



# VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

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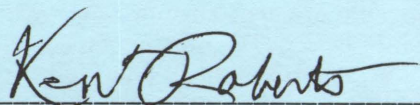
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THOUGHT FOR THE MONTH

Laughter is the shortest distance between two people.  
--Victor Borge

  
 Kent C. Roberts, DVM  
 Extension Veterinarian





### USE OF AN IVERMECTIN MONTHLY HEARTWORM PREVENTATIVE BEFORE ADULT TREATMENT

Consider using a monthly ivermectin such as Heartgard-30® or Heartgard-30 Plus® (Merck & Co., Inc.) before treating a dog to kill the adult heartworms in **patent** and **occult** heartworm infections. Ivermectin in preventative dosages (6 µg/kg) kills the L4 stage that takes 2 months to migrate within the walls of veins toward the right chamber of the heart. Further development of L4 larvae to the young adult stage (L5), that are not efficiently killed by adulticide treatment, is prevented. The full course of adult heartworm treatment, rest period, and microfilarial treatment in patent infections may take up to 6 weeks to complete. Migrating stages may reach the heart during this time period. When an ivermectin preventative is given before treatment, any migrating L4 larvae are killed and treatment failure is minimized.

In **occult** infections, either ivermectin or milbemycin (Interceptor®) preventatives may be used before adult heartworm treatment. To avoid the possibility of adverse reaction in dogs that are put on preventative therapy prior to adult treatment, the diagnosis of occult infection must be certain. This is because dogs with 3+ and 4+ microfilaremias may react to milbemycin at the preventative dosage. Even though milbemycin at the preventative dosage level kills the infective larvae (L3) that take 10 days to migrate subcutaneously as well as the L4 stage, it should never be used when a possibility of patent infection exists. Milbemycin is safe to use as a preventative prior to treatment only in **occult** heartworm infection. Dogs with any possibility of microfilaremia should never receive diethylcarbamazine (DEC, Filaribits®), as a shock reaction may occur. Ivermectin at preventative dosage of 6 µg/kg is safe to use in 1-4+ microfilaremic dogs.

A positive occult test 4 months after adulticide therapy suggests that not all the young adult (L5) and adult heartworms were killed. A negative occult test 4 months after adult treatment and a positive occult test 10 months after adult treatment means migrating larvae arrived and matured in the heart between the start of the adult treatment and the time at which a monthly preventative normally would have been initiated. Pretreatment with monthly ivermectin preventative in patent or occult infections or with milbemycin preventative in occult infection should markedly reduce the incidence of these 10-month occult positive tests. --From Kenneth W. Knauer, Department of Small Animal Medicine and Surgery, College of Veterinary Medicine, Texas A&M University, College Station, Texas 77843-4474, as reported in *Veterinary Quarterly Review*, Volume 10, Number 3, July-September 1994, Texas A&M University, College Station, TX.

### CANINE DISTEMPER EPIZOOTIC IN LIONS, TIGERS, AND LEOPARDS IN NORTH AMERICA

Canine distemper virus (CDV) infection occurred in captive leopards (*Panthera pardus*), tigers (*Panthera tigris*), lions (*Panthera leo*), and a jaguar (*Panthera onca*) in 1991 and 1992. An epizootic affected all four types of cats at the Wildlife Waystation, San Fernando, California, with 17 mortalities. CDV-infected raccoons were thought to be the source of infection in these cats. Two black leopards died at the Naibi Zoo, Coal Valley, Illinois, and two tigers died at the Shambala Preserve, Acton, California. Initial clinical signs were anorexia with gastrointestinal and/or respiratory disease followed by seizures. Canine distemper virus was isolated from three leopards, three tigers, and three lions that died or were euthanized when moribund. Monoclonal antibody testing identified the virus isolates as CDV. Gross and histopathologic findings were similar to those found in canids with distemper with a few exceptions. There were fewer lesions in the brain, and there was a pronounced type 2 cell proliferation in the lung, with inclusion bodies and CDV antigen demonstration by immunohistology. Neutralizing antibody to CDV was found in high titers in serum from most animals but was absent or was found only in low titers in some cats that succumbed after CDV infection. There was a marked difference in neutralizing antibody titers when tests were done with different strains of CDV. --Abstracted from Appel, M., et al., *J. Vet. Diagn. Invest.* 6 (1994), pp 277-288, as reported in *Veterinary Medical Extension*, August 1994, Iowa State University, Ames, IA.



