer is present, a culture of the eye should be taken before any medications or stains are applied. The eye should be checked carefully for any presence of a foreign body. Most lacerations and corneal ulcers are fairly straight forward, but if possible, it is advisable to have a veterinary ophthalmologist examine the eye.

Medical Therapy- indicated for corneal ulcers & after laceration repairs.

- **Topical medications-** Applied every 2-6 hours depending on the medication and the stage of the treatment include antibiotics, atropine to dilate the eye, and topical non-steroidal antiinflammatory drugs to decrease the inflammation. A therapy that works remarkably well for corneal ulcers is using the patient's own serum in the eye – 1-2 drop every 2 hours during the initial treatment. The serum has strong proteins that block the breakdown of the cornea by bacteria.
- **Systemic medications** can include oral antibiotics and antiinflammatories.

- **Steroids should not be used topically or systemically** in patients with corneal lacerations or ulcers, or one will risk rupturing the eye.

Surgical Therapy- is indicated for very deep or ruptured corneal ulcers, and for corneal lacerations.

- **Corneal lacerations** should be sutured as soon as possible using specialized instruments and very thin suture material. After the edges of the cornea are apposed, the anterior chamber (inner part of the eye) is re-inflated with saline and a tiny air bubble. The veterinarian may or may not elect to place a conjunctival or third eyelid flap over the sutured cornea to add support to the eye and encourage faster healing.
- **Deep corneal ulcers** are treated surgically by debriding the ulcer (gently scraping away all of the dead and infected cornea material), and then placing either a third eyelid flap, or a conjunctival flap over the ulcer- again to add support to the eye and help speed healing.
- Both laceration and ulcers require intensive medical therapy after surgery to encourage healing and prevent scarring that could lead to permanent loss of vision.

Prognosis

Fair to excellent depending on the severity of the ulcer or laceration, and the duration of the lesion. The key to any eye problem is to **identify the lesion early** on and **start aggressive therapy** as soon as possible. Aggressive therapy means eye drops every 2-4 hours in the beginning for at least 2-3 days, and continuing medicating the eye frequently for at least 7-10 days or longer. In some cases, even with aggressive care, the eye can be lost.