VETERINARY TEACHING HOSPITAL

VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

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WHAT'S INSIDE!

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UNIVERSITY OF MARYLAND 1807-1856-1920

EQUINE COPD CAN BE EFFECTIVELY MANAGED

Chronic obstructive pulmonary disease (COPD), also know as equine "heaves," is a disease of the horse's airways. Horses with COPD are usually allergic to specific substances. Approximately 12% of horses in North America have heaves, and the disease most commonly occurs in areas where the weather is warm and humid for part of the year. COPD affected horses may develop symptoms late in the summer or during the winter when the horse spends more time in the barn. Horses that develop heaves in the winter are probably responding to spores in the hay or barn dust, while "pasture heaves" is thought to be caused by molds found on grass.

Horses with COPD often have a dry cough and breathing difficulty when exposed to molds or other allergens. As they inhale the allergen, the airways become inflamed and narrowed. COPD horses must work harder to breath. They do this by using their abdominal muscles to help push air out of the lungs. Horses that have been "heavey" for a long time have enlarged muscles (heave line) that form a ridge along the abdominal wall. COPD horses that are not managed or treated can develop permanent lung damage. However, most horses with this syndrome can live a very useful and long life with appropriate management and/or medication.

When treating horses with COPD, it's best to make every attempt to remove the allergen from the horse's environment before turning to drug therapy. The types of medications that are available for treatment of COPD work by either opening up the airways or diminishing the allergic response.

All of these drugs have many side effects so it is best to use them only when changing the horse's environment does not solve the problem. You should consult your veterinarian about what therapy to use, since each horse responds differently to treatment.

One of the mysteries concerning equine COPD is why some animals develop the disease while others do not. COPD is similar in many ways to human asthma and research has provided evidence that lymphocytes play a role in the development of these conditions. Lymphocytes recognize harmful antigens and direct a response that results in removal of these antigens. Lymphocytes can distinguish between harmful and benign antigens. In humans with asthma and horses with COPD, the lymphocytes may mistake harmless antigens for ones that cause injury. As a result, these cells initiate an unnecessary immune response.

Research to develop a better understanding of the role of Lymphocytes in equine COPD is underway at the Blacksburg campus. Most of the research uses cells isolated from a blood sample and grown in a culture system.

If you have a horse with COPD and would consider allowing it to participate in this research, please contact Dr. Virginia Buechner Maxwell on the Blacksburg campus at 540-231-6454, or e-mail bmax@vt.edu. **--As reported in Equinews, Vol. 2, Spring/Summer 1997, VMRCVM, Blacksburg, VA.**

FRANK HAYES, SCWDS FOUNDER

Dr. Frank Hayes, founding director of the Southeastern Cooperative Wildlife Disease Study died on August 3, 1997. He served as SCWDS Director from July 1, 1957 until his retirement in 1987. Dr. Hayes was a pioneer in wildlife health and disease research, a teacher and an enthusiastic organizer of veterinarians and wildlife managers for the benefit of wildlife and agriculture. He was involved with the invention of the CapChur gun for tranquilizing wild animals.

Frank Hayes was a graduate of the University of Georgia, College of Veterinary Medicine and served as a naval officer in World War II. He received numerous awards and recognitions for his many valuable contributions throughout his career. **--KCR, September 1997.**

QUALITY OF LIFE FOR AGING DOGS: RELATIONSHIPS WITH OWNERS

Challenges are presented by deteriorating cognitive functions of aging pets, especially those kept by people who themselves are showing signs of aging. One recently completed study presents evidence that severe canine cognitive dysfunction shares both behavioral and neurological similarities with human Alzheimer's disease. Cognitive dysfunction in dogs undoubtedly reminds their owners, especially those more advanced in age, of their own vulnerability to such changes and also presents problems for their management.

Two studies have now addressed the behavioral changes associated with aging dogs. In one, of 69 dogs averaging 13.5 years of age, 46% exhibited 11 or more problems reflecting cognitive dysfunction including hearing, activity, attention, awareness and disruption of housetraining. In the second study of 60 aging dogs of similar age, reduced attention and awareness in interacting with owners and excessive sleeping ranked as more important than disturbance of normal housetraining. Pet owners may be more tolerant of elimination disturbances in their aging dogs than in aging human members of the family.

