



VIRGINIA-MARYLAND  
REGIONAL COLLEGE  
OF  
VETERINARY MEDICINE

# VIRGINIA VETERINARY NOTES

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Kent C. Roberts, DVM  
Extension Veterinarian

## NEW EQUINE EXTENSION SPECIALIST

The Virginia-Maryland Regional College of Veterinary Medicine is pleased to welcome J. M. "Jim" Bowen as the new equine specialist in veterinary extension. Dr. Bowen started on February 27 as the liaison between equine practitioners and the College. He has a wealth of experience in equine medicine with a special interest in reproduction. He is a diplomate of the American College of Theriogenologists.

Jim joins the Blacksburg faculty from a position at Texas A&M where he had responsibility for the veterinary college's horse herd. He specifically handled breeding management, artificial insemination, infertility and obstetrics as well as cases in the College's large animal clinic. Previous veterinary experience has taken him to Wales, England, Scotland, Canada, Ireland and Brazil.

A native of England, Jim is a graduate of the Royal Veterinary College (London) and is married to a veterinarian. He has spoken at a great many continuing education programs and has taught courses in equine reproduction to veterinary students. Dr. Bowen is available as a consultant to veterinarians and will be responsible for equine continuing education programs and publications.

## VACCINES

Some modified live virus vaccines used successfully in dogs have induced rabies in cats, apparently because of the cat's greater susceptibility to the rabies virus. Until recently all the reported cases of vaccine induced rabies in cats had been attributed to the use of modified live virus vaccines not approved for that species; however, a recent report documented four cases of feline rabies caused by the ERA strain vaccine which was subsequently withdrawn from approval for use in cats.

Only one modified live virus rabies vaccine is currently recommended for cats, whereas there are several inactivated vaccines, including four that are combined with other agents such as feline panleukopenia vaccine. Any of these vaccines should be administered intramuscularly at one site in the thigh. It is recommended that the cat be three months of age before primary vaccination, with a first booster at least one year later followed by boosters either annually or triennially, depending on the vaccine.--Abstracted by Alex Hogg from an article in *Carnation Research Digest* (20: No. 2, Summer 1984) by Joe R. Held, DVM, USPHS, as reported in *Herd Health Memo*, University of Kentucky, February 1985, and *Veterinary Medicine Newsletter*, University of Florida, September 1985.

## GIARDIASIS

Giardiasis is a protozoal disease most often affecting budgerigars and occasionally seen in cockatiels. The disease causes high mortality in nestlings with a low mortality, if any, in adults. Clinically, nestlings are poorly feathered, weak, and have evidence of chronic diarrhea. The feces are foul smelling, mucoid and discolored. Nest boxes may contain large amounts of loose feces and nestlings may have fecal balls adhering to their feet.

Diagnosis of the disease is accomplished by microscopic examination of fresh feces or intestinal scrapings from a recently killed bird. The teardrop shaped flagellated protozoan is easily observed with an iodine stain of the smear.

Giardiasis can be prevented by proper cleaning and disinfection of nest boxes and other sanitary procedures to avoid spreading contaminated feces to unaffected birds. A concentration of 0.02% - 0.04% dimetradazole (Emtryl® or Flagyl®) for 5 days in the water is an effective treatment. Iprnidazole HCL (Ipropan®) has also been used. These drugs can be toxic if misused or if used in finches.—Fred Dunstan Clark, DVM, MS, Veterinary Microbiology Department, Texas A&M University, as reported in Veterinary Quarterly Review, Texas Agricultural Extension Service, Spring 1985, and Veterinary Newsletter, University of South Florida, September 1985.

### HISTIOCYTIC ULCERATIVE COLITIS (BOXER COLITIS)

Boxer colitis is a chronic inflammatory disease of unknown etiology. It occurs most frequently in young (< 2 years) Boxer dogs. Clinical signs are those typically associated with large bowel diarrhea: passage of frequent small stools, tenesmus, hemorrhagic and/or mucoid stools. Weight loss is uncommon but may occur in chronic, severe cases. Vomiting also occurs in about one-third of affected dogs and may be due to a reversed gastrocolic reflex.

Diagnosis is based on signalment, clinical signs and proctoscopic or colonoscopic exam and biopsy. Rectal examination often demonstrates rough, corrugated rectal mucosa. Direct visualization of the colon may reveal reddened or edematous colonic mucosa. The mucosa is often friable and ulcerated. In chronic cases, reduced distensibility of the colon and colonic strictures may be present. Histopathologic exam of colonic biopsies typically demonstrates focal, acute inflammation and histiocytic infiltration of the submucosa.

A barium enema can aid in diagnosis if colonoscopic exam findings are negative. Typical radiographic abnormalities include thickened mucosal folds, mucosal serrations and colonic strictures.

Treatment of boxer colitis is symptomatic as the etiology of the condition is unknown. The prognosis for total resolution of the disease is poor as dogs often suffer relapses. Colonic rest, accomplished by withholding food for 24-48 hours, often reduces the severity of signs in acute episodes. A bland, low residue diet, such as I/D, should be re-instituted slowly. Some authors report successful management of the disease by feeding hypoallergenic diets.

