

Canine Corneal Ulcers

The cornea is the transparent 'window' at the front of the eye and a healthy cornea is vital for normal vision. The surface of the cornea is covered by a thin layer called the epithelium, which protects the cornea and keeps it waterproof. To allow good vision the cornea needs to remain transparent, and free of vessels.

There are many diseases that can affect the cornea of our Frenchie's, with corneal ulcers being one of the most common, They can be serious and very painful and prompt veterinary treatment is key. An ulcer refers to any injury to the cornea where one or more layers of the cornea are damaged and lost. In a normal healthy eye, the cornea is little over 0.5mm thick.

The Cornea is formed of 3 main layers. The epithelium being the surface layer. In the middle there is the stroma, which is the layer that makes up most of the corneal thickness. Lining the inside of the cornea is the endothelium, a thin layer of cells that "waterproofs" the inside of the cornea. Descemet's membrane is a part of the endothelium, it is a very thin but tough membrane that may remain intact in very deep ulcers when the overlying layers have been lost or destroyed.

Causes of Ulcers

There are many reasons why an ulcer may develop. Trauma or contact with chemicals. Particularly for Brachycephalic breeds poor eyelid conformation with Entropion (in-rolling eyelid) or Distichiasis (extra row of eyelashes) and prominent eyeballs can make them more susceptible.

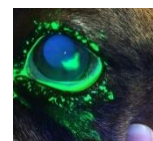
Types of Ulcers

Corneal Ulcers are usual divided into simple or complicated ulcers. Treatment and prognosis differ depending on the type of ulcer.

Simple Ulcer

A simple ulcer is one that only affects the superficial layer of the cornea (ie the epithelium) and will usually heal within 7 days. So if an ulcer is present for more than 7 days, or it extends to the deeper tissues of the cornea , then it is classed as complicated. Typical signs of a simple ulcer will be pain which usually results in excessive blinking or squinting and a watering eye.

Although ulcers can heal themselves without treatment, it is always best to consult your Vet as quickly as possible to eliminate the ulcer becoming infected with bacteria, which will turn a simple ulcer into a much more serious complicated one. Your vet will diagnose an ulcer using a fluorescein dye, which in a healthy eye will not stick to a normal intact cornea. But if there is an ulcer the dye sticks and glows green.



Treatment for simple ulcers will normally involve an oral painkiller and topical antibiotic drops/ointment to prevent infections, typically Chloramphenicol or Exocin (Ofloxacin) and Remend corneal repair gel.

You can buy Fluorescein dye online at Vet Supply companies like Hyperdrug, I tend to keep a supply in and if any signs of issues with eyes, use it to establish whether an appointment is needed at the vets for additional treatment. You can never be too complacent with ulcers as they can change rapidly.

Complicated Ulcer

There are different types of complicated ulcers.

Spontaneous chronic corneal epithelial defect or SCCED, also known as Indolent Ulcers, Non-Healing Ulcers or “Boxer” Ulcers. They only affect the epithelium and don't extend into the deeper layers, but healing can be challenging, and they are very uncomfortable. Its not known what triggers them but dogs affected by SCCED develop an abnormal membrane at the junction between the epithelium and stroma and they fail to attach which is the normal healing process.

There are a few treatment options the first is a gentle Debride (rub off) any loose epithelium to strip it back to healthy edges, giving it another chance to attach to the stroma as it grows inwards. After this treatment continues with oral painkillers and topical antibiotic drops.



If this doesn't work, the next line of treatment would normally be a Grid keratotomy, this involves the cornea being gently scratched with a needle to disrupt the abnormal membrane and hopefully allowing the ulcer to heal correctly. Depending on the temperament of the dog, this may be done when they are fully conscious with a local topical anaesthetic used on the eye , or under mild sedation. It isn't unusual for this procedure to have to be repeated.



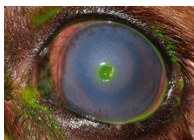
If correct healing still doesn't occur, the Grid Keratotomy approach can be replaced by a diamond burr debridement, where a burr is used to strip the abnormal membrane. After this the eye may be covered by a bandage contact lens to protect it and additionally a Serum eye drop from the dogs own blood can be made.



Following debridement with a diamond burr, 92% of SCCEDs heal in 2 weeks, however a repeat second debridement may be necessary. Rarely (about 2% of cases) the diamond burr debridement is unsuccessful and a full superficial keratectomy under general anaesthetic is needed. Left untreated SCCED can develop red and inflamed granulation tissue reactions which affect vision.



Deep/ Stromal Ulcers



Ulcers that extend further into the cornea are called deep or stromal ulcers. The Enzymes and other chemicals released by certain bacteria, the immune system and the dying corneal cells can “melt” the stroma very rapidly . Deep ulcers are very serious, and prompt action is required. If the ulcer is progressing rapidly referral to a specialist ophthalmologist is usual. Rapid and intense treatment is needed for successful treatment. As a rule if an ulcer is greater than 50% of the corneal depth, they are a strong candidate for corneal repair surgery.

Descemetocoeles

This type of ulcer has lost all the overlying epithelium and stroma, leaving behind just the thin endothelium and Descemet's membrane. A eye in this condition is very fragile and is at great risk of rupturing, specialist veterinary advice and treatment should be sought as surgery will be required to save the eye.

Ruptured Corneal Ulcer

If the eye does rupture, then an emergency referral to a specialist is required to save the eye, it is likely even with a successful repair damage and scarring can be significant. If caught early enough, surgery to repair a burst eye is occasionally possible. The specialist may recommend removal of the eye.

General Advice

Prompt Veterinary treatment should always be sort if you suspect any eye issues . Time is of the essence to ensure that the condition doesn't worsen rapidly.

Symptoms of an eye ulcer include:

- Red, inflamed, blood shot eye
- Closed eye or squinting, blinking more than usual
- Weepy eye
- Cloudy eye
- Scratching and rubbing at the face and eye
- Avoiding bright lights.
- An obvious hole or crater on the surface of their eye

Copyright Vanessa Bryant – Health Scheme Administrator.

Not to be reproduced without permission

