

Corneal ulcers

A corneal ulcer is when there is a break in the top layer of cells of the cornea. The cornea is the clear, front part of the eye. An ulcer can be caused by trauma such as a scratch by a branch or cat claw, a foreign body, abnormal eyelashes (distichia or ectopic cilia) or when the eyelids roll in.

Ulcers can happen in any age dog and any breed, but dogs with short noses and prominent eyes are at greater risk for developing an ulcer. These dogs have decreased corneal sensitivity, more corneal exposure, incomplete blinking and they often sleep with their eyes open.

Clinical signs of an ulcer can be variable. You will often see redness, a cloudy color to the cornea, increased tearing and discharge, pain, a noticeable divot in the cornea and squinting. There are multiple different types of ulcers and each are treated a little differently so determining which type of ulcer your dog has is critical to the success in healing.

A superficial ulcer is a loss of the outermost layer of the cornea. As long as there is no infection most superficial ulcers are treated with topical antibiotics, and pain medications. Usually superficial ulcers heal within a week with minimal scarring.

An indolent ulcer is a type of superficial ulcer that usually doesn't heal within a week. This condition is most common in older dogs and particularly Boxers. Another name for this refractory ulcer is a spontaneous chronic corneal epithelial defect (SCCEDs). The cause of these ulcers is not completely known but in Boxers there is an abnormality in the cells that hold the top layer of cells in place. These ulcers can happen from a trauma or spontaneously. Treatment for an indolent ulcer includes rubbing off the loose top layers of cells (debridement) in addition to diamond burr keratotomy or grid keratotomy. Both of these procedures involve roughening the deeper layers which will allow the top layers of cells to slide across and stick down. These procedures are performed awake while in the room using topical anesthesia.

With a corneal debridement and diamond burr keratotomy most dogs heal within two weeks. If they do not heal within the first two weeks a second procedure is performed. In dogs that have an indolent ulcer it is very common to develop another ulcer in the same eye or the other eye in the future.

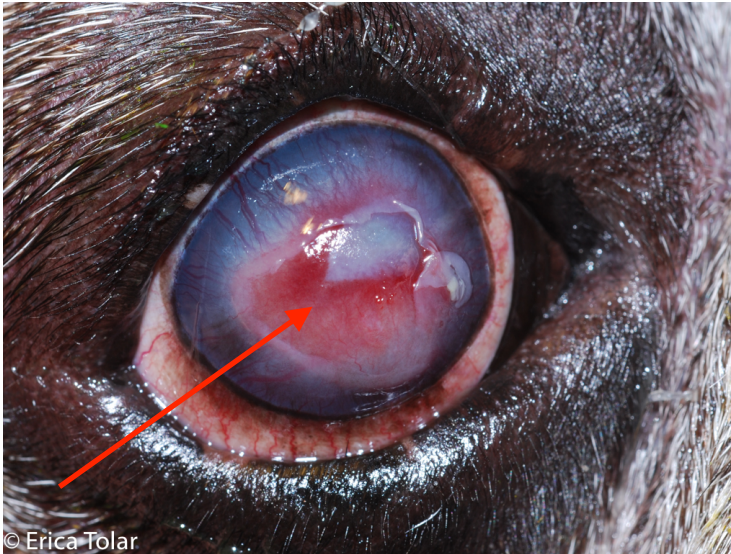
The bacteria that cause complicated, infected ulcers can produce enzymes that break down the cornea. This type of ulcer is called a melting ulcer. A melting ulcer can progress rapidly, even within hours. It is not uncommon for these ulcers to progress to the deepest layers of cells called a descemetocoele or even rupturing.

Deep ulcers and descemetocoeles are usually treated surgically. The most common way to surgically repair a deep ulcer is a conjunctival graft. A conjunctival graft involves taking the white tissue around the eye and rotating that into the area of the ulcer and suturing it in place. This graft or patch is sutured in place to provide structural and nutritional support to the ulcer. Aggressive medical therapy is needed in addition to surgery to heal these wounds.

