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## OPHTHALMIC EMERGENCIES

Abnormalities in a pet's eye can be very alarming to an owner. Some ocular diseases require emergency care; others can be dealt with during regular business hours. True ocular emergencies include acute glaucoma, proptosis of the globe, deep corneal ulcer, corneal laceration or perforation. Conditions that require treatment soon after they happen include eyelid laceration, lens luxation and hyphema.

### **Glaucoma:**

The clinical signs, diagnosis and treatment of glaucoma has been discussed in the glaucoma lecture.

### **Proptosis**

It takes very little trauma to proptose an eye in a pekingese, Shih Tzu, Lhasa etc. It takes a lot of trauma to proptose an eye in a Labrador or cat. Examine the animal for the presence of skull fractures, pneumothorax etc.

There are two treatment options: reduce the globe or enucleation. Good prognostic signs for cosmetic appearance with or without vision after surgery include absence of intraocular abnormalities (such as hyphema); the globe is trying to move with the other globe; a consensual PLR is present from the proptosed globe to the normal eye. Indications for enucleation include sclera or corneal rupture; more than 3 extraocular muscles ruptured; very old proptosis with a hard, dried cornea; any time the owner wants a "one surgery will fix it all".

### **Surgical procedure under general anesthesia:**

A lateral canthotomy facilitates reduction of the globe. Two to three mattress sutures are preplaced in the eyelids using relatively large suture material such as 4-0 nylon. The globe is lubricated with antibiotic and atropine ointment. The aim of the surgery is not to push the globe back into the orbit, but to pull the eyelids forward over the globe. Small pieces of IV tubing can be used to prevent pressure necrosis of the sutures in the eyelids. The cornea can be protected from the sutures when you pull the eyelids forward by placing the back end of a blade handle between the sutures and the cornea

Aftercare consists of warm compresses twice a days, systemic antibiotics, and systemic steroids. The first re-evaluation is recommended in 2-3 weeks. Remove the medial suture first. If the eye does not appear to "re-proptose", you can then remove the other suture(s) as well. A complete ophthalmic examination is performed and the eye is treated as needed. Recheck the eye again a few weeks later. It is not uncommon that secondary complications become visible several weeks after the initial traumatic event. Complications include corneal ulcer, KCS, lateral strabismus, blindness, lagophthalmos and phthisis bulbi.

Deep corneal ulcer and corneal perforation: Please refer to the corneal disease lecture.

### **Corneal laceration (secondary to sharp trauma)**

These animals are extremely blepharospastic. Apply topical anesthetic prior to the examination. In the acute phase, the anterior chamber is collapsed, the cornea is edematous and it is hard to distinguish a pupil (or you may see an obvious dyscoria). There is often some blood in the anterior chamber. If the laceration is at an angle to the corneal stroma, the laceration may be self-sealing and surgical intervention may not be necessary. Surgical correction of a corneal laceration is indicated in all animals in which a continued leaking of aqueous is present.

Anytime you have a history of a cat scratch or a sharp object entering the eye, the possibility of a lens capsule rupture exists. If left untreated, this may result in severe lens-induced uveitis, glaucoma or phthisis bulbi. Treatment of choice is removal of the lens by phacofragmentation soon after the injury.

### **Eyelid laceration**

Traumatic eyelid lacerations often occur in dog fights. A tooth hooks in the eyelid and rips a tear in the eyelid. Cat nails can also cause an eyelid laceration. More diffuse trauma to the orbit and surrounding structures (such as being hit by a car) can also result in partial thickness or full thickness lacerations of the eyelids.

Sharp trauma to the eyelid, conjunctiva and sclera can result in a laceration of all 3 structures. The eyelid laceration is easy to diagnose. The scleral laceration though may

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be hidden beneath the conjunctiva. The conjunctiva stretches during the insult and relaxes afterwards, effectively covering up the laceration in the sclera underneath. Signs of a scleral laceration include intraocular bleeding, dyscoria and bleeding at the site of the laceration. Eyelid lacerations need to be repaired surgically if they are full thickness. Careful apposition of the eyelid margin is very important. Debridement of the tissues is usually not needed, and should be very minimal if devitalized tissue is present. Primary closure is indicated in all eyelid lacerations, even if they are a few days old. Aftercare consists of topical antibiotic ointment, E-collar until suture removal. Systemic antibiotics and NSAID's and warm compresses can be used if extensive tissue trauma is present.

Lens luxation: this has been discussed in the lens lecture.

### **Hyphema**

The presence of blood in the anterior chamber can be extremely alarming to an owner. Differential diagnoses include trauma; coagulopathy, thrombocytopenia; systemic hypertension; intraocular abnormalities (chronic uveitis, chronic retinal disease, intraocular neoplasia)

If the hyphema is from an obvious traumatic event, the prognosis for vision is poor as there is often significant vitreal hemorrhage or retinal detachment present. If no signs of trauma are present, we have to assume that the origin of the hyphema is systemic disease. A thorough physical examination is indicated, followed by a CBC/biochemistry profile/coagulation profile and measurement of blood pressure. Careful examination of the other eye may also reveal small hemorrhages in the fundus or iris. Treatment consists of topical corticosteroids if the cornea is fluorescein negative, and systemic corticosteroids if the condition of the animal allows it. Use atropine only if the IOP can be monitored closely. An ocular ultrasound is indicated if the physical examination/ blood pressure/bloodwork results are normal to further investigate ocular reasons for the hyphema.