

OCULAR Outlook

A QUARTERLY PUBLICATION FOR THE VETERINARY COMMUNITY FROM EYE CARE FOR ANIMALS

MAKING THE MOST OF YOUR OPHTHALMIC EXAMINATION AND BASIC DIAGNOSTIC TESTS



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Eye Care for Animals

Many of my referring veterinarians frequently ask me about how to improve their ophthalmic examination and diagnostic skills. The purpose of this article is two-fold: first, to describe how to perform a thorough basic ophthalmic examination, and second, to discuss basic diagnostic tests, including Schirmer tear tests, fluorescein staining, and tonometry.

So, where to start? A good ophthalmic examination begins with the patient's signalment and a thorough history. Many ophthalmic diseases

are associated with specific breed predispositions, or are age, or gender associated, so the patient's signalment can begin to suggest specific differentials. Historical information should include the primary ocular complaint, history of ocular disease, current treatment, concurrent disease, attitude, appetite, etc., and travel history.

Before examining the affected eye, evaluate the patient from a distance. Observe the patient's ability to navigate the hospital and the exam room. Look for facial symmetry. Perform a basic physical examination, especially noting lymph nodes, signs of lameness, or other signs of systemic disease. Try to perform your ophthalmic exam with minimal restraint, and especially avoid the use of restraint around the neck, which could falsely elevate intraocular pressure.

Begin your exam in a well-lit room, evaluating palpebral reflexes and menace responses. Then, dim the lights or move to a dark room to assess dazzle reflexes and pupillary light reflexes in both eyes. Evaluate the overall appearance of the eyes to begin to decide on appropriate diagnostic tests. Always use a bright focal light source, such as a good penlight or



Schirmer Tear Testing

a transilluminator. Consider using head loupes for magnification. Get in the habit of performing a systematic examination, so that you are not sidetracked by the presenting complaint. Many clues to the cause of the current ocular problem may be found by thoroughly examining the fellow eye, and other structures in the affected eye. One systematic approach is to always evaluate the eye from the "outside" to the "inside," that is, begin

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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) 682-6911.

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Eye Care for Animals LOCATIONS

Avondale, Arizona
Gilbert, Arizona
Phoenix, Arizona
Scottsdale, Arizona
Tucson, Arizona
Chula Vista, California
Corte Madera, California
Culver City, California
Palm Desert, California
Pasadena, California
San Diego, California
Santa Rosa, California
Torrance, California
Tustin, California
Upland, California
Chicago, Illinois
St. Charles, Illinois
Wheeling, Illinois
Overland Park, Kansas
Wichita, Kansas
Lexington, Kentucky
Louisville, Kentucky
Annapolis, Maryland
Towson, Maryland
Lee's Summit, Missouri
Las Vegas, Nevada
Reno, Nevada
Albuquerque, New Mexico
Santa Fe, New Mexico
Akron, Ohio
Austin, Texas
El Paso, Texas
Houston, Texas
Round Rock, Texas
Orem, Utah
Salt Lake City, Utah
Sunset, Utah
Leesburg, Virginia
Pewaukee, Wisconsin

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with the peri-ocular structures, then move to the conjunctiva and cornea, then begin evaluating the anterior segment and the lens, and finally, the posterior segment/fundus.

When evaluating the eyelids, some important features to note include the presence or absence of blepharospasm, which generally indicates discomfort, conformational abnormalities, such as entropion or ectropion, and the

or cysts. The iris and pupil size and shape should be evaluated prior to performing mydriasis. Finally, the changes in lens position, transparency, and the integrity of the anterior lens capsule should be thoroughly assessed. Evaluation of the vitreous can be difficult, but it's transparency can be assessed when performing the fundic examination. A fundic examination can be performed via direct or indirect ophthalmoscopy.



Tonometry with the TonoPen

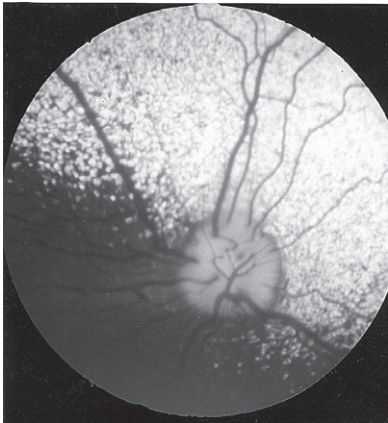
presence or absence of eyelid masses, distichia, trichiasis, ectopic cilia, or foreign material. The type and quantity of ocular discharge can also be helpful in forming a differential diagnosis. Next, evaluate the conjunctiva and third eyelid (TEL) for hyperemia, follicles, masses, TEL gland prolapse or everted cartilage, or foreign material. The cornea should be carefully examined for any loss of transparency, such as that caused by edema, neovascularization, injury, foreign bodies, masses, or deposits. Evaluation of the anterior chamber should include assessment of depth and changes in aqueous humor, and examination for the presence of masses