In certain types of ulcers a bacterial culture of the area is indicated to determine if there are bacteria present and if so what type. A culture will also tell us what medications are the best choices in order to fight the bacteria that are present. In addition to a culture, cytology may be performed. Cytology involves taking a sample from the ulcer and placing it on a slide. By looking under the microscope at the class of bacteria present we are able to make an educated decision about the best antibiotics for your pet at the time of the appointment while waiting for the culture results to return. Using these diagnostic tests in combination give us the most information possible to help your pet.

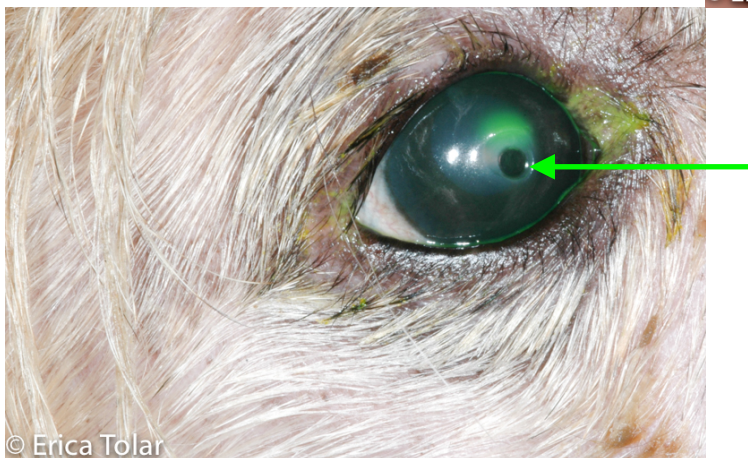
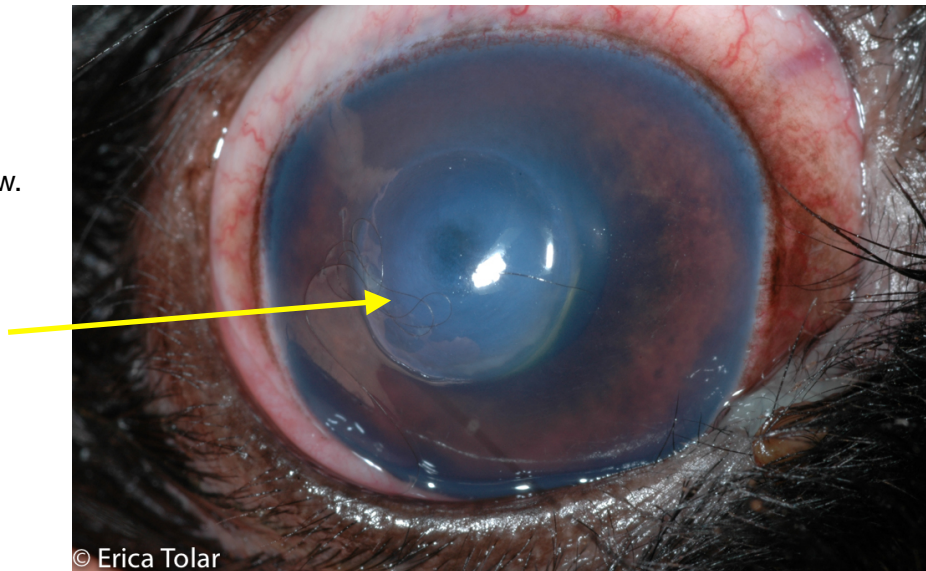
Treatment for corneal ulcers involves topical antibiotics, topical pain medications, oral pain medications, oral anti-inflammatory medications and in some cases oral antibiotics. The types of

medications and frequency of medications are determined by the type of ulcer your pet has. An Elizabethan collar (E-collar) is a critical part of the treatment to get the delicate ocular tissue to heal quickly. Recheck examinations will also be determined based on the type of ulcer present.



A superficial indolent ulcer is indicated by the red arrow. You can see the redundant tissue on the surface of the eye

A melting ulcer is indicated by the yellow arrow. The area has the consistency of jello and the deepest area is indicated by the dark circle



The area indicated by the green arrow is a descemetocele. This ulcer is all the way down to the deepest layer of cells and the eye is at risk for rupturing