A drug, l-deprenyl, may alleviate some of the problems with cognitive dysfunction thereby adding to the quality of life for aging dogs. Research in aging pets may eventually lead to treatment of similar behavioral problems faced by human family members. **--Abstracted from: Hart, B. L., et al., 7th Int'l Congress on Human-Animal Interactions, Geneva (1995), as reported in Vet Med, Vol. 2, Issue 1, January 1996, Iowa State Univ., Ames, IA.**

PET BIRD MEDICINE TIPS

When examining any bird, even a baby, make sure that you gently evert the cloacal mucosa with a moistened, cotton-tipped applicator, to examine the color of the tissue and to check for irregularities, including papillomas. By applying 5% acetic acid to the mucosa, some lesions, including those of papilloma, will turn white, thereby making identification possible. Breeder birds with papillomatosis may pass this disease to their offspring during feeding in the nest. In my practice, mini-macaws seem to have the most problems with papillomatosis. Remember to check for papilloma lesions in your exam, as they represent a potential for problems, including secondary bacteria and candida infection. and bile duct carcinoma.

For oral or gastrointestinal candidiasis, this author prefers to make a suspension of fluconizole and nystatin for oral dosing instead of using only nystatin. Take one 100 mg fluconizole tablet and suspend it in 20 ml of a 100,000 U/ml nystatin suspension. By dosing at 0.5 ml PO per 1000 g body weight, Q 24 h or Q 12h, one can derive the combined benefits of topical medication and systemic therapy.

In stubborn candida infections in cockatiels, this combination will effectively treat most infections in 5-7 days. However, prolonged therapy (for up to 10-14 days) can also be used. For hatchlings on antibiotic therapy, this combination can be given to prevent overgrowth of yeast during treatment. In cases where nystatin alone is not effective, this combination works very well. For handfeeding formulas, dissolve a 200 mg fluconizole tablet in 30 ml water, add 0.75 ml of this suspension per cup of handfeeding formula. Mixing fluconizole in a sweet syrup may support the growth of candida and is probably not the best method of administration. **--Taken from: Wissman, M., A.A.A.V. Newsletter, June-August, 1996, as reported in Vet Med, Vol. 3, Issue 3, May 1997, Iowa State University, Ames, IA.**

THOUGHT FOR THE MONTH

Life is not about having and getting, it is about being and becoming. **--Anonymous**

TOP TEN OSHA VIOLATIONS

1. Incomplete written hazard communication plan.
2. No documentation of assessing personal protective equipment (PPE) need for the practice.
3. Insufficient fire and emergency plans.
4. Lack of employee training and documentation of hazards
5. Incomplete collection of Material Safety Data Sheets (MSDS).
6. Inappropriate PPE on hand.
7. Inappropriately labeled chemical containers.
8. Not posting OSHA forms.
9. Storing food in refrigerator along with chemicals, injectables, etc.
10. Inadequate evacuation system for waste anesthetic gases.

--Courtesy AVMA Professional Liability Insurance Trust

RABBIT CARE

Rabbits normally molt once a year. They start shedding their old haircoat over the back, progressing toward the rump and down the sides, then the underside and finishing on the chest. Regular grooming with the hands or a soft brush will expedite the molting process.

The animals' coat may be kept clean with corn flour or talcum powder rubbed into the haircoat and then brushed out. **--Karen A. Kandra, FDA Veterinarian, 13:1-3, 1997.**

SLUGGISH SNAKES

With winter we will all be getting phone calls about anorectic snakes. The most common cause of this in the winter is allowing the snake to become too cool. It is critical to keep the SURROUNDING AIR in a snake's environment between 80 and 90 degrees (tropical species). Hot rocks and heat tape won't do the job. Only a space heater will work. Also, don't encourage an owner to rely on a light as a heat source. As snakes cannot close their eyes, they need 12 hours of darkness to avoid excessive stress. Workup for an anorectic snake (does not respond to heat) should include serum chemistry, CBC and a fecal. For those clients who do not want a workup, empirical treatment should include metronidazole 1/2 tablet (repeat in 3 weeks), B-vitamin injection, cortisone injection and force feeding of Entrolyte and baby food via feeding catheter. **--Alex Casuccio, as reported in WVVMA Fact Line, Vol. 11, Issue 4, 12/96.**

IGUANA DIETS

Much has been done recently in the area of iguana nutrition. As it turns out, we veterinarians have been recommending too much protein. This has lead to rapidly growing, short lived iguanas. In the wild, iguanas spend their lives in fig trees, eating fig tree leaves almost exclusively. They do not eat bugs or other sources of protein. Research is showing that captive iguanas do best with 96% of the diet as dark leafy vegetables (collard greens, turnip greens, timothy hay, any flowers, Chinese cabbage, grape leaves, mustard greens, dandelion leaves, grass clippings, etc.). The remaining 5% of the diet should be fruit. (Most people greatly over do the fruit). The following should NEVER be fed: Lettuce of any type, broccoli, cat food or dog food. Commercial vitamin/mineral supplements should only be given once monthly (they have too much vitamin D3 and cause renal calcification). Calcium can be supplemented by applying a light dusting of crushed "cuttle bone" or oyster shell daily on the food. **--Alex Casuccio, as reported in WVVMA Fact Line, Vol. 11, Issue 3, 9/96.**

ALTERNATIVE MEDICINE

A landmark survey in 1993 headed by Dr. David Eisenberg, a Harvard Medical School internist, found that one in three adults in the US uses some form of alternative medicine. An estimated total of $13.7 billion was spent on unconventional therapies and represented more office visits to alternative practitioners than to primary care physicians. The survey also found that more than 70% of patients never told their doctors about this use of alternative therapy. Americans spent $3.24 billion on herbal remedies in 1996, up 15% over 1995.