Pharmacologic mydriasis with tropicamide may be helpful to allow more thorough evaluation of posterior segment structures. When examining the fundus, be aware of normal variations, such as the appearance of a sub-albinotic fundus. Be systematic, and examine the fundus in quadrants to be sure you are evaluating it thoroughly. Note the appearance of the tapetum, is it uniform or are there areas of increased reflectivity, which could represent scarring? Are the retinal vessels normal or are they tortuous, attenuated, or dilated? Do you see any focal hemorrhages? Evaluate the optic nerve for size, color,

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Normal Fundus

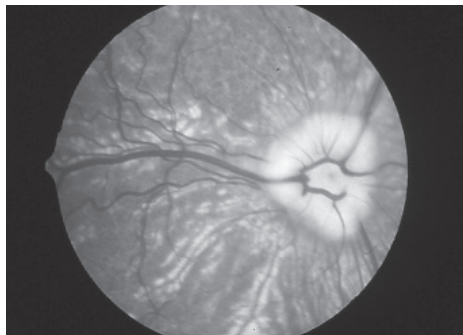
vascularity, cupping, etc. Contact your local board-certified ophthalmologist to discuss funduscopic changes.

If the eye appears red, if mucoid discharge is present, or if corneal fibrosis or pigmentation is present, consider performing Schirmer Tear Tests (STT.) This test evaluates basal, residual, and reflex tearing. The strip should be placed in the medial ventral conjunctival fornix for one minute, and whenever possible, both eyes should be evaluated. This will allow comparison between the affected eye and the non-affected eye in

cases of unilateral disease. The normal STT values for canine and feline patients are between about 15-25mm wetting per minute.

Next, consider whether or not corneal or conjunctival culture may be warranted. In cases of severe corneal ulceration, or severe conjunctivitis, culture or cytology may be desirable. Cultures should be obtained via moistened culture swabs, and the swab should only be touched to the site you wish to culture. Do not apply proparacaine or other topical preparations to the eye prior to performing a culture, as most topical ophthalmic preparations contain preservatives that may inhibit bacterial growth. Corneal or conjunctival cytology can be performed following the application of proparacaine if necessary.

Tonometry should be performed in most ophthalmic cases. Applanation tonometers, such as the TonoPen, or rebound tonometers, such as the TonoVet are the preferred instruments for estimating intraocular pressure (IOP). These instruments have become more affordable, and no practice should be without one. Some veterinarians are skilled at using the Schiottz tonometer, but corneal disease and improper patient positioning can cause significant



Normal Subalbinotic Fundus

errors when using this device. When measuring intraocular pressures, it is important to avoid pressure around the neck, either from restraint or from a tight collar, and it is important to evaluate the cornea prior to performing tonometry. Corneal edema, pigmentation, fibrosis, ulceration, and discharge on the cornea can all affect tonometry readings. It is also important to take into consideration the overall appearance of the eye. An eye with glaucoma, for example, is likely to be red, may have corneal edema, is likely to have a fixed and mid-range to mydriatic pupil, and vision is likely to be impaired. While normal intraocular pressures for canine and feline patients are between about 15-25mmHg, elevated intraocular pressure readings alone do not always indicate glaucoma.

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Spotlight on NEW LOCATIONS

COMING SOON

Springfield, MO

West Houston, TX

Upcoming EVENTS

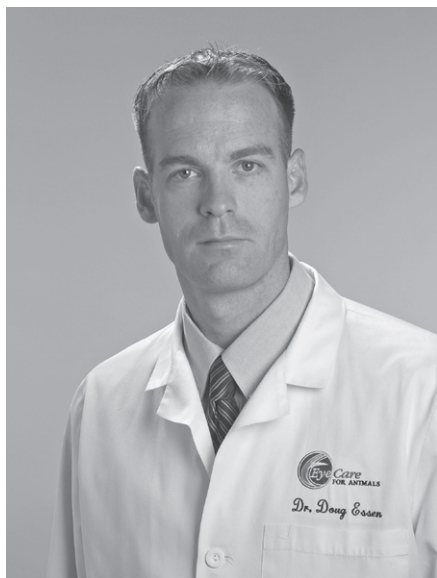
October 29-30, 2011 - Chicago, IL
CVESc Fall CE

November 3, 2011 - Torrance, CA
Meet the Specialists
6 - 9 pm

For more information please contact Julie Gamarano at jgamarano@eyecareforanimals.com

IN THE NEWS

JACK THE KANGAROO GETS HIS VISION BACK THANKS TO THE TUSTIN TEAM



Douglas Esson, DVM, DACVO

This month, Jack, a one-year old Red Kangaroo from a local wildlife center was brought to the Tustin Eye Care For Animals office after losing his sight. Clinical examination using standard equipment confirmed that Jack was suffering from cataracts in both eyes.

