

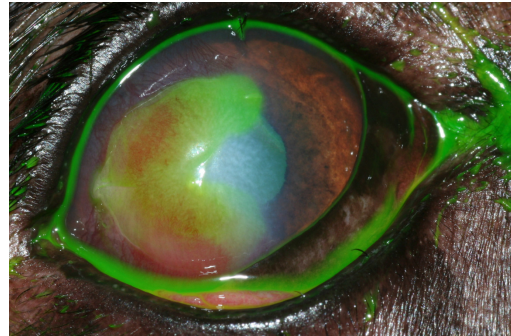
“Indolent” ulcer or SCCED

What is a *corneal ulcer*?

A corneal ulcer forms when the surface of the cornea is damaged or compromised. The signs associated with a corneal ulcer depend on whether the ulcer is infected or sterile, the aggressiveness of the infecting organism, the ulcer depth and the affected breed (short-nosed breeds have less sensitive corneas), as well as the cause. The typical signs of a corneal ulcer are ocular pain (increased blinking or holding the eye closed), increased tearing, ocular discharge, redness and light sensitivity. Often a mark can be seen on the cornea, or even a depression or crater within the cornea. Blood vessels grow into the cornea and it can become waterlogged so it can appear cloudy.

What is an *indolent ulcer*?

An indolent ulcer is a particular type of ulcer. There are a lot of different names for this condition. The currently favoured scientific term is SCCED which is an acronym for Spontaneous Chronic Corneal Epithelial Defect! Indolent ulcers are very superficial ulcers that occur in any breed, without sex predilection (i.e. females and males are equally affected) but only in middle aged and older patients. They occur because of a lack of adherence between the epithelium and the stroma (see ‘Anatomy of the eye’ information sheet). The new corneal epithelium tries to grow and cover the defect, but it does not stick to the underlying stroma and flaps of loose epithelium can be seen. Indolent ulcers present with the same clinical signs as any other ulcer. As they are very superficial, it is sometimes not possible to see the defect with the naked eye.

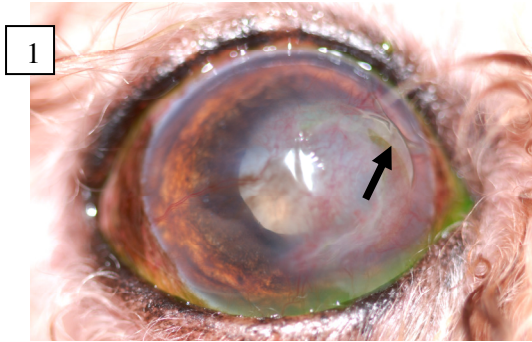


SCCED in a Staffordshire Bull Terrier as shown with fluorescein dye. There is dramatic corneal vascularisation and central corneal oedema and yet the ulcer is still large

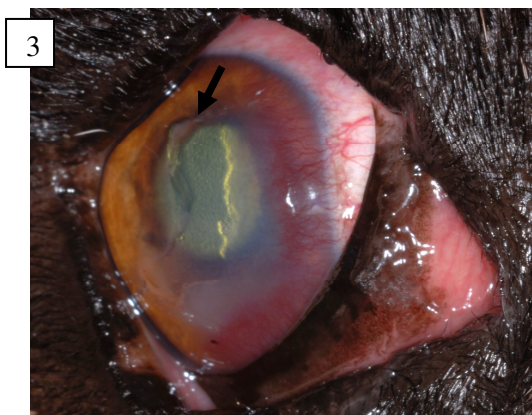
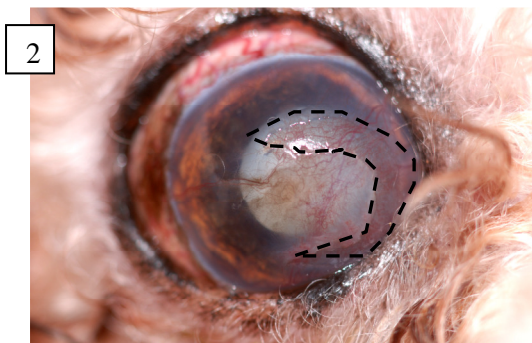


SCCED before and after fluorescein staining showing dye under-running the ulcer edges