The National Institutes of Health has established an Office of Alternative Medicine to evaluate unconventional therapies, and Harvard Medical School has added courses on complementary medicine for both physicians and students. There is a dearth of scientific knowledge and data about the safety and efficacy of most alternative treatments. Patients might be wiser to discuss their alternative medicines and therapies with their doctor. The widespread belief that anything "natural" is safe can be a dangerous assumption. **--Harvard Health Letter, Vol. 23, No. 1, November 1997.**

FELINE SEIZURE DISORDERS

The Ontario Veterinary College, Guelph, Ontario studied 30 cats that had been referred for recurrent seizures. Diagnostic procedures included physical, neurological, and fundic examinations; CBC; serum biochemistry; urinalysis; serology for FeLV, FIV, FIP, toxoplasma gondii; CSF analysis; MRI of the brain; neuropathologic exam of euthanized cats and surgical biopsy specimens.

All 30 cats were found to have structural brain diseases. Non-suppurative meningoencephalitis was found in 14 cats, feline ischemic encephalopathy in 6, meningioma in 2, post-traumatic epilepsy in 1, polycythemia vera with secondary brain lesions in 2, and cerebral abscess in 1.

The most common cause of seizures in cats is structural brain disease. Structural brain lesions can often be detected on the basis of seizure patterns and the results of neurologic examinations. Cerebrospinal fluid analysis and brain imaging are essential to determine the cause of brain lesions.

Causes of seizures found in this study differ from those reported to be most common. Both non-suppurative meningoencephalitis and ischemic encephalopathy (in a milder form than the classic disease) appear to be common causes in cats.

Treatment was dictated by the cause and frequency of the seizures. Cats suffering from cluster seizures or status epilepticus were treated with oral phenobarbital and constant IV diazepam. The other cats were treated with long-term oral phenobarbital. Follow-up evaluation of seizure frequency included serum antileptic drug concentrations, and hematologic and serum biochemical values.

Six cats were euthanized without any therapy at the owners' request. Of the remaining cats, 20 of 24 were alive at the time of final follow-ups. Of these, 17 had a good outcome; 11 were not having any more seizures, and 6 were having a low frequency of seizures. Seizures were not well-controlled in 3 other cats, and 4 cats were eventually euthanized because of intractable seizures.

The results of this study indicate that the severity of seizure disorder in cats is not a good predictor of outcome, and that aggressive treatment can be rewarding, even in the most severe cases. **--AD Quesnel, JM Parent, and W McDonald, Ontario Veterinary College, JAVMA 210(1):65-71, 1997 as reported in Feline Health Topics, Vol. 12, No. 1, September 1997, NYSCVM, Cornell University, Ithaca, NY.**

URINARY BLADDER MARSUPIALIZATION FOR THE TREATMENT OF OBSTRUCTIVE UROLITHIASIS IN SMALL RUMINANTS

Treatment of obstructive urolithiasis in small ruminants is frequently complicated by recurrence of urinary obstruction. Surgical procedures such as urethrostomy and penectomy provide short-term relief of obstruction, but are associated with a high incidence of stricture and are not satisfactory for the treatment of pets. Cystotomy and tube cystostomy procedures result in improved survival and long-term outcome, but these procedures often involve more expense and hospitalization time. Urinary bladder marsupialization is a simple, economical procedure that provides long-term resolution of urinary outflow. Originally performed on animals as a last recourse when the animal's urethra had ruptured or strictured, the procedure has been recently performed as the primary procedure when financial limitations are present.

With the animal under general anesthesia and prepared aseptically for abdominal surgery, a 10cm caudal paramedian celiotomy is performed approximately 3cm lateral and parallel to the prepuce. The urinary bladder is identified, and the bladder apex is exteriorized with gentle traction. Following decompression and placement of stay sutures, a 4cm cystotomy is made in the bladder apex. A second, 4cm caudal paramedian celiotomy is made contralateral to the first incision. The bladder apex is exteriorized through the second incision by passage of forceps from the second incision to grasp the bladder stay sutures and provide traction. After determining that no bowel has been entrapped by the bladder, the seromuscular layer of the bladder is circumferentially sutured to the abdominal fascia with 2-0 monofilament absorbable material in a simple horizontal mattress pattern. The full-thickness incised edge of the cystotomy is then circumferentially sutured to the abdominal skin with 2-0 monofilament absorbable material in a simple interrupted pattern.

This procedure has been performed on 21 male goats at the Virginia-Maryland Regional College of Veterinary Medicine in Blacksburg, VA and the College of Veterinary Medicine at the University of Missouri at Columbia. All of the goats were exhibiting signs of urinary outflow obstruction, and several of the goats presented with ruptured bladders. Twenty of the goats survived and were discharged after a median hospitalization period of 7.5 days (range, 1-14). One goat developed a mild bladder mucosal prolapse in the immediate postoperative period which responded to resection of the prolapsed mucosa. Cystitis was reported in one goat, but resolved following short-term medical therapy. The marsupialization site strictured in 3 animals between 6 and 7 months postoperatively; one animal was able to urinate normally from its penile urethra, and required no further therapy. The second goat underwent stomal revision, then re-strictured 4 months later; this goat had experienced no further problems at the time of follow-up, 4 years after the second stomal revision. The third goat underwent stomal revision, and has experienced no further problems at the time of follow-up (7 months after revision). The median time of follow-up for 18 of the 20 surviving goats was 9 months (range, 2 months to 4 years). Sixteen of the eighteen owners available for follow-up were satisfied with the procedure, and would have the procedure performed again in a similar situation. Although all owners contacted reported urine scalding of the goats' ventral abdominal areas, most described the scald as mild in severity.

Recommendations for postoperative care are primarily aimed at minimizing urine scald and odor. Keeping the ventral abdomen clipped and protected with zinc oxide (Desitin®) ointment once or twice weekly often provides adequate protection from scald and minimizes urine soaking of the hair. In the summer, application of fly-repellent lotions or ointments (such as those marketed for use on horses) around the marsupialization stoma decreases fly irritation of the site. **--Kimberly A. May, DVM; H. David Moll, DVM, MS, Diplomate ACVS; Laurie Wallace, DVM, MS, Diplomate ACVIM; R. Scott Pleasant, DVM, MS, Diplomate ACVS, Rick D. Howard, DVM, PhD, Diplomate ACVS.** **Presented at the Residents' Forum at the 1997 ACVS Veterinary Symposium, Orlando, Florida.**

CE OPPORTUNITIES
WINTER 1998

Date	Topic	Location	Contact Hours
February 27-28	Clinical Pathology Case Conference	Blacksburg	10
March 6-7	Canine & Feline Reproduction	College Park	10
March 20-21	Echocardiography	Blacksburg	10
March 27-28	Ultrasonography	Blacksburg	10
April 24-25	Equine Pathology	Blacksburg	10

Please note: The courses listed above are limited enrollment and feature a hands-on laboratory experience. Program brochures will provide course details. For registration or more information, please contact:

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Donaldson Brown Center
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SMALL ANIMAL SERIES

Small Animal Orthopedic Series	begins January 23	30 CE hours
Head & Neck Surgery & Dentistry Series	begins March 13	40 CE hours

Our Series courses represent the highest quality of continuing education for veterinarians with hands-on, interactive five-hour sessions in small groups under the direct supervision of VMRCVM faculty specialists.

RADIOGRAPHIC AND ECHOCARDIOGRAPHIC FINDINGS IN CATS

Eighteen cats were experimentally exposed to *Dirofilaria immitis* via mosquito bites. Thoracic radiography was performed prior to exposure and at 5, 7, and 9 month intervals following exposure. Necropsies were performed on all cats. Radiographic findings in heartworm positive cats included bronchointerstitial lung disease, lobar pulmonary arterial enlargement, and pulmonary hyperinflation. In most heartworm positive cats, lobar arterial enlargement resolved as the disease progressed while pulmonary hyperinflation progressively became more common. Pulmonary patterns in heartworm positive cats remained abnormal throughout the study. Cardiomegaly was seen in less than 50% of the cats with adult heartworms at necropsy. This study suggests that the radiographic appearance of heartworm disease is variable and radiographic changes are dependent on the time post infection at which cats are evaluated.

Echocardiographic examinations were randomly performed on 16 of 18 cats. Heartworms were identified in seven cats. No false positive identifications were made. Persistent pulmonary disease accompanied by resolving vascular disease in heartworm cats with pulmonary hyperinflation may be difficult to distinguish from cats with feline allergic lung disease. Echocardiograms may be helpful in identifying adult heartworms in cats in which the radiographic signs or immunodiagnostic data are insufficient to provide a diagnosis. **--As reported in Vet Med, Iowa State University, May 1997.**

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