## WHAT'S THE STORY ON PROZAC?

Perhaps you've heard all the excitement about the drug Prozac (Eli Lilly). Well, if so, here's some information about the drug to consider. Prozac is the trade name for the drug fluoxetine, an antidepressant drug that works as a specific serotonin uptake inhibitor. The drug was first marketed in the United States in January 1988, and has shown promise in the treatment of obsessive-compulsive disorders in humans.

Recently, there has been a "rash" of articles in newspapers and magazines about the use of Prozac in dogs to treat various pruritic skin diseases. Most of these articles quote one East Coast veterinarian who has been promoting the use of this drug to treat "behavior" disorders as well as allergic diseases. Two important questions are raised by this publicity.

First, is the drug effective? There has been one study evaluating the efficacy of fluoxetine in the treatment of atopy (6 dogs) and "behavioral" disorders (e.g., acral lick dermatitis; 5 dogs)<sup>1</sup>. In this study, there was reduction in pruritus in 3/6 dogs with atopy and 3/5 dogs with acral lick dermatitis. Side-effects occurred in 4 of these patients and included lethargy, severe polydipsia/polyuria, excitation, and urticaria. Overall, the drug was shown to help control pruritus in 6/11 patients. The answer to the question appears to be yes, **but** the drug is not a panacea for these conditions.

Perhaps a more important question is, is there a better way (less toxic drug, less expensive drug, more efficacious) to treat these conditions? The answer is yes. Prozac is a very expensive drug, compared to other treatment options for atopy. Treatment of a 20 kg dog for 60 days would cost (cost to veterinarian) \$1.50 for prednisone compared to \$106.20 for Prozac. In addition, the use of fluoxetine to treat atopy is gross overtreatment of this disease. If an atopic patient is doing so poorly that routine treatment (antihistamines, essential fatty acids, prednisone, hyposensitization) does not control the disease, then there is some concurrent disease present that needs to be identified and treated or the diagnosis is not accurate. These patients, however, do not need fluoxetine.

Acral lick dermatitis is a disease often considered a behavioral problem. Studies performed at Iowa State University suggest that many of the patients with these lesions are, in fact, atopic animals with secondary, focal infections. Behavioral disturbances may be a pathophysiologic factor in *some* cases. Fluoxetine may help reduce pruritus associated with these lesions as mentioned above (3/4 dogs). However, is the beneficial effect due to the ability of the drug to treat a behavioral abnormality or to control atopy? While that may be a moot point, it is appropriate to consider other treatment modalities that may be effective in this condition.

Second, is the drug safe? Anecdotal information (nonscientific surveys) suggests that the drug is reasonably safe. However, as mentioned above, side effects do occur, and they may be severe. If other treatment options are not effective and the patient is indeed suffering, then the use of fluoxetine may be warranted. In fact, the drug may be very appropriate for some conditions.

If you feel the urge to use this drug, consider the following: 1) fluoxetine is not FDA-approved for use in the dog. 2) The use of this drug to treat atopy is gross overtreatment for this allergic disease. 3) Adverse effects can and do occur with moderate frequency. Practitioners are urged not to get caught up in the exaggerated publicity that has been promoted by the media and a few veterinarians.

### References:

1. Shoulberg, N. The efficacy of fluoxetine (Prozac) in the treatment of acral lick dermatitis and allergic inhalant dermatitis in canines. Proceedings of the Annual Members' Meeting, AAVD & ACVD, San Francisco. 1990. pp 31-32.

--James O. Noxon, DVM, Diplomate ACVIM (Internal Medicine), Professor, ISU College of Veterinary Medicine, as reported in Veterinary Medical Extension, Newsletter #408-V757, October 1994, Iowa State University, Ames, IA.



