



# VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

55  
46  
93  
2  
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October - December 1999

No. 93

## WHAT'S INSIDE!

Risk of Feline Infectious Peritonitis in Cats Naturally Infected with Feline Coronavirus..... Page 2

Ferret Cardiopulmonary Disease..... Page 2

UF Researchers Investigate Phenomenon of Seizure-Alert Dogs..... Page 3

New VMRCVM Faculty Members ..... Page 4

Practice Tip..... Page 4

Worth Noting ..... Page 4

Health Status of Dogs and Cats..... Page 4

Diagnostic Investigation of Dogs With Pyrexia..... Page 5

Biological Control of Bird Pests ..... Page 5

Increase Your Staff's Contribution to Medical Revenue..... Page 6

Continuing Education Opportunities..... Page 7

Poisonous Plants Guide Now Available on CD-ROM..... Page 7

Our Crowded Planet ..... Page 7

Would You Believe..... Page 7

## THOUGHT FOR THE MONTH

If you don't have time to do it right, when will you have time to do it over?  
Anonymous

Kent C. Roberts, DVM  
Extension Veterinarian



This newsletter is published quarterly in support of the outreach program of the Veterinary Teaching Hospital VMRCVM, Blacksburg, VA and is prepared for and distributed to veterinarians in the Mid Atlantic Region.



## RISK OF FELINE INFECTIOUS PERITONITIS IN CATS NATURALLY INFECTED WITH FELINE CORONAVIRUS

A longitudinal survey of 820 cats in 73 households was conducted over a period of 6 years to establish the fate of pet cats that were seropositive after natural exposure to feline coronavirus (FCoV). In particular, their risk of developing feline infectious peritonitis (FIP) was determined. The seropositive cats were assigned to 1 of 3 groups: cats from households in which FIP had not been diagnosed, but from which kittens had been relocated and subsequently died of FIP; and cats from households in which FIP had not been diagnosed. Cats in the first group were not at greater risk of developing FIP than were cats in the other 2 groups. Consequently, and household in which seropositive cats live must be considered a potential source of FCoV that can cause FIP. There was no evidence that the enhanced disease, which has been described after experimentally induced infection of seropositive cats, exists in nature. Thus, analysis of the survival of the seropositive cats over periods of up to 36 months indicated that their risk of developing FIP decreased with time, suggesting the development of immunity rather than increased susceptibility to disease. In addition, of 56 cats deemed to have been naturally reinfected because their anti-FCoV antibody titers decreased and subsequently increased, only 3 developed FIP. These findings help answer the practicing veterinarian's question as to whether it is safe to introduce a seropositive cat from one household into another household of seropositive cats. Previously, a concern was that exposure to another strain of FCoV would result in increased susceptibility of either the new cat or the incumbents to FIP. We now know that this outcome is unlikely. – Diane D. Addie, Sarah Toth, Gordon D. Murray, et al in *Am J Vet Res* (March 1995), as reported in *JAVMA*, Vol. 206, No. 10, May 15, 1995.

## FERRET CARDIOPULMONARY DISEASES

**Heartworm Disease:** Symptoms of heartworm disease may vary from a mild cough early in the course of the disease to severe pulmonary congestion, ascites, pleural effusion, severe heart murmurs and sudden death. Heartworm treatment is difficult at best. The author has treated 30 ferrets with caparsolate or Immiticide and has had about a 60% survival rate overall. It is possible that ferrets should be treated similarly to cats, that is, using oral prednisone, heartworm preventive, and symptomatic treatment. At this time it is not known what the survival rate of ferrets not treated with adulticides might be. If a ferret lives in a heartworm-endemic area, it should be on heartworm prevention. This is true even for "indoor-only" ferrets. The author recommends one of two methods for heartworm prevention. First, the feline Heartguard chewable tablet is a good option, palatable to many ferrets and in a small enough tablet that the ferret will ingest the whole thing. The tablet for cats who weigh less than five pounds is ideal. Second, if the ferret will not ingest the tablet, an oral Ivermectin in oil suspension can be used. We mix 0.3 cc of the 1% injectable Ivomec in one ounce of Ferretone or propylene glycol (Ivomec is not water-soluble). This makes a 100-microgram/ml suspension. This should be dosed at 0.1 ml per pound of body weight once monthly. An oil-based suspension should have a shelf life of about two years if kept refrigerated and out of sunlight.