At times, hydrophilic agents, such as Metamucil®, or softening agents, such as Colace®, may aid in control. Therapy with antibiotic/anti-inflammatory combinations such as Azulfidine® (60 mg/Kg po q 8h) often results in rapid resolution of clinical signs. Chronic use of Azulfidine® has been associated with Keratitis sicca, vomiting, hemolytic anemia and hepatitis, however. The use of Flagyl® (60 mg/kg po q 24h) often results in alleviation of clinical signs. Flagyl® appears to have anti-inflammatory as well as antimicrobial properties. Oral tylosin (10 mg/Kg po q 8h), too, has been reported to give favorable results.

In dogs which do not respond to dietary or antibiotic therapy, anti-inflammatory or immunosuppressive therapy with corticosteroids, Imuran® or Cytoxan® may be useful. These agents should be used judiciously, however, due to their potential side-effects.—Deborah Davenport, DVM, MS, VA-MD Regional College of Veterinary Medicine.

## PHARMACOLOGICAL THERAPY IN URINARY INCONTINENCE

Urinary incontinence may occur as a primary abnormality of the lower urinary tract or secondary to other problems such as spinal cord injury or urinary tract infections. In those cases where correction of the primary abnormality does not restore normal continence or when diagnostic evaluation does not detect a specific etiology, pharmacological therapy can be a useful adjunct in long-term patient management.

"Urinary incontinence" usually brings immediately to mind the patient with urine dribbling from urethral incompetence; however, the term actually refers to any abnormality in the proper storage and voiding of urine. While urethral incompetence is certainly one of the most common manifestations of incontinence, there are many others worthy of note. A complete discussion of the pathophysiology, possible etiology, and diagnostic evaluation of all the types of incontinence is beyond the scope and purpose of this article; instead, different symptomatic types of urinary incontinence will be described along with recommended pharmacological agents.

Urethral incompetence with resultant periodic or constant dribbling of urine is a relatively common complaint and is frequently blamed on sex hormone deficiency in neutered animals. Treatment with testosterone cypionate<sup>a</sup> (200 mg IM monthly or less often as needed) for males and diethylstilbesterol (0.1-1.0 mg PO daily for induction, 1.0 mg PO weekly for maintenance) in females is frequently effective. Another approach is the use of alpha adrenergic stimulating drugs (sympathomimetics) which increase smooth muscle tone in the proximal urethra. Phenylpropanolamine is recommended at 12.5-50 mg PO TID and is readily available in over-the-counter appetite depressants<sup>b</sup> or in 50 mg prescription time-release capsules.<sup>c</sup> Recommended dose for the prescription form is 1-2 capsules PO daily; however, it also contains an antihistamine which may cause drowsiness, mucus membrane dryness, and irritability.

Detrusor hyporeflexia or areflexia (inability to properly contract and empty the bladder) is also a common form of incontinence which may result from spinal cord injury, chronic overdistension of the bladder, or bladder wall fibrosis. Bethanechol, a parasympathomimetic drug, may be effective orally at doses up to 50 mg TID; lower doses should be attempted initially and the lowest effective level used. Bethanechol will not induce a detrusor reflex; proper detrusor activity is dependent on intact neural pathways and neuromuscular connections. Bethanechol does increase bladder smooth muscle tone and may thereby augment a weak detrusor reflex in the recovery phase following spinal cord injury or chronic overdistension of the bladder. In those patients with normal or increased urethral sphincter activity, bethanechol may cause a slight increase in smooth muscle tone and therefore increased urine outflow resistance in the proximal urethra, so for those patients in which manual expression is used for bladder evacuation, a urethral relaxing agent should be used simultaneously (see following paragraphs).

Dyssynergia refers to loss of coordination between bladder contraction and urethral relaxation, producing a functional urethral obstruction. "Reflex" dyssynergia is a relatively rare condition characterized by normal onset of bladder contraction and urethral relaxation rapidly followed by urethral contraction and disruption of urine flow. An alpha adrenergic blocking (sympatholytic) agent, phenoxybenzamine, has been used effectively at 2.5-30 mg PO daily in divided doses. Somatic muscle relaxation may be achieved with diazepam (2-10 mg PO TID) or dantrolene (3-15 mg/kg daily in divided doses) to further reduce

urethral resistance. The patient with detrusor hyporeflexia and increased urethral sphincter tone following spinal cord injury can also be considered to have a form of dyssynergia; if manual expression is used for bladder evacuation, alpha blockers and somatic muscle relaxants are recommended, especially for those patients also receiving bethanechol.

Detrusor hyperreflexia or spasticity (decreased bladder capacity, decreased detrusor reflex threshold, increased force of bladder contraction) is an unusual form of incontinence which has occasionally been seen with cerebellar or prostatic disease. If the primary abnormality cannot be resolved, detrusor spasticity may be managed by smooth muscle relaxants. An anticholinergic (parasympathomimetic), propantheline, is readily available and effective at 15-30 mg PO TID, but the therapeutic dose approximates the toxic dose. The direct acting smooth muscle relaxants oxybutynin (5 mg BID-TID), dicyclomine (10 mg TID to QID), and flavoxate (100 to 200 mg TID to QID) are effective with fewer side effects.

A note of caution should be added concerning the use of these or any similar medications for the treatment of urinary incontinence. These are extremely potent, systemically active drugs and the potential for severe side effects is very real. A thorough review of the symptoms and therapy of overdