



TORONTO ANIMAL EYE CLINIC

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## Feline Corneal Sequestrum

The cornea is the transparent front layer of the eyeball and is covered in a layer of epithelium. The epithelium is similar to human skin cells however, it doesn't contain hair or blood vessels and it usually is not pigmented.

In the cat, the epithelium is approximately 6-8 layers thick. One of these layers is the endothelium, which lines the inside of the cornea. Endothelial cells are 'leaky', allowing fluid (aqueous humor) from the inside of the eye to leak into the corneal tissue, then pumping it back into the front of the eye. This pumping mechanism is responsible for keeping the cornea clear. Approximately 90% of the thickness of the cornea consists of stroma, which is a collagen fibre matrix.

### What is sequestrum?

Corneal sequestrum is a condition unique to the cat, in which the corneal stroma dies, and then degenerates. This condition is referred to as necrosis. The dead stroma becomes pigmented and irritating to the body, causing blood vessels to enter the stroma, resulting in pain. Often corneal edema (swelling) and white blood cell infiltration occur as a reaction to the presence of necrotic tissue.

### What causes this?

The cause of corneal sequestrum is unknown. Some veterinary ophthalmologists suggest that it is primarily caused by abnormal development of the cornea, while others suggest the dead tissue is secondary to a host of factors which include: herpes virus, lack of tear production (keratoconjunctivitis sicca, or KCS), chronic corneal ulceration and foreign objects in the eye.

Alternately, some cats sleep with their eyes partially open (lagophthalmos) causing tear film to be inadequately spread over the centre of the cornea, resulting in drying. Finally, some affected cats have a subtle in-rolling of the lower eyelid (entropion) which may irritate the cornea. The black discolouration of the necrotic stroma is thought to be caused by products within the tears which are absorbed into the degenerative tissue.

### Which cats get this condition?

Corneal sequestrum is seen in cats of all ages, with exception to newborn. Although sequestrum most often occurs in young adult cats, it has been diagnosed in cats as young as 2 years and as old as 16 years. While there is no difference in occurrence between sexes, there is a noticeable breed distribution:

- Himalayan - 35%
- Persian - 35%
- Siamese - 15%
- Domestic - 10%

The Himalayan and Persian are most frequently seen for this condition, although it does occur with less frequency in the exotic shorthair and domestic shorthair breeds. This breed disposition may not be genetic in nature, but related to conformation. These breeds have some degree of exophthalmos (protruding eyes) and thus, are at risk of additional trauma.