**Thymic Lymphoma:** Thymic lymphoma often presents as dyspnea or coughing. There will often be large amounts of serosanguinous or milky thoracic exudate. On radiographs, a mass will be seen anterior to the heart, sometimes pushing the tracheadorsally. The first order of business is often to do a needle aspirate thoracocentesis, both to assist in diagnosis and to buy some time for the ferret in emergency situations. Some ferrets will present with severe dyspnea and cyanosis, and removing large amounts of thoracic fluid will make the ferret comfortable while options are discussed.

**Influenza and Canine Distemper:** These two viruses are easily confused clinically in the first week or so of disease. Influenza can cause coughing, sneezing, and mucopurulent ocular or nasal discharge, but these will begin to resolve after about a week. In canine distemper, clinical signs will continue to worsen, with seizures beginning at about day 12 after onset of clinical signs. We treat influenza with OTC children's diphenhydramine syrup at about 1 mg per pound two or three times daily. The author does not recommend routine use of aspirin, and Tylenol should never be used in the ferret. Antibiotics may be warranted in some instances to treat secondary infections, but caution about over-use of antibiotics should be observed.

**Bacterial Pneumonia:** Bacterial pneumonias independent of underlying disease do occur. Antibiotic selection should be based on nasal or tracheal cultures when possible. Since most ferrets have white blood cell counts in the 4,000-8,000 range, concern is warranted when a ferret has respiratory symptoms and a WBC greater than 10,000. This situation warrants cultures and antibiotics. —Taken from: Kemmerer, D.W., *Proc. Natl. SCAVMA*, May, 1998 as reported in *Vet Med*, Vol. 5, Issue 4, July 1999, Iowa State University, Ames, IA.

### UF Researchers Investigate Phenomenon of Seizure-Alert Dogs

Gainesville, Fla. – Determined to separate fact from fiction, University of Florida researchers are attempting to document the existence of seizure-alert dogs – animals that purportedly can detect seizures about to strike their owners and warn them of the coming trouble. Even a few minutes' advance notice could allow the stricken person to find a safe environment prior to the seizure's onset, take seizure-blocking medication or contact a caregiver or emergency medical help.

"A number of reports in the popular press, electronic media and dog-related publications assert that some dogs have this ability," said Roger Reep, associate professor of physiological sciences at UF's College of Veterinary Medicine. "If these phenomena are real and occur reliably, this offers great hope to people who experience seizures." "Furthermore, similar to guide dogs who serve as constant companions to visually impaired people, early-alert dogs could allow people who are presently homebound the potential to expand their ability to care for themselves, and in some cases, to obtain employment," Reep said.

Working with a \$31,000 grant from the Able Trust, a private, Tallahassee-based foundation that helps people with disabilities find employment, Reep and his colleagues, Paul Davenport, canine information specialist/trainer Deb Dalziel and neurologist Basim Uthman will study not just anecdotal evidence from people who say they have such dogs, but also the groups that claim to be able to train them.

A person with recurring seizures is said to have epilepsy – a generic term used to define a variety of seizure disorders, according to information provided by The Epilepsy Foundation of America. About 25-million, or one in 10, Americans have had, or will have, a seizure at some point in their lives.

In the project's first phase, researchers will give 300 questionnaires to patients and former patients of the Epilepsy Clinic at Shands hospital at UF and at the Veterans Affairs Medical Center. "We are trying to determine if these people have companion animals, and specifically if they have dogs that seem to be alerting them to an oncoming seizure," Reep said. "Our preliminary findings suggest that dogs respond in a variety of ways – barking, nudging, vocalizing, licking, etc. – before, during and after a seizure. Previous VA research has shown that certain events occur in the brain prior to a seizure, Uthman said.

"These events are demonstrated by complex mathematical analyses, but are not readily apparent to the patient, a neurologist or the patient's family," he said. "It's possible, however, that these changes in the brain might be sensed by a dog."