## ANTE MORTEM DIAGNOSIS OF PANCREATITIS IN FOUR CATS

The ante mortem detection of pancreatitis in four cats is reported. Clinical findings included vomiting, lethargy, and constipation in all the cats; diabetes mellitus in two cats; and severe jaundice and a vitamin K responsive coagulopathy in one cat. Serum amylase was normal in all the cats and serum lipase was elevated in one azotemic cat. Ultrasonography revealed predominantly hypoechoic masses in the right cranial quadrant of the abdomen of each cat. The anatomical location of these masses was consistent with the pancreas. Gross examination supported these ultrasonographic observations. The pancreatic lesions were characterized histologically as acute necrotizing pancreatitis, acute necrotizing pancreatitis with abscessation, chronic active pancreatitis with cystic dilatation of the pancreatic duct causing bile duct obstruction and chronic active pancreatitis with nodular hyperplasia. This report indicates that pancreatitis is a clinically significant disease in cats that may be diagnosed ante mortem. --Abstracted from Simpson, K., et al., *J. Sm. Anim. Prac.* **35** (1994), pp. 93-99, as reported in *Veterinary Medical Extension*, August 1994, Iowa State University, Ames, IA.

## CRYPTOSPORIDIOSIS IN FOALS

Cryptosporidiosis, caused by Cryptosporidium parvum, a small intestinal parasite, is usually self-limiting but can cause severe diarrhea and death in immune-compromised horses and foals. The organisms reside in the microvillus border of the gut and release infective sporulated oocysts. Though the clinical disease was first described in immune-compromised individuals, normal foals up to 10-months-old have been infected. The infection is probably spread between foals through a fecal-oral route, but mares and other farm species have also been implicated. Oocysts are shed for an average of 10-22 days but can be intermittently shed for months.

Malabsorption and nonhemorrhagic diarrhea are caused by osmotic pressure changes and microflora overgrowth. There is often concurrent infection with other pathogens, such as rotavirus, coronavirus or various bacteria. Diagnosis at necropsy is based on finding oocytes in the intestinal mucosa. Oocytes can be identified in the feces with an acid-fast stain or a more sensitive immunofluorescent stain (Meridian Diagnostics, Cincinnati, OH). There is no specific treatment, but supportive therapy may be needed. Control is frustrating, as oocytes are very hardy, can survive for months, and are resistant to common disinfectants. Decreasing stress and other infections, as well as ensuring adequate colostrum ingestion, are beneficial. --Xiao L and Herd RP. *Coll Vet Med, Ohio State Univ, Columbus, OH*, review of equine *Cryptosporidium* infection. *Eq Vet J* 26:9-13, 1994. -- *Nebraska-Lincoln, Vol 23, No. 8, August 6, 1994*, as reported in *Clinical Veterinary Medical Newsletter, KSU, Manhattan, KS, November 1, 1994*.

## PRACTICE TIPS

When vaccinating puppies and kittens, use a 25 gauge needle. This tiny needle minimizes pain and the vaccine must be delivered slowly, which also reduces irritation. Here is another wrinkle. Dab a small amount of Nutrical\* on the upper limb. By the time it is licked off, the vaccination is completed. Use 25 gauge needles on all ages when vaccinating. The Nutrical\* also works wonders with adult cats.

When you have completed expressing anal sacs, pull the glove off inside out and tie a knot in the cuff. This eliminates the odor. Isopropyl alcohol will eliminate the anal sac discharge odor. It works great in cleansing the patient.

Autoclave heavy duty aluminum foil to place on distal extremity prior to orthopedic surgery. --*Veterinary Notes II, North Dakota State University Extension Service, Vol. 3, No. 8, August 1994*, as reported in *Animal Health Beat, Vol. No. 9 & 10, Sept. & Oct. 1994*, University of Nevada - Reno.



