Virginia Cooperative Extension Service

VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

ay - June 1994 No. 69

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Kent C. Roberts, DVM
Extension Veterinarian

THOUGHT FOR THE MONTH

You are rememberd and respected for the
good you do for others.

EQUINE PARASITOLOGY

I. Treatment of large round worm (*Parascaris equorum*) larvae migrating in the lungs of foals can be successfully done with ivermectin or fenbendazole (10 mg/kg for 5 consecutive days). These anthelmintic treatments provide a valuable adjunct to antibiotic therapy and improve the outcome of treating round worm pneumonia. Larvae migrating in the liver can be treated with ivermectin. Penetration of the intestine and subsequent migration of round worm larvae can be drastically reduced by daily administration of pyrantel tartrate (Strongid C) to foals as soon as foals will consistently consume it.

II. A second generation avermectin compound, moxidectin, appears to have a similar spectrum of activity against horse parasites as does ivermectin. However, moxidectin unlike ivermectin appears to have activity against small strongyles that are in the large intestinal lining. Such activity may have additional benefit when used at the end of the grazing season and may decrease the incidence of clinical disease (diarrhea) due to this parasite.

III. Treatment of mares with ivermectin within 12 hours after foaling significantly reduces the transmission of parasites to their foals.

IV. Timing the rotation of horses to new pastures 3 days after treatment with ivermectin maximizes strongyle control.

V. Ecotoxicity of pastures (increased areas fouled with feces and slowed fecal decomposition) does not appear to occur after treating horses with ivermectin as it does with other species.

VI. Over time, daily administered pyrantel tartrate (Strongid C) on some farms appears to select for small strongyles that the anthelmintic is less than 100% effective against. Such conditions merit purge anthelmintic treatments semiannually in addition to prophylactically administered pyrantel tartrate.

--Source: Drs. J.A. DiPietro, A.J. Paul, K.S. Todd, Jr., and R.A. Valdez, University of Illinois at Urbana-Champaign, College of Veterinary Medicine, Department of Veterinary Pathobiology, Parasitology Division, as reported in the Illinois Veterinary Bulletin, Vol. 1, No. 2, December 1993, Urbana, IL.

DOMESTIC FERRET PREVENTATIVE HEALTH

Ferrets are becoming increasingly popular pets in the United States. It is estimated that there are now at least five million ferrets in the United States, and the number is growing. The ferrets kept as pets are domesticated relatives of wild ferrets and have become gentler and more compatible with humans through years of captive breeding.

Examination: Handle ferrets without protective gloves. Most are gentle enough to do this. Lay the ferret's abdomen on your forearm, put the index and middle finger of the same hand on either side of the neck and the rest of the fingers behind the forelegs. This leaves your other hand free to palpate and manipulate. If the ferret is too squirmy to hold this way, try picking it up by the scruff of the neck in the same manner a mother cat picks up her kittens. Support the hind legs with your other hand. You may need an assistant to restrain the ferret while you are performing the examination.

Many ferrets will have ear mites and show no clinical signs, so get an ear swab sample and look for mites and eggs. If the infestation is heavy, a bright light may be used to see the mites in the ear. Holding the ferret by the scruff is the best restraint method for ear swabs and examinations. The author recommends using injectable Ivermectin topically to treat the ear mites. She uses 0.50 mg/kg, divided into two doses, each of which is massaged into an ear. Repeat the treatment in two weeks. Bathe the ferret 24 hours after each treatment and wash the cage and bedding.

Vaccinations: Canine distemper is nearly 100% fatal in ferrets. Vaccinate against canine distemper using vaccine that is NOT of ferret origin. The author recommends Fromm D. (Solvay) because it contains only the MLV canine distemper virus, and it is safe and effective. If the dam was vaccinated, start vaccinating the kits at eight weeks of age. Repeat the vaccination at two week intervals until they are 12 to 13 weeks of age. Booster annually. Restraint by the scruff works well when administering the injections. Hold a treat or some Nutrical (Evsco) in front of the ferret's nose for distraction. Rabies vaccine is given at three months of age. Pitman Moore's Imrab has been approved for use in ferrets. It is a killed product and can be given subcutaneously. Booster annually. Ferrets do not have to be immunized against feline distemper or parvovirus.

Heartworms: Ferrets are natural hosts for heartworms. Put them on heartworm preventative if you live in a heartworm prone area. Ivermectin is administered monthly at the same dose as in the dog. The injectable form is given orally after proper dilution. Some practitioners use one 68 mcg Ivermectin tablet per ferret per month with no adverse side effects.

Neutering: Female ferrets are neutered between five and six months of age to help odor control. Ferret odor is under androgen hormone control and comes from primarily the skin glands. Neutering will remove most of the skin odor. Anal glands do not have to be removed.