It has also been suggested that epileptic patients may emit certain odors just before a seizure, Uthman added. "A dog has a sense of smell much more powerful than humans," Uthman said. "You and I might not smell a change, but a dog could."

In the study's second phase, the focus shifts to organizations that work with seizure/alert/seizure-response dogs. "Some of these places make more aggressive claims than others," Reep said. "Different organizations have varying degrees of success." Researchers want to know what dog trainers have to say about the reliability of training dogs to "detect and alert". Among the questions team members hope to answer are whether the ability to detect seizures, if some dogs do have it, is a spontaneous reaction or a trainable behavior.

Eventually, the team hopes to bring dogs into the clinical setting where patients can be physiologically monitored, to determine the cues to which dogs may be alerting. "This study represents UF's first scientific approach to determining if these dogs do exist, and if so, whether it would be possible to selectively breed for these traits," said Charles Courtney, associate dean for research and graduate studies at the UF veterinary college. "After we reviewed (Reep's) proposal, we felt this was a great opportunity to study in more detail how these dogs act with patients who have epileptic seizures," said Irristen Encizo, the Able Trust's spokeswoman, who added that the trust's primary goal is finding jobs for disabled people. "If you are able to alert people to when seizures are going to occur, you have more control in the workplace," Encizo said. "Lots of times, there's that stigma, 'I can't hire this person, because what if they have a seizure?' But if they have a dog that can alert them, that would put that fear to rest."

For more information about the project, call Reep at (352) 392-4700, ext. 3859, or e-mail: [reep@ufbi.ufl.edu](mailto:reep@ufbi.ufl.edu), or contact Sarah Carey, Health Science Center Communications (352) 392-4700, ext. 5206 or e-mail: [careysmail.vetmed.ufl.edu](mailto:careysmail.vetmed.ufl.edu). – **University of Florida, December 1997 as reported in University of Georgia Vet. Newsletter, February 1998**

## NEW VMRCVM FACULTY MEMBERS

Five new members have joined the college faculty at the Virginia Tech campus in recent weeks. They are:

**Dr. Ernest Hovingh.** A Guelph D.V.M. graduate with a Ph.D. in epidemiology and minors in biostatistics and dairy health management from the University of Prince Edward Island, Dr. Hovingh is an assistant professor in ruminant health with an appointment in Cooperative Extension.

**Dr. Wallace Palmer.** After receiving his D.V.M. at the University of Tennessee, Dr. Palmer practiced at the Blue Ridge Animal Clinic in Lexington, VA prior to joining the Blacksburg faculty as a clinical instructor in Equine Field Services.

**Dr. Norris Adams.** After receiving his D.V.M. at Mississippi State University, Dr. Adams practiced at Fairfield Equine Associates in Monroe, CT, prior to joining the Blacksburg faculty as a clinical instructor in Large Animal Surgery.

**Dr. Zorana Ristic.** A graduate of the veterinary college at the University of Giessen in Germany, Dr. Ristic completed a two year residency in dermatology at the University of Georgia and stayed on as a clinical instructor. She returned to private practice in Germany before joining the veterinary college faculty in Blacksburg as an assistant professor in dermatology.

**Dr. Marie Suthers-McCabe.** After earning her D.V.M. at The Ohio State University, Dr. Suthers-McCabe worked in private practice in Ohio. She served as program director of Veterinary Technology at Columbus State Community College before joining the Blacksburg faculty as an associate professor in companion animal Extension with the focus on human-companion animal interaction. She has been active in animal assisted therapy and Pet Partners, as well as veterinary homeopathy.

### PRACTICE TIP

Very often the practitioner has the need to compare blood test values from a sick animal with normal values for that species. Wouldn't it be better to compare the sick animal's hemogram with the normal values from that same animal?

