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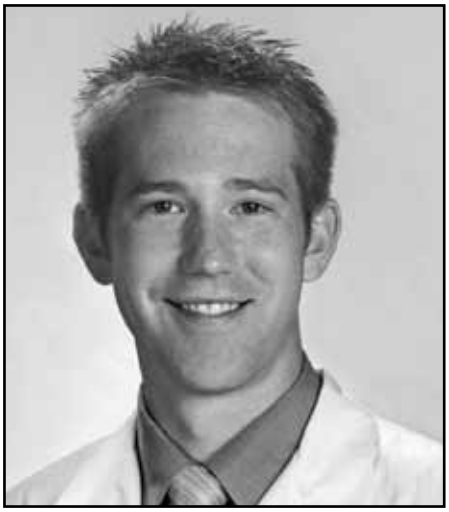
THE OCULAR OUTLOOK

Eye Care FOR ANIMALS
Seeing life through your pet's eyes

A Quarterly Publication for the Veterinary Community from Eye Care for Animals

Feline Herpesvirus-1 (FHV-1)



Matthew Fife, DVM, DACVO
Eye Care for Animals

Introduction

Feline herpesvirus-1 (FHV-1) is one of the most common causes of feline ocular disease and may manifest in a variety of ways. FHV-1 is an alpha-herpesvirus, which as a group, are responsible for the majority of clinically recognizable herpesvirus diseases in veterinary patients. Alpha-herpesviruses are highly species specific and many species are known to be infected by unique, but closely related, herpesviruses. Alpha-herpesviruses primarily infect mucosal epithelial surfaces such as ocular tissues and the respiratory tract. In addition to primary infection, alpha-herpesviruses as a group are capable of establishing latent infections within nervous tissue. During initial infection, virus replicates within, and lyses epithelial cells, producing clinical disease. During primary infection, viral particles may ascend peripheral sensory nerves to establish latency within sensory ganglia. Clinical disease with FHV-1 infection is similar to that of human herpes simplex virus type 1, which is a common ocular pathogen of humans and is responsible for a variety of ophthalmic diseases.

FHV-1 disease

A number of clinical manifestations of FHV-1 infection are recognized and FHV-1 has been implicated in several other syndromes. The virus is transmitted through mucosal secretions and initial infection often occurs when the animal is young. Infection is manifested by upper respiratory disease with or without ocular involvement, including conjunctivitis and corneal ulceration. Symptoms are directly attributed to epithelial cell death from viral infection, with associated inflammation. This initial infection is generally self-limiting and therapy is supportive. Most animals will recover from the initial infection in 7-21 days. Following recovery, animals may become latently infected, with virus becoming inactive in cranial nerve ganglia. Once latent, the virus may become reactivated, particularly during periods of stress and clinical symptoms may recur. Latently infected animals will carry the virus for life and have the potential for disease recurrence at any time. Immune suppression of any type, including stress, corticosteroid administration, or concurrent disease may result in viral recrudescence. FHV-1 should be considered in any feline patient exhibiting signs of conjunctivitis, keratitis and/or upper respiratory infection.

In addition to the acute symptoms of conjunctivitis and keratitis, associated conditions may occur. Ulcerative keratitis may be complicated by bacterial infection resulting in stromal loss and possibly globe rupture.

Prophylactic antibacterial therapy is indicated with any corneal ulceration and stromal involvement should be treated more aggressively. Another manifestation of FHV-1 infection is stromal keratitis. Stromal keratitis is thought to be an immune mediated process, targeted at viral antigen or possibly stromal protein that has been altered by the virus. Treatment of stromal keratitis is aimed at controlling the inflammatory response and can be complicated by recrudescence of active viral disease.

Along with these well-recognized manifestations of FHV-1, the virus has been implicted in other diseases. The virus may cause a neuritis resulting in symptoms of ocular pain without obvious pathology. FHV-1 induced dermatitis involving the periocular skin has also been described. FHV-1 has been reported as a potential cause of

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anterior uveitis in cats, however this has not been definitively proven. Although, human herpes simplex-1 is a well documented cause of uveitis in humans.

Eosinophilic kerato-conjunctivitis (EKC) is an inflammatory condition affecting felines. Clinical signs are conjunctivits and/or keratitis, often with white plaques composed of eosinophills. The exact pathophysiology of EKC has not been established, however, there has been a loose association with FHV-1. Difficulty arises in that treatment of EKC involves immune-suppression, which can cause recrudescence of latent FHV-1. Therefore, care must be taken when treating this condition and a definitive diagnosis should be made prior to placing feline patients on corticosteroids.

Corneal sequestrum is yet another condition which has been associated with FHV-1, however, no direct relationship has been established. Corneal sequestra result from stromal collagen necrosis, the exact pathophysiology of which has not been elucidated. Sequestra often form following chronic corneal ulceration. Initially they may appear as a faint brown discoloration of the cornea, and may progress to a dense black "plaque". Sequestra may incite an aggressive vascular response and over a long period can be sloughed. Ideally, corneal sequestra are treated with surgical excision early in the course of disease to minimize pain, corneal pathology and scarring. Some animals with corneal sequestra have had tissue samples test positive for FHV-1 DNA, but no direct relationship has been identified. It is perhaps more likely that sequestra result from prolonged corneal ulceration and stromal exposure. FHV-1 is one cause of chronic corneal ulceration in cats, and may therefore indirectly put cats at risk for developing corneal sequestra.

Diagnosis of FHV-1

A variety of diagnostic tests are available for FHV-1, unfortunately definitively identifying FHV-1 as a cause of disease remains a great challenge. The finding of dendritic corneal ulcerations is the most accurate means of diagnosing FHV-1 infection. These small, superficial, "lightning bolt" like corneal ulcers are pathognomonic for herpesvirus infection. Unfortunately these lesions appear during a small window early in the disease and are rarely identified. FHV-1 antibody titers can be performed, however, since most animals are vaccinated against FHV-1 the results of this test are difficult to interpret. Virus isolation is the best means of identifying live active virus in infected animals. Care must be taken in sample acquisition and handling during transfer to a diagnostic lab. This test involves successful culture of the virus and false negatives are common. PCR for FHV-1 is widely available and can be performed on a swab of the conjunctiva. Although highly sensitive, there are a number of difficulties in interpreting the results of PCR testing. It has been shown that clinically normal cats, latently infected with FHV-1 can shed virus and test PCR positive. Virus may be present in tissue as a result of FHV-1 vaccination and lead to a positive result. As stated earlier, any cause of stress including concurrent disease can cause viral

reactivation, therefore, an animal may experience ocular disease from another cause which can result in shedding of virus and a positive PCR, even though FHV-1 may not be causing the disease. These factors all present a challenge and make interpretation of test results as important as the results themselves. FHV-1 infection is most commonly diagnosed clinically after other causes of disease are ruled out.

Treatment

Topical antibiotic therapy may be beneficial for treatment of concurrent or secondary bacterial infection. Antiviral therapy can be used, particularly if corneal ulceration is present, or in animals that are chronically affected. Antiviral drugs act by inhibiting viral replication. Topical preparations must be administered frequently, and can be irritating, which may limit their use in some patients. Oral antiviral drugs must be used with caution as many are highly toxic to cats. L-lysine is an amino acid supplement, which in-vitro, can inhibit viral replication. L-lysine is safe for use in cats and can be given as a dietary supplement. Anecdotally, L-lysine appears to reduce the severity and duration of disease and reduce the frequency of outbreaks, however, its exact benefit has not been established. In some patients, an attempt at treating the disease will result in a degree of stress that may actually worsen the symptoms, and treatment must be tailored to fit the patient.

FHV-1 can be a very frustrating disease to treat. In a majority of patients, the disease will run its course, with or without treatment and animals will recover and not exhibit clinical signs again. However, owners of cats suspected to be affected by FHV-1 should be made aware that this can be a chronic disease that can recur at any time, and has no cure.