Hairballs: Ferrets should receive a feline hairball laxative every other day. They are prone to hairballs, but they don't vomit them up like cats. Ferrets also love to eat small objects like rubber toys, rubber bands, and chair protectors. The laxative will help them pass through the ferret.

Geriatrics: Disease incidence goes up rapidly after a ferret passes three years of age. Neoplasia is the most common problem. Examine geriatric ferrets (> three years old) every six months to look for early signs of neoplasia. A full body radiography (VD and lateral), CBC and chemistry profile are done at this time. All tests are done on an outpatient basis. Mask the ferret down with isoflurane and take the radiographs and blood samples. At the same time scale the teeth and remove any small tumors on the skin. Mast cell tumors are common in older ferrets. **--Dr. S. A. Brown, The Journal of Small Exotic Animal Medicine 1 (1) 1991 as stated in NOTES From the Extension Veterinarians, Cooperative Extension Service, Kansas State University, Manhattan, KS, August, 1992.**

NEW STUDY INVALIDATES THE NAME "DEER TICK"

Lyme disease was first recognized as a human health problem in 1975. Research revealed that the causative agent, a spirochete bacterium called *Borrelia burgdorferi*, was transmitted by ticks. In 1979, *Ixodes dammini* was described as a new tick species and later shown to be the vector of Lyme disease in the northeastern and midwestern United States. Before 1979, *I. dammini* had not been recognized as distinct from *I. scapularis*, the "black-legged tick," which was widely distributed in the eastern United States. The newly described *I. dammini* was reported to occur in the Northeast and Midwest, whereas *I. scapularis* was considered restricted to the southeastern United States. Recent studies by scientists at Georgia Southern University have shown conclusively that *I. scapularis* and *I. dammini* are the same species and, consequently, the name *I. dammini* is no longer valid.

In addition to its scientific name, *I. dammini* also had been given a new common name, the "deer tick." The name "deer tick" arose because white-tailed deer were major hosts for the adult ticks and because the distribution of *I. dammini* was linked to deer density and distribution. Unfortunately, the common name, "deer tick" also led to the erroneous belief that white-tailed deer were reservoirs of the Lyme disease organism. This misconception caused considerable public relations problems for wildlife agencies.

Research has shown that deer are only indirectly important in Lyme disease by serving as hosts for adult ticks (SCWDS *Briefs*, Vol 7, No. 4). Many wild mammals, birds, and even reptiles also are involved in the tick's life cycle, and wild mammals other than deer, especially rodents, are vertebrate reservoirs of *B. burgdorferi*.

The elimination of the scientific name *I. dammini* provides an opportunity to dispense with the common name "deer tick" which has been such a headache for wildlifers. A return to the common name "black-legged tick" should help reduce the confusion regarding deer and Lyme disease. **--Source: SCWDS Briefs, April 1993:4-5. Reprinted from the Wisconsin Department of Agriculture, Trade & Consumer Protection Animal Health Newsletter, May/June 1993, as reported in the Illinois Veterinary Bulletin, Vol. 1, No. 2, Dec 1993, Urbana, IL.**

SCALE FOR PROGNOSIS OF HEAD TRAUMA
The Small Animal Coma Scale for Evaluating Head Trauma Victims

Category/Description	Score
Motor activity	
Normal gait; normal spinal reflexes	6
Hemiparesis; tetraparesis, or decerebrate activity	5
Recumbent; intermittent extensor rigidity	4
Recumbent; constant extensor rigidity	3
Recumbent; constant extensor rigidity with opisthotonos	2
Recumbent; hypotonia of muscles; depressed or absent spinal reflexes	1
Brain stem reflexes	
Normal pupillary light responses and oculocephalic reflexes	6
Slow pupillary light reflexes; normal to reduced oculocephalic reflexes	5
Bilateral unresponsive miosis; normal to reduced oculocephalic reflexes	4
Level of consciousness	
Occasional periods of alertness and response to environment	6
Depression or delirium; capable of responding to environment	5
Semicomatose; responsive to visual stimuli	4
Semicomatose; responsive to auditory stimuli	3
Semicomatose; responsive to noxious stimuli	2
Comatose; unresponsive to repeated noxious stimuli	1

Total Score	Likely Prognosis
3-8	Grave
9-14	Poor to guarded
15-18	Good

Editor's Note: This scale was developed by Andy Shores, DVM, PhD, College of Veterinary Medicine, Michigan State University, East Lansing, MI.
--Veterinary Medical Extension, Newsletter #394-V742, Iowa State University, June 1993.