Jack's eyes were evaluated in much the same way as a dog or cat would be, using ultrasonography to visualize the

posterior segments of his eyes, gonioscopy to assess his iridocorneal structures and electroretinography to quantify the health of his retinas. This testing suggested that Jack was a candidate for cataract surgery and with local wildlife veterinarian Scott Weldy managing his anesthesia, Drs. Brinkis, Esson & Fritz donated their time and services to perform the surgery.



The surgical team: Drs. Scott Weldy, Julius Brinkis, and Douglas Esson

Previously reported complications associated with intraocular surgery in this species include opacification of the vitreous body and glaucoma, so after consulting with colleagues in Australia, the Tustin team utilized their highly specialized skills to combine a limited vitrectomy as well as endoscopic diode laser cyclophotocoagulation with Jack's phacoemulsification. Post-operatively this unusual patient is

recovering well and the absence of cataracts is doubtless improving his quality of life.

Many Eye Care For Animals doctors donate their time & services to treat wild and zoo animals in their local communities. Eye Care For Animals Tustin was pleased to be able to offer the latest diagnostic and surgical techniques to this unusual patient from down under.



Pre-operative appearance of the mature cataract OD



Dr. Kevin Fritz measures Jack's IOPs via rebound tonometry at a post-operative examination

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After assessing STTs, IOPs, and getting an overall look at the eyes, fluorescein staining can be performed. Sodium Fluorescein is used primarily to detect corneal and conjunctival epithelial defects. It can also be used to evaluate pre-ocular tear film deficiencies, by evaluating tear film break-up time. The Jones test uses fluorescein to assess nasolacrimal duct patency, and the Seidel test uses fluorescein to evaluate corneal wounds for leakage of aqueous humor.

Performing a thorough ophthalmic examination and appropriate diagnostic tests bilaterally will certainly lead to better ophthalmic diagnoses and treatments. Never hesitate to call and consult with an Eye Care for Animals ophthalmologist when questions arise. Remember that many ophthalmic diseases are time-sensitive, so prompt referral of complicated cases will benefit the patient, the client and ultimately, the referring veterinarian.



Ophthalmic Examination

CONGRATULATIONS TO OUR NEWLY BOARDED DIPLOMATES!



Rustin Sturgeon, DVM, DACVO
Lee's Summit, MO
Overland Park, KS
Wichita, KS



Amy Hom, DVM, DACVO
St. Charles, IL
Wheeling, IL



Kirsten Steele, VMD, DACVO
Reno, NV



Emily Moeller, DVM, DACVO
Tucson, AZ

SAFETY MEASURES FOR YOUR VETERINARY HOSPITAL



Karen Webster, MBA
President & CEO, Eye Care for Animals

Each June, the National Safety Council encourages organizations to get involved and participate in National Safety Month. NSM is an annual observance to educate and influence behaviors around the leading causes of preventable injuries. Safety awareness is very important throughout the year, and this segment shares with you safety tips to include in your hospital's safety and training plan.

If your hospital has a safety manual in place but it's sitting on a shelf collecting dust, let's blow off the dust, review those safety procedures and if necessary update with current information. Then sit down with your team and ensure they are following appropriate safety measures to help prevent workplace injuries.

To ensure that your safety manual is current with OSHA requirements,

you can find copies of every OSHA standard, directive, and interpretation through www.osha.com. In the simplest of terms, Step 1 is learning veterinary specific OSHA requirements; Step 2 is creating a safety implementation plan; Step 3 is putting together your hospital safety manual; Step 4 is assigning someone on your team to take on the additional responsibility of "safety officer" and then train the team; and Step 5 is conducting a "safety meeting" at least quarterly to review and reinforce safety measures as needed. Important things to include in your hospital safety manual are general safety policies and protocols, safety training, accident/injury/illness prevention, fire prevention and emergency preparedness, chemical safety, radiation/anesthesia safety, and medical waste plans. Another resource for safety solution tips can be found at www.safetyvet.com.

The designated "safety officers" at ECFA meet with their teams on a regular basis reviewing safety policies and protocols and providing training as needed. The team reviews new safety information to share with other employees, discusses general safety and paperwork issues, discusses modifications to Material Safety Data Sheet (MSDS) library information, discusses pertinent animal and medical related issues, and discusses sharps and medical waste protocols.

These safety measures help promote a safe and healthy hospital for your team, your clients, and your patients.

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