This ability to compare blood values in the abnormal patient with values from the same animal when healthy is not only desirable, but very possible. Incorporate a blood profile as part of the annual health exam in all patients. Each hemogram from the healthy animal builds the database for later comparison should that animal become sick. Blood values for that individual patient are then available when needed.  
**-- KCR, April 1999.**

### WORTH NOTING

In terms of 1990 employment, floriculture and horticulture were the second leading employer industries in U.S. production agriculture, right behind beef. **-- Agricultural Research, ARS, USDA, April 1999**

Finland recently announced that more than half its population of 5.1 million people has a mobile telephone. Finland is home to Nokia, a major manufacturer of mobile phones. **-- Kent Roberts June 1999**

### HEALTH STATUS OF DOGS AND CATS

A cross sectional study of the most common disorders of dogs and cats examined by veterinarians in the U.S. during 1995 revealed interesting data obtained from 15,226 cats and 31,484 dogs seen in private practices.

Dental calculus and gingivitis were the most commonly seen problem. About 7% of all dogs and 10% of all cats examined were considered healthy when examined.

Many conditions were common to both species, such as flea infestation, conjunctivitis, diarrhea, and vomiting. Dogs were more likely to be presented for lameness (3.1%), disk disease (1.6%), lipoma (2.3%), and allergic dermatitis (3.1%). Cats were more often presented for renal disease (1.9%), cystitis (1.5%), feline urologic syndrome (1.5%), and inappetence (1.5%).

***Journal of the American Veterinary Medical Association, May 1999, Vol. 214, No. 9***

## DIAGNOSTIC INVESTIGATION OF DOGS WITH PYREXIA

Records from 101 dogs presented to Queen's Veterinary School Hospital (Cambridge, England) for investigation of unexplained pyrexia were reviewed. These dogs had temperatures in excess of 40°C (i.e., > 1.5°C above normal) on more than one occasion. Dogs were divided retrospectively into six groups according to the final diagnosis: (1) immune-mediated disease (22% of all cases), with immune-mediated polyarthritis accounting for 20 of 22 dogs in this category; (2) primary bone marrow abnormalities (22%); (3) infectious diseases (16%); (4) neoplasia (9.5%); (5) miscellaneous conditions (11.5%); and (6) pyrexia of unknown origin (19%). The frequency of positive results obtained in investigative tests was also assessed.

The most common diagnosis by far was immune-mediated polyarthritis and, in the absence of any other findings, this diagnosis should be ruled out before proceeding with other investigations. A number of the dogs in this study had inflammatory joint disease (detected by cytological examination of joint aspirates) and yet had no clinical evidence of joint pain or periarticular swelling. However, it should be borne in mind that (secondary) immune-mediated polyarthritis may be associated with other diseases such as neoplasia and bacterial endocarditis. Further investigation may be required to rule out underlying causes, particularly infection, in cases of immune-mediated diseases before immunosuppressive therapy is commenced.

The most useful diagnostic procedures in this study were radiography and cytological examination of synovial fluid and bone marrow. A diagnosis was made on the basis of radiological examination in 24% of all cases in which a final diagnosis was made. Cytological examination, primarily of joint fluid, but occasionally of aspirates from lymph nodes, was also found to be a highly successful diagnostic technique in the present study. Where a definitive diagnosis was made, it was based on cytological findings in over one-third of the cases. Joint aspirates should be routinely performed in dogs with unexplained pyrexia where a diagnosis is proving elusive.

Hematological and biochemical screening tests were essential because problems were often identified towards which further investigation (e.g., bone marrow aspiration or bile salt assays) could be directed. It would appear that the presence of a significant neutrophilia is a more likely indicator of inflammation or immune-mediated disease (particularly polyarthritis) and that few animals with chronic infectious processes have a significant neutrophilia at the time of referral. Neutropenia, if associated with pyrexia, certainly warrants bone marrow evaluation.

Although few positive results were obtained in this study, blood culture should be performed in all cases of unexplained pyrexia where diagnosis is elusive.

**Taken from: Dunn, K., and J. Dunn, *J Small Animal Practice* 39: 574-580, 1998, as reported in *VetMed*, Iowa State University, March 1999, as reported in *Veterinary News*, May 1999, Pennsylvania State University, University Park, PA.**

## BIOLOGICAL CONTROL OF BIRD PESTS

Many dairy producers complain about the mess and noise that sparrows, grackles, and starlings make in naturally ventilated facilities. Birds can also contribute to the spread of Salmonella and other infectious agents when they defecate on feeds or over feed bunks.

Commercial and home remedies to get rid of pesky birds have limited success. Noise-makers can become more annoying than the birds themselves. Wild bird hunting and poisoning are regulated, so a natural biological control approach may be needed. Researchers at the University of Minnesota recommend American kestrels, or "sparrow hawks", to help control starling, blackbird, and sparrow numbers.

To attract American kestrels, install a nest box and perches. The nest should be lined with wood chips or coarse wood shavings because a kestrel will not line its own nest. The nest should be located away from obstructions and regular human and equipment activity but should be placed where it can be observed and maintained periodically. It may take a year or two to attract a nesting pair of kestrels.

For more information about American kestrels, visit:  
<http://www.raptor.cvm.umn.edu/raptor/rfacts/amkest.html>

**Dick Wallace, DVM, MS. *Illinois Vet. Bulletin*, vol. 7, no. 1, April 1999, as reported in *Veterinary News*, May 1999, Pennsylvania State University, University Park, PA.**

## INCREASE YOUR STAFF'S CONTRIBUTION TO MEDICAL REVENUE

Many employees in veterinary practices feel they have little control over medical revenue. After all, the doctors generate most revenue, right? True, but every team member plays an important role. One of the key trends in Well-Managed Practices<sup>™</sup> is increasing the staff's contribution to medical revenue. Placing management at the staff level and allowing employees to assume responsibility is an important first step.

There are three levels of management in a veterinary practice: decision making, implementation, and the responsibilities associated with implementing management decisions. Owners establish parameters for the five areas of management – employee, client, financial, medicine, and facilities, equipment and technology – and delegate implementation and the responsibilities associated with implementation to key team members.

Few practice owners are natural delegators. Why? "I can do it better myself, ... I like doing this," "It has to be done right now," "I wouldn't ask my staff to do anything I wouldn't do," are a few of the reasons given. Owners of Well-Managed Practices<sup>™</sup> know hiring the right people and allowing them to assume responsibility helps secure the practice's future.

Placing management at the staff level enhances efficiency and allows the doctors to focus on patient care. When employees assume responsibility doctors have time to see more patients. Consider this example: Dr. Smith delegates responsibility for staff meetings to Ann, the practice manager, inventory management to Sandy, a licensed technician, and questions concerning client charges to Joe, the receptionist. Dr. Smith now is available six additional hours each week for patient appointments. Assuming she sees 3 clients per hour and has an average charge of \$91, medical revenue increases by \$85,000 per year.

Just as owners must do what only they can do – make management decisions and practice medicine – it's just as important for every team member to focus on the most efficient use of their time, and do what only they can do. Receptionists could escort clients to the exam room, fill prescriptions and clean and stock exam rooms, but it's not the best use of their time. Likewise, licensed technicians could clean kennels and answer the phone, but it's not the best use of their time.

Will staff costs go up? Possibly, but increased staff costs don't necessarily mean lower profits. Well-Managed Practices<sup>™</sup> with more staff per doctor typically generate more revenue (see illustration 1) and have more dollars available for other operating expenses (see Illustration 2). Practice owners hire educated, experienced people, provide excellent training, and compensate fairly.

### Illustration #1

#### Staff's Contribution to Practice Revenue – Companion Animal Practices

| # Staff per Doctor      | Total Revenue per Doctor |
|-------------------------|--------------------------|
| Less than or equal to 2 | \$267,000                |
| 2.6 to 3                | \$326,000                |
| More than 3.5           | \$428,000                |

### Illustration #2

|                   | 1996             | 1998             |
|-------------------|------------------|------------------|
| Revenue           | \$600,000        | \$700,000        |
| Staff Expense %   | x22%             | x24%             |
| Staff Expense     | <u>\$132,000</u> | <u>\$168,000</u> |
| Dollars Available | \$468,000        | \$532,000        |