POT-BELLIED AND OTHER MINIATURE PIGS

There has been a minor trend (or fad) for some of the general public to become interested in pot-bellied or other strains of miniature pigs as pets. Agricultural Extension Agents and others may be receiving questions on care of these pigs and, in some cases, questions related to controversies related to these pigs. For example, many local ordinances restrict the keeping of livestock within the city or corporate limits. The question then arises: are pot-bellied or miniature breeds of pigs the same as pigs used for commercial pork production?

Local governing bodies will have to decide if citizens can or cannot keep certain pigs as pets within the corporate limits. However, we can provide information on whether a pot-bellied or mini-pig is in fact a pig. Pot-bellied and miniature breeds of pigs are not a separate species from the more typical swine used for commercial pork production. In this sense they are no different from other pigs. These pigs are smaller and look the way they do because of the genetic make-up of that particular breed or line. The same point could be made as to why Duroc pigs are red, Landrace pigs have long, floppy ears, Yorkshire pigs have erect ears, etc.

One point that people may not be aware of is that owners of pot-bellied and miniature boars, gilts and sows used to produce breeding stock are subject to the same State Veterinary regulations as producers of commercial swine seedstock. This means that the producing herd must be a qualified pseudorabies and brucellosis free herd as determined by quarterly blood testing of all or a certain percentage of breeding animals in the herd. Any pigs sold (or given, I assume) strictly as pets are subject to the same State Veterinary regulations as are feeder pigs. This means that the pigs must originate from a valid pseudorabies free "monitored" or "qualified" herd or the animal itself must test negative for pseudorabies. Again, blood testing is involved. Furthermore, tuberculosis has been identified in two pot-bellied pigs at a petting zoo in Virginia. Neither tuberculosis or brucellosis are major disease problems in the general swine population, but pig owners should be aware that these diseases can be transmitted from pigs to people. Owners should contact their veterinarian for assistance on these testing procedures and other health care advice.

As for feeding pot-bellied and miniature pigs, a good quality commercial pig diet or the equivalent would be appropriate. Starter (20-18% crude protein) and grower (16-14% crude protein) diets could be fed to appetite during growth and development. Limited feeding of a 14% crude protein sow or pig diet at maturity is necessary to prevent excessive fat or weight gain. One-half to three-fourths of a pound per 50 pounds of body weight, depending on body condition, should be fed. A good resource book on care of pot-bellied and mini-pigs is Pot Bellies and Other Miniature Pigs: A Complete Pet Owners Manual by Pat Storer. This book is available from Barron's Publishers, Barron's Educational Series, Inc., 250 Wireless Blvd., Hauppauge, New York 11788. **--Allen F. Harper, Extension Animal Scientist, Virginia Tech, Blacksburg, VA.**

MALIGNANT HYPERTHERMIA POSSIBLE WITH INSOFLURANE ANESTHESIA IN POT-BELLIED PIGS

One recent clinical report detailed the suspected development and progression of malignant hyperthemia (MH, also called Procine Stress Syndrome) in a 7-week-old female pot-bellied pig (PBP) during and after recovery from isoflurane anesthesia for ovariohysterectomy.

Shivering without decrease in rectal temperature during the 30-minute surgery was the first sign of MH. Ten minutes later, when the pig was ambulatory, the shivering persisted, but the rectal temperature was 37.3°C (99.1°F). Only five minutes later, the rectal temperature was 40.1° (104.2°F) and continued to rise to 41.5° (106.7°F) over the next 30 minutes while treatment was instituted. Therapy consisted of packing the pig in ice and administering dantrolene sodium (Dantrium® PO 5 mg/kg 9 8h for 32 hours). Intravenous dantrolene sodium would have been used if available, but dislodging of the cephalic vein

catheter prevented further I.V. therapy. Rectal temperature decreased over the next 18 hours but fluctauated at the low point between 38°C (100.4°F) and 39.7°C (103.5°F). The pig then had a normal rectal temperature for the next 8 hours, was discharged, and appeared clinical normal 2 weeks later.

The authors state that, to their knowledge, this was the first documented case of suspected MH in swine from isoflurane anesehtesia and the first report of suspected MH being triggered by any anesehtetic agent in PBPs. They emphasized the need to cloesly monitor all pigs undergoing anesethesia for signs of MH. Taking the rectal temperature of pigs for at least 1 hour after anesthetic recovery was suggested as an additional minimum standard operating procedure for post-operative care in this species. **--As reported in Veterinary Quarterly Review, Vol. 9, No. 4, Oct.-Dec. 1993, Texas A&M University.**

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE
BLACKSBURG CAMPUS
ADJUNCT FACULTY

Biomedical Sciences		
Neal Castagnoli, Jr., PhD	Drug Metabolism	Virginia Tech
John M. Gregg, DDS, MS, PhD	Maxillofacial Problems	Dental Practice, Blacksburg, VA
Wallace Hayes, PhD	Pharmacology/Toxicology	School of Medicine, Wake Forest, NC
James G. Mead, PhD	Marine Mammals	Smithsonian Institution
Richard B. Teske, DVM, MD, Diplomate ABVT	Toxicology	FDA-CVM Rockville, MD
Jay Williams, PhD	Physiology	Virginia Tech
Pathobiology		
Robert Duncan, Jr., DVM, PhD Diplomate ACVP	Pathology	Wytheville Regional Lab
Larissa Ford, PhD	Fish Diseases	National Fish Lab, Kearneyville, WV
Suzanne Jenkins, VMD, MPH, Diplomate ACVPM	Zoonoses, Public Health	VA Dept. of Health, Richmond, VA
Linda Logan-Henfrey, DVM, PhD	Foreign Disease	ILRAD, Nairobi, Kenya
William Sims, DVM, MS, Diplomate ABVPH, ACVPM	Veterinary Public Health	VDASC, Richmond, VA
Lynette Tobias, DVM, PhD	Pathology, Epidemiology	APHIS, USDA
Small Animal Clinical Sciences		
William Hay, DVM	Small Animal Medicine/Nutrition	Hills Pet Products, Blacksburg, VA
Michael Hunt, DDS	Endodontics	Dental Practice, Roanoke, VA
Lawrence Kyle, DDS	Dentistry	Dental Practice, Blacksburg, VA
Stuart Porter, VMD	Wildlife Medicine/Rehabilitation	Blue Ridge CC, Weyers Cave, VA
Amy Rockhill, DDS	Orthodontics	Dental Practice, Blacksburg, VA
Charles Williams, DVM, Diplomate ADVC	Veterinary Dentistry	Practitioner, Fairfax, VA
Large Animal Clinical Studies		
M. Jill Bowen, BVSc, MRCVS	Embryo Transfer	Blacksburg, VA
Pierre Lessard, DVM, PhD	Epidemiology	ILRAD, Nairobi, Kenya
Richard Boyd, DVM	Poultry Medicine	ROCCO Inc., Harrisonburg, VA
Marck Dekich, DVM	Poultry Disease	Perdue Farms Inc, Salisbury, MD
Gabriel Meza, DVM, MS	Avian Pathology	VDACS Lab, Harrisonburg, VA
Walker Thompson, DVM	Poultry Medicine	Wampler-Longacre, Inc., Harrisonburg, VA
Kenneth Opengart, DVM, PhD, Diplomate ACPV	Poultry Medicine	Wampler-Longacre, Inc., Harrisonburg, VA

CONTINUING EDUCATION OPPORTUNITIES
FALL 1994

Date	Subject	Location	Contact Hours
+September 22	Small Animal Medicine Update	Charlottesville	4
*September 23-24	Orthopedic Surgery of the Canine Hindlimb	Blacksburg	10
*September 30 - October 1	Gastrointestinal Endoscopy	Blacksburg	10
*October 14-15	Practical Eye Surgery	Blacksburg	10
*October 28-29	Neurology For Practitioners	Blacksburg	10
*November 4-5	Clinical Canine Reproduction	Blacksburg	9
*December 2-3	Acute Abdomen (Small Animal)	Blacksburg	10
*December 9-10	Small Animal Dentistry	Blacksburg	10

*Limited enrollment course
+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:

Kent Roberts, DVM
VMRCVM - Virginia Tech
Blacksburg, VA 24061-0442
703-231-7181

CHRONIC IDIOPATHIC LARGE BOWEL DIARRHEA STUDY

Clinicians at the College of Veterinary Medicine at Virginia Tech are studying the effects of dietary fiber in dogs with idiopathic large bowel diarrhea. Approximately ten more cases are needed to complete the study which is a randomized, controlled, double-blind effort to provide accurate data on the effects of fiber supplementation.

Please consider referring dogs with chronic large bowel diarrhea for diagnosis and inclusion in the study. The dog must have signs of diarrhea for at least 4 weeks. A week is defined as at least two days with diarrhea and the weeks don't have to be continuous. Signs of large bowel diarrhea include: mucus, frank blood, tenesmus, moderate to severe increased frequency and decreased volume. Dogs with weight loss cannot enter the study, and dogs must be dewormed prior to referral.

Dogs referred for the study will receive a full diagnostic workup, including colonoscopy and biopsy. If another disease is discovered (inflammatory bowel disease, neoplasia, histoplasmosis, etc.), the client is responsible for 50% of the total charges, usually about $200. If the dog is accepted for the study, it will enter the diet trial and the entire bill for diagnosis will be paid by the study. Dogs in the study will eat one of three diets for a six-week period.

Please call Dr. Michael Leib at (703) 231-4621 and refer any cases you think qualify.

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