Though cats and exotics may get some of the same eye problems as dogs it is important to remember that they are not small dogs and that some of their ocular issues require different management strategies or that simply they can get diseases that other species do not get. Awareness of these considerations and knowledge of certain feline and exotics ophthalmic issues is important in small animal practice.

**Feline Conjunctivitis**

 Conjunctivitis is a common ophthalmic problem in feline patients and a frequent cause for presentation to veterinarians. Clinical signs include blepharospasm, epiphora or discolored ocular discharge, conjunctival hyperemia and possibly chemosis. Infectious etiologies are the most common cause of conjunctivitis in cats, including Feline Herpesvirus-1 (FHV-1), *Chlamydophila felis*, *Mycoplasma* spp., and calicivirus. The specific agent may be difficult to identify so empiric therapy is commonly used to treat patients while avoiding drugs that may suppress the immune system or worsen clinical signs. Antibiotic agents used include topical erythromycin, oxytetracycline, or chloramphenicol ointment TID-QID and/or systemic doxycycline 10 mg/kg PO SID to address possible bacterial agents. Antiviral therapies include topical cidofovir 0.5% BID or idoxuridine 0.1% 4-6 times daily but both of these medications must be compounded. Oral famcyclovir (Famvir®) has been shown to be safe at doses as high at 90 mg/kg PO TID and is currently recommended at 90 mg/kg BID though lower doses may be attempted due to cost concerns. Adjunctive therapy with L-lysine is no longer recommended but may be still utilized if desired. Antibiotic and antiviral therapy is typically continued for 2 weeks past the resolution of clinical signs.

**Feline Corneal Ulceration**

 Corneal ulcers in cats may be most commonly caused by FHV-1, but trauma, eyelid/eyelash or other conformational abnormalities may also cause ulcers. Dendritic ulcers are pathognomonic for FHV-1 infection, but superficial geographic ulcers are a more common presentation. Any feline superficial ulcer with no other obvious cause should be treated with a topical antiviral or systemic famcyclovir in addition to a topical antibiotic TID-QID to prevent secondary bacterial
infection. Ulcers with loose epithelial lips that are superficial are also likely due to FHV-1 and may require sterile cotton-tip applicator debridement or other therapies to encourage healing (e.g. diamond burr or superficial keratectomy). Stromal defects and melting ulcers should be managed as complicated corneal ulcers.

**Feline Corneal Sequestrum**

Sequestra may form in the corneas of cats due to chronic irritation (e.g. exposure, entropion) or due to FHV-1 infection. They may develop at the site of chronic corneal ulcers as well. Brown to black discoloration is present representing necrotic collagen. Though lesions may slough on their own surgical removal via a superficial keratectomy is recommended to prevent inadvertent globe rupture. Use of topical lubricants long term may minimize the risk of recurrence or development in the opposite eye in predisposed cats.

**Feline Eosinophilic Keratitis**

Eosinophilic keratitis is an immune-mediated disease which manifests as a pinkish-white superficial or proliferative lesion of the feline cornea due to blood vessel ingrowth and inflammatory cell infiltration. Lesions commonly start near the lateral or medial limbus but can progress to involve the entire cornea and cause blindness. It is typically nonpainful and may be unilateral or bilateral. Diagnosis is made by consistent clinical appearance and surface cytology which shows eosinophils among other inflammatory cells. Treatment with topical ophthalmic prednisolone acetate QID then gradually decreasing and/or immunomodulating drugs (e.g. cyclosporine) BID is generally effective at managing the disease, though long term low dose therapy may be needed to maintain control. If recrudescence is noted during steroid therapy an antiviral should be used as well given the common association with FHV-1. Topical megestrol acetate 0.5% compounded suspension was recently investigated as primary treatment of eosinophilic keratitis and was found to be safe and effective even if corneal ulcers were present.

**Feline Uveitis**

Intraocular inflammation in cats may manifest as anterior uveitis, chorioretinitis, or both (panuveitis). Causes include infectious diseases (FeLV, FIV, FIP, Toxoplasmosis, Cryptococcosis, Blastomycosis, Histoplasmosis, Bartonella, others?), immune mediated diseases (lymphocytic plasmacytic uveitis, autoimmune diseases), neoplasia (lymphosarcoma, other ocular tumors), trauma, and other issues. Patients presenting with uveitis should have a complete ocular
examination done to identify all abnormalities and help plan therapy. A complete physical exam and baseline labwork should be done to assess general health status and direct further testing. Specific etiologic agents can be tested for and additional diagnostic studies can be performed (lymph node aspirate with cytology, radiographs, ultrasound). Empiric therapy of the ocular disease includes topical ophthalmic prednisolone acetate QID, topical ophthalmic atropine ointment SID-BID if appropriate, and systemic therapy which may include meloxicam, prednisolone, doxycycline, clindamycin, or antifungal therapy. Following clinical improvement the topical steroid should be gradually decreased (e.g. every 1-2 weeks) but not discontinued completely until 2-4 weeks past the resolution of clinical signs.

**Feline Iris Melanoma**

Diffuse iris melanoma is a potentially malignant ocular tumor in cats. Darkly pigmented spots that form on a cat’s iris should be monitored for progression to help distinguish between freckles, benign melanosis and neoplasia. Early lesions may be treated with a diode laser to hopefully maintain a visual eye, but extensive change that is accompanied by a dusted iris surface, free pigment cells in the anterior chamber, impaired pupil shape/function, or secondary glaucoma warrants enucleation with the eye submitted for ocular histopathology.

**Feline Aqueous Humor Misdirection Syndrome**

Aqueous humor misdirection is an uncommon disease but may be documented in older felines with elevated intraocular pressure due to misdirection of aqueous humor posteriorly into the vitreal cavity. Clinical findings include anisocoria and a shallow anterior chamber due to anterior shifting of the lens and iris. Glaucoma treatment with dorzolamide +/- timolol BID-TID is most common though surgery can be considered. Other common causes of feline glaucoma include uveitis, lens luxation, or neoplasia.

**Feline Hypertensive Retinopathy**

Systemic hypertension commonly affects older cats and ocular changes may be noted on fundic examination. Minor changes include tortuous retinal blood vessels or small retinal hemorrhages while more severe changes include bullous retinal detachments and extensive intraocular hemorrhage. Clinical signs recognized by owners in some cases include acute blindness and dilated pupils. Testing should be done to look for an underlying cause of the hypertension and to help guide therapy, but generally amlodipine 0.625 mg PO SID is used and increased as needed
to achieve blood pressure control while monitoring renal values. If caught early and treated adequately detached retinas can reattach and cats can regain vision but some degree of retinal degeneration will remain. Unfortunately if chronic the prognosis for vision may be guarded.

Feline Toxic Retinal Degeneration

Enrofloxacin has been shown at high doses to cause acute retinal degeneration in cats. Doses less than 5 mg/kg/day are generally safe but owners of cats undergoing treatment should still monitor for dilated pupils or signs of vision loss and discontinue use immediately if noted.

Exotic Species Ophthalmology

It is beneficial to consciously examine the eyes of exotics species that present to you in order to get familiar with basic anatomy. When a patient presents with an ocular complaint the opposite “normal” eye or another “normal” animal may be used for comparison. Though basic ocular diseases may be similar across species (e.g. corneal ulcers, uveitis, cataracts, glaucoma, etc.) there are medication preferences more ideal for exotics (e.g. ciprofloxacin or chloramphenicol ophthalmic solution, ophthalmic NSAIDs, ophthalmic carbonic anhydrase inhibitors, systemic enrofloxacin, meloxicam, etc.). Husbandry issues may be a primary factor in some ophthalmic diseases so must be discussed and addressed.

Snake Retained Spectacle

If the spectacle does not shed during a snake’s ecdysis the retained superficial keratin layer appears opacified and may become wrinkled. This is generally the symptom of an underlying husbandry or health problem. Atraumatic spectacle removal can be attempted, but aggressive removal attempts must be avoided. If gentle removal is unsuccessful correcting the underlying issue (e.g. increasing environment humidity) will hopefully allow spectacle shedding at the next ecdysis. Conservative management of this condition is often effective and safest for the snake.

Snake Subspectacular Abscess

Purulent debris causing distension of the spectacle results from injury or a variety of infection sources. Oral examination is necessary to look for stomatitis which may ascend through the nasolacrimal duct to cause this condition. Treatment is aimed at not only correcting the
underlying cause but also careful surgical opening of the spectacle (30° wedge resection inferiorly) and flushing the space to prevent irreversible eye damage.

*Rabbit Dacryocystitis*

The rabbit’s nasolacrimal duct follows a tortuous path with areas of abrupt narrowing and passage close to the tooth roots putting it at risk for easy blockage or impact from nearby disease. Signs of dacryocystitis include epiphora, chemosis, conjunctival hyperemia, purulent ocular discharge, and moist dermatitis. Treatment involves flushing the duct through the lacrimal punctum (single and located ventrally) along with topical and systemic antibiotics. Underlying dental disease, sinusitis or any other issue must also be addressed. Additional diagnostics may be needed for recurrent or challenging cases.

*Rabbit Orbital Disease*

Clinical signs of orbital disease in the rabbit are similar to other species including exophthalmos, elevated third eyelid, periocular swelling, ocular discharge, and possibly exposure keratitis. Abscessation of the molar tooth root is the most common cause in rabbits and carries a guarded prognosis. Imaging of the orbit can be performed to document extent of disease and plan therapy (e.g. possible surgery).

*Exotic Species Conjunctivitis*

Conjunctivitis is a common complaint in exotic species including birds, small mammals, and reptiles. Primary conjunctival disease may be caused by species-specific infections, foreign bodies, or environmental irritants. Conjunctivitis may also occur secondary to another ocular or periocular disease or even a systemic illness so thorough physical and ophthalmic examinations are warranted. Husbandry and nutrition issues must be discussed and concerns addressed. Conservative eye flushing may be beneficial. Infectious disease testing may be considered if conjunctivitis affects a large number of animals or is persistent in an individual.

**Recommended Veterinary Ophthalmology Textbooks:**


*best recommendation for a general ophthalmology resource*
Ophthalmic Disease in Veterinary Medicine. Charles L Martin. Manson Publishing Ltd. 2010