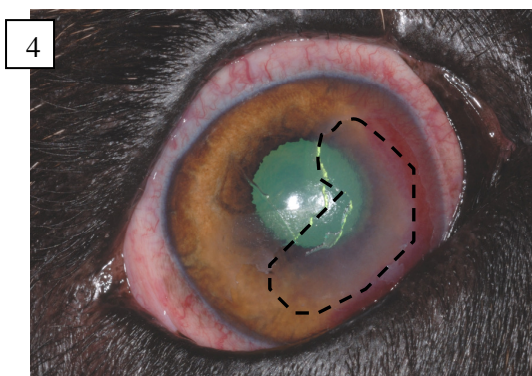
A green dye called fluorescein is usually applied, which will be taken up by the corneal stroma in the area of the ulcer and can be seen to under-run the loose epithelial edges. Some dogs will react to these ulcers with an exuberant inflammatory reaction. Blood vessels will grow into the cornea from the limbus (i.e. the junction between the sclera and the cornea) to help the healing process. Areas of the cornea will then appear red. Other areas will appear blue-white because of oedema (too much water in the cornea), and cells can also infiltrate (white blood cells). Even



Picture 1. Loose epithelial edges (arrow)
 Picture 2. Ulcer after debriding (final size outlined with dashed line)



Picture 3. Loose epithelial edges (arrow)
 Picture 4. Ulcer after debriding and chemical cautery (final size outlined with dashed line)



with all this reaction, the ulcer does not heal. In chronic cases pigment can be deposited in the cornea, giving it a dark brown colour. In contrast some dogs can have indolent ulcers for months without any blood vessels growing in and with very little obvious pain!

What causes an indolent ulcer?

The underlying cause of an indolent ulcer is not yet fully understood. It seems that there is an acellular proteinaceous layer covers the stroma, preventing adherence of the epithelial cells. Because it is a primary corneal abnormality, affected animals can have recurrent indolent ulcers in a different area of the same eye or in the other eye. These ulcers can form spontaneously without trauma. Dry eye, poor eyelid conformation, the presence of misdirected hairs and injuries injury can certainly trigger such ulcers and it is really important to exclude or treat these causes or they will further inhibit ulcer healing.

What are the treatments for an indolent ulcer?

A non infected superficial ulcer should usually heal in a few days. Indolent ulcers, on the other hand, either do not heal with just topical treatment or take many months. Several techniques are described to treat these ulcers which are aimed at changing the surface of the cornea and helping the epithelium adhere. The most non invasive treatment is a keratotomy. This is usually performed following the topical application of anaesthetic and does not usually need sedation or general anaesthesia. The loose corneal epithelium is removed and a needle is used to make multiple pinpoint scratches (punctate keratotomy) or a cross hatch of linear scratches (grid keratotomy) on the exposed ulcerated cornea. 80% of ulcers should heal following this procedure, compared with only 50% when the ulcer is just debrided. Those ulcers that do not heal may require the keratotomy to be repeated. Sometimes, a chemical is

used to destroy the abnormal layer that prevents adherence between the stroma and the epithelium. In the rare cases that these procedures fail, surgical intervention in the form of a superficial keratectomy is indicated. This is performed under general anaesthesia, and involves surgical removal of the "abnormal" layer of the cornea, exposing normal cornea to which the epithelial cells can adhere. The cornea is less than 1mm thick, so this surgery is performed under an operating microscope. After the procedure, a contact lens is placed to cover the exposed nerve endings and protect the cornea from friction from the eyelids closing over the healing ulcer. The eyelid may be temporarily sutured partially closed to stop the lens from falling out prematurely. The prognosis for this second procedure is even better, with more than 99% of ulcers healing in the following weeks. The disadvantage of this more effective treatment method is the need for general anaesthesia, the increased expense and, in some case,

there may be slightly more scarring than if the ulcer had been successfully treated by one or two debridement and keratotomy procedures.

How do I care for my animal at home?

It is important to prevent your pet from rubbing its eye, whichever procedure has been performed, and this is usually helped by wearing a Buster collar. Your pet will be prescribed topical antibiotic eye drops or ointment to prevent the corneal wound from becoming infected and this is continued until the ulcer has completely healed. It is also important to keep the eye clean. Your pet will also require mild pain-killer tablets for a few days. Antibiotic tablets may also be dispensed as some of them promote corneal healing.

If you have any further questions do not hesitate to contact the Ophthalmology department at Rutland House Referrals on 01744 853510.