Editor's box

Ocular Outlook

Editor: Sara Calvarese, DVM, DACVO
Managing Editor: Julie Gamarano

Eye Care for Animals welcomes your comments on the Ocular Outlook.
Please e-mail your feedback to jgamarano@eyecareforanimals.com
or call Julie at (480) 424-3947 extension 6911.

EYE CARE FOR ANIMALS HELPS TO PRESERVE SIGHT FOR WORKING CANINES

May 4th- 8th 2009

Eye Care for Animals is teaming up with The American College of Veterinary Ophthalmologists® (ACVO®) to get the word out to service dog handlers and take part in the 2nd Annual ACVO® National Service Dog Eye Exam event.

Service Dog groups include: guide dogs, handicapped assistance dogs, detection dogs, and search and rescue dogs. Dogs must be 'working dogs' which were certified through a formal training program or organization to qualify. The goal of this event is to make a large impact and to help preserve the sight of these animals whose partners depend upon them.

Participants who qualify must first register online for the event at www.acvoeyeexam.org. Click on Dog owners/participants at the top of the page and follow the instructions. Once a participant is registered, they can contact a local participating Eye Care for Animals and let them know they are registered for the ACVO Service Dog Event and need to make an appointment.

WHAT'S NEW AT EYE CARE FOR ANIMALS?

2009 New Openings

Austin, Texas
June 2009
Austin Veterinary Care Center
12419 Metric Blvd
Austin, TX 78758

Houston, Texas
June 2009
17395 Tomball Parkway
Suite 3-H
Houston, TX 77064

Avondale, Arizona
June 2009
13034 West Rancho Santa Fe Blvd.
Suite 102
Avondale, AZ 85392

These new locations allow us to continue providing your communities with state of the art medicine and compassionate care.

UPCOMING EYE CARE FOR ANIMALS CONTINUING EDUCATION LECTURES

Irvine, California
May 16 & 17

A Weekend with the Specialists

Marriott - Irvine
18000 Von Karman Avenue
Irvine, CA 92612

Please contact Julie Gamarano for
further information at 480-682-6911
jgamarano@eyecareforanimals.com

Scottsdale, Arizona
June 27

A Day with the Specialists

Millennium Resort
7401 N. Scottsdale Road
Scottsdale, Arizona

Please contact Deb Smith for
further information at 480-635-1110 option 4
dsmith@eyecareforanimals.com

Point Baker, Alaska
July 1-4

Eyes on Alaska

Lands End Lodge
Point Baker, Alaska

3-7 day trip options.
CE, whale watching and fishing
in all inclusive pakages.

Register by contacting Lands End Lodge
at 1-866-852-0191
www.landsendlodge.com

Rancho Mirage, CA
May 3

Desert Veterinary Conference

The Westin Mission Hills Resort & Spa
71333 Dinah Shore Drive
Rancho Mirage, CA

Please contact Gina Eichen, RVT for
further information at 760-772-2222
geichen@desertvetspecialists.com

Albuquerque, New Mexico
August 15 & 16

A Weekend with the Specialists

Embassy Suites Hotel & Spa
1000 Woodward Place North East
Albuquerque, New Mexico 87102

Please contact Julie Gamarano for
further information at 480-682-6911
jgamarano@eyecareforanimals.com