Think of your practice as a giant sphere. Clients are the center of the sphere, and the staff revolves around the client. You are the glue holding it all together. Each component is necessary. Clients and patients are the reason for your services. An efficient, knowledgeable staff provides high-level service and allows the doctors to focus on high-quality medical care. The result – an efficient practice where the patient comes first and everyone enjoys their time at the practice. – **Denise L. Tumblin, CPA, Wutchiett & Associates, Inc., 2929 Kenny Road, Suite 215, Columbus, OH 43215-2415, (614) 457-8444 as reported in WVVMA Factline Vol. 14, Issue 2, June 1999.**

**CONTINUING EDUCATION OPPORTUNITIES**  
**Fall, 1999**

| <u>Date</u>    | <u>Topic</u>                          | <u>Location</u> | <u>Contact Hours</u> |
|----------------|---------------------------------------|-----------------|----------------------|
| October 29-30  | Diagnostic Ultrasonography            | Blacksburg      | 10                   |
| November 5-6   | Equine Necropsy                       | Blacksburg      | 10                   |
| November 19-20 | Orthopedic Surgery – Canine Hind limb | Blacksburg      | 14                   |
| December 10-11 | Reconstructive Wound Management       | Blacksburg      | 10                   |
| December 10-11 | Echocardiography                      | Blacksburg      | 10                   |
| February 11-12 | Practical Eye Surgery                 | Blacksburg      | 10                   |

Problem Solving Series

A VMRCVM Series on Small Animal Problem Solving will start on November 12 in Blacksburg with six monthly five-hour sessions scheduled through April 2000. This interactive CE experience provides 30 hours of credit under the direction of VMRCVM faculty.

**Please note:** The courses listed above are limited enrollment and feature a hands-on laboratory experience under the guidance of clinical faculty members. Program brochures provide course details. For registration or more information, please contact: **Dr. J. M. Bowen**, VMRCVM – Virginia Tech, Blacksburg, VA 24061, (540) 231-7388; or **Conference Registration**, Continuing Education Center, (540) 231-5182.

**POISONOUS PLANTS GUIDE NOW AVAILABLE ON CD-ROM**

Veterinarians at the University of California-Davis partnered with Iowa State University Press to create an instructional, interactive CD-ROM. This learning tool, which is available in Windows and Macintosh formats, provides information on the properties of poisonous plants relative to diagnosing toxic syndromes in animals. It includes botanical identification, geographical distribution, chemical characteristics and poisonous principle, clinical symptoms, diagnostic tests, and treatments. Contact: Mary Christopher (530-752-1324). – **Taken from: AVMA Animal Health News & Feature Tips, p. 2, Spring, 1999. As reported in Vet Med, Vol 5, Issue 3, May 1999, Iowa State University, Ames, IA.**

**OUR CROWDED PLANET**

There has been more world population growth since 1950 than in the preceding 4 million years of the world's history. World population first reached one billion in 1804, two billion in 1927, three billion in 1960, 4 billion in 1974 and 5 billion in 1987. The six billion people milestone should occur in October 1999.

World population is increasing by approximately 78 million each year. We can expect 8.9 billion people on Earth by 2050. Virtually all the gain will occur in the poorest nations. With 2 billion tons of grain you could feed:

- 10 billion Indians
- 5 billion Italians
- 2 1/2 billion Americans

-- **Kent Roberts July 1999**

**WOULD YOU BELIEVE?**

The typical mutual fund has an annual equities turnover of 90%. Much of fund under performance is due to overhead costs, estimated at \$60 billion annually for all funds.

On July 11, 1999 the NY Times reported that an anonymous south Florida business man paid \$451,541 for the NY Yankee's uniform of Lou Gehrig, who wore it on the occasion of his retirement when he declared himself "the luckiest man on the face of the earth". The sellers bought the uniform for \$302,000 in 1997 from a New Jersey collector of sports memorabilia. He had acquired it in 1971 from Lou Gehrig's widow for six bottles of J&B Scotch; estimated cost: less than \$60. This represents an annual return of 37.5%. Talk about appreciation! – **Kent Roberts August 1999**

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VT/026/0999/2M/201157

**VIRGINIA-MARYLAND REGIONAL  
COLLEGE OF VETERINARY MEDICINE  
VIRGINIA TECH  
BLACKSBURG, VIRGINIA 24061**

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