## ESTROGEN IN VARIOUS FOODS COMPARED -- WATCH THE WHEAT GERM

Next time someone tells you that implanted beef is full of estrogen, hit them with the following statistics from Dr. Harlan Ritchie, Michigan State University, as reported by NCA. First, make sure they know that hormones occur naturally in nearly all foods of either plant or animal origin. If a nanogram is one-billionth of a gram (the equivalent of a blade of grass on a football field), here's how some foods stack up:

<u>FOOD (3-OZ SERVING)</u>	<u>NANOGRAMS</u>
Non-implanted steer	1.3
Implanted steer	1.9
Milk	11
Potatoes	225
Peas	340
Ice Cream	520
Cabbage	2,000
Wheat Germ	3,400
Soybean Oil	1,680,000

The message here is the estrogen content of foods is of no physiological significance, says Dr. Ritchie. For instance, a non-pregnant human female naturally produces 480,000 nanograms of estrogen a day, while an adult male produces 160,000 nanograms. --**Animal Industry Foundation, Arlington, VA, Communications in Cont. Ed., Hoechst-Roussel Agri-Vet Co., March 1993, as reported in Clinical Veterinary Medical Newsletter, KSU, Manhattan, KS, November 1, 1994.**

## DYSTOCIA IN THE DOG

In a retrospective study of 182 cases of dystocia in bitches, no relationship was found between either the breed or age of the bitches and the occurrence of dystocia, but medium-sized breeds (12.7 to 20.5 kg) were slightly over-represented. Forty-two percent of the bitches had experienced dystocia in a previous whelping. In 75% of the cases the dystocia was of maternal origin, mainly due to uterine inertia; the other cases were due mainly to malpresentations or malorientations. Eighty-nine bitches suffered primary, complete uterine inertia; 40% of these had only one or two pups. The most common treatment was calcium and/or oxytocin injection followed by caesarean section; digital manipulation including forceps delivery and/or medical treatment was successful in 27.6% of the cases. Of the bitches studied, 65.7% had a caesarean section. Pup deaths occurred in 52.2% of the litters. In 95 of the litters some of the pups died; among the bitches treated with 4 1/2 hours of the beginning of the second stage labor 5.8% of the pups died, but among those treated between 5 and 24 hours after the second stage of labor began 13.7% of the pups died. Early diagnosis of dystocia and prompt treatment are important in reducing the mortality of pups. --**Abstracted from Walett-Davelid, A., et al., J. Small Anim. Prac. 35 (1994) pp 402-407, as reported in Veterinary Medical Extension, Newsletter #408-V757, October 1994, Iowa State University, Ames, IA.**

## DYSTOCIA IN THE CAT

In a retrospective study of 155 cases of feline dystocia, 67% were of maternal origin, mainly caused by uterine inertia, and the other cases were mainly of fetal origin (malpresentations or malorientations and deformities). Incidence was somewhat higher in Persian cats and considerably lower in Norwegian forest cats. Litter size was not related to the risk of developing dystocia. Ninety-seven cats were treated with calcium and/or oxytocin. Medical treatment was successful in only 29 cases. Caesarean sections were performed on 123 of the cats. In 55 cases a caesarean section was performed without prior attempts at medical treatment. --**Abstracted from Ekstrand, C., et al., J. Small Anim. Prac. 35 (1994) pp 459-464, as reported in Veterinary Medical Extension, Newsletter #408-V757, October 1994, Iowa State University, Ames, IA.**



## PREVENTION AND CONTROL OF CANINE AGGRESSION

It would be great to practice where we would have to deal with no aggressive dogs. Unfortunately, aggressive dogs are a part of the mixed blessings of our profession.

Prevention of one kind of aggression, dominance, begins with selection of a dog from parents with no history of dominant traits. Owners need to avoid tug-of-war and other play that encourages dominant behavior in dominant-prone dogs. Never treat a situation by confronting the dog. It's better by far to command the situation, not the dog. Dominance changes by time, place, and circumstance.

The following approaches can be used when facing dominance and other aggressive behavior in dogs in your clinic.

1. Owners should be encouraged to teach bite inhibition to pups.
2. More fearful dogs should visit the clinic repeatedly without being treated. For example, a veterinary technician or nurse could interact positively with the dog during such visits.
3. Pain-sensitive and fearful dogs should be desensitized to handling procedures and treatments (e.g., checking ears and mouth, pinching skin where needles will be used).

More information for treating dog aggression in veterinary practice can be found in: Ban, B., JAVMA 204, 1994, p. 7-12. --Veterinary Newsletter, Utah State University Cooperative Extension Service, August 1994, as reported in Illinois Veterinary Bulletin, Vol. 2, No. 2, November 1994.

## FRIENDS AND COLLEAGUES

This is my last issue as editor of Virginia Veterinary Notes. I took over the job from Gordon MacInnis in 1982 and have produced 73 issues over the past 12 plus years. It has been one of my more enjoyable efforts.

As a long time practitioner, I have the audacity to think I know what you want in a newsletter. I have searched for short articles containing useful information that you could read easily and make use of. My goal is to keep you informed and updated on a wide variety of interesting topics. Your welcome feedback causes me to believe I'm on target.

I am indebted to many people in the production of each issue. First and foremost, I have enjoyed encouragement and complete editorial freedom from Dean Peter Eyre. All decisions concerning Vet Notes have been mine. Our production manager, Maura Wood, has been extremely valuable in putting each issue together and getting it ready for printing. She and her coworkers in Information Processing do a great job. They have taken over maintenance of the mailing list as well. The crews at the University Print Shop and the Central Mail Room have been very cooperative and efficient in printing and mailing the newsletter.

My friend and colleague, JM "Jim" Bowen, our equine Extension specialist, will be taking over many of my duties, particularly those relating to Continuing Education. Jim is experienced and capable, and will continue to improve our outreach efforts.

Since graduating from Cornell in 1951, my veterinary career has been built around helping people and their animals. I am very proud of our profession, and the commitment and dedication veterinarians bring to their work.

Leaving practice for academic life was a difficult decision, and while I truly miss practice, I believe it was a wise one. As I retire, I can only hope that my efforts, through practice, the Virginia Veterinary Medical Association, the Virginia Board of Veterinary Medicine, local veterinary associations and the College of Veterinary Medicine have helped to advance our profession in serving the public. I'll miss you all. Please keep in touch.



## CONTINUING EDUCATION OPPORTUNITIES

### Spring 1995

+March 23	Small Animal Medicine Update	Charlottesville	4
+*March 24-25	Diagnostic Cytology	Blacksburg	10
*March 31-April 1	Ultrasonography	Blacksburg	10
+April 2	Small Animal Medicine Update	Charleston, WV	4
*April 21-22	Gastrointestinal Endoscopy (basic)	Blacksburg	10
*April 28-29	Clinical Fish Medicine	Blacksburg	10
*May 5-6	Thoracic Radiology	Blacksburg	10

\*Limited enrollment short course featuring hands-on instruction.

+Open to veterinary technicians.

Note: Program brochures are mailed out six-eight weeks prior to the course date. No registrations accepted until brochures go out.

For further information, please contact:

Dr. J.M. Bowen  
 VMRCVM - Virginia Tech  
 Blacksburg, VA 24061  
 (703) 231-7388

## ANNUAL CONFERENCE FOR BOVINE PRACTITIONERS

A conference for bovine practitioners, sponsored by the VMRCVM, Maryland campus, will be held at the Holiday Inn, Francis Scott Key Mall, Frederick, MD, on March 30-31, 1995. The conference begins at 1:00 PM on Thursday, March 30. Registration is \$120 for both days and \$70 for one day, including meals.

For registration or more information, contact Dr. Douglas Carmel, VMRCVM, College Park, MD 20742; telephone (301) 935-6083 ext 118; FAX (301) 935-6079.

## WOOD CUTTING BOARDS SAFER FOR FOOD

For decades, cooks in homes and restaurants have been urged to use plastic rather than wood cutting boards in the name of food safety. The fear is that disease-causing bacteria will soak into a cutting board and later contaminate other foods cut on the same surface and served uncooked.

It has become an article of faith among "experts" that plastic cutting boards are safer than wood for food preparation because, as the thinking goes, plastic is less hospitable to bacteria. It seems reasonable, but it just isn't so, according to two scientists at the University of Wisconsin-Madison. Food microbiologists Dean O. Cliver and Nese O. Ak have found that in some as yet unknown way, wooden cutting boards kill bacteria that survive on plastic boards. --George Gallepp, Agricultural and Consumer Press Service, University of Wisconsin-Madison, as reported in Florida Veterinary Scene Newsletter, Vol. 3, No. 5, Sept. 1994, University of Florida, Gainesville, FL.



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