CVC Conferences

April 24-27
Baltimore, Maryland

Aug, 29- Sept 1
Kansas City, Missouri

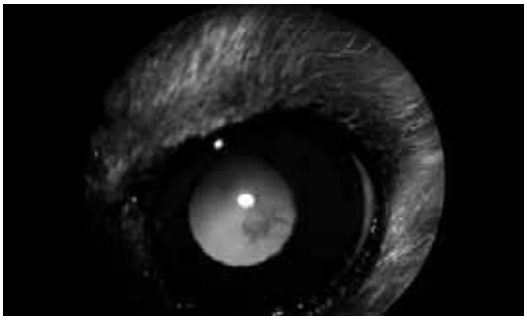
November 6-9
San Diego, California

CERF CORNER

Heather Kaese, DVM, MS, DACVIM, DACVO
Eye Care for Animals

Inherited Canine Cataracts

A cataract is defined as opacity in the lens. Cataracts can cause reflection, refraction or dispersion of light, with most appearing white or grey against the tapetal reflection. Cataracts are described by their location within the lens and by the amount of the lens that is affected. Incipient cataracts involve less than 10-15% of the lens volume. Immature cataracts are the next stage of progression with greater than 15% but less than 100% involvement. The presence of an incipient or immature cataract still allows for some visualization of the tapetal reflection, while mature cataracts completely obscure the tapetal reflection. With time, mature cataracts evolve to become hypermature cataracts, in which the dense crystalline lens material eventually liquefies and the lens capsule becomes wrinkled.



Although inherited cataracts are suspected in over 145 canine breeds, inheritance has only been proven in 16 breeds. The Boston Terrier, Miniature Poodle, American Cocker Spaniel, Standard Poodle and Miniature Schnauzer breeds have the highest number of reported cases of inherited cataracts. The exact cause of inherited cataracts in the dog has not yet been determined. In all breeds with inherited cataracts, the age of onset and the progression of cataract development may vary as multiple genes and environmental factors can modify the process.

Inherited cataracts in juvenile to middle aged purebred dogs are the most common type of cataract seen in veterinary ophthalmology. Although some inherited cataracts are present at the time of birth, they are often not recognized until two years of age. In some breeds, however, the cataracts occur later in life. The location and appearance of the lens opacities, age of onset, and course of progression will give clues as to whether or not a cataract is inherited.

Not all inherited cataracts will progress to blindness. Labrador and Golden Retrievers can develop relatively small triangular posterior sub-capsular cataracts that do not typically progress. Inherited cataracts that do progress to blindness do so at very different rates. In the Siberian Husky, for example, inherited cataract development is very gradual, while in the American Cocker Spaniel the progression tends to be very rapid.

Inherited cataracts can cause intraocular inflammation, which, over time, can result in scarring, blindness and painful glaucoma. Cataracts that do cause visual deficits can be removed surgically via phacoemulsification. Artificial intraocular lenses can be placed to return vision to pre-cataract levels. If cataract removal is not an option, treatment for lens-induced uveitis may increase comfort and prevent secondary glaucoma.

Check us out at www.eyecareforanimals.com

MEMO TO MANAGERS

"It's All About Service!!"

Karen Webster, MBA
Chief Operations Officer
Eye Care for Animals

Great customer service impacts every aspect of an organization, from the moment the client reaches out to us, to the moment they walk through the front door. How the front line staff bonds with clients and their pets is the most important aspect of our business. Showing compassion and interest in the patient and making the client feel valued on every single visit is a great way to market your Practice and help ensure the client will return! A client who receives great customer service will tell others about their positive experience!

How can your front line team *WOW* your clients?

- ✓ Greet clients and their pets at the front door and assist them with getting inside.
- ✓ Smile, smile, smile!!!
- ✓ Minimize wait times by getting clients and patients in an exam room with the doctor as quickly as possible.
- ✓ Expedite the completion of new client paper work by encouraging clients to print the form(s) from the website and have them completed upon arrival.
- ✓ Check clients in and out as quickly and efficiently as possible to help minimize wait times.
- ✓ Always acknowledge clients in front of you—even while you are on the phone. Eye contact, a simple hand gesture, and smile can go a long way.
- ✓ Address the client and patient by name.
- ✓ Survey your clients while they are checking out. Provide him/her with a simple postcard survey to complete—i.e. a rating from poor to great service, along with space for additional comments.
- ✓ Offer your clients water or coffee while they wait.
- ✓ Display a running lobby monitor with patient's photos.
- ✓ Offer clients to see a video of an applicable medical procedure.

Clients will judge the Practice on the medical treatment their pet receives, convenience of location, friendliness of staff, and overall cleanliness. WOWing clients and exceeding their expectations every time seems like such a simple task, yet this is so often not the case! The importance of delivering great client and patient service must be reinforced on a regular basis with the staff as it is a vital part of our organization. **"It's all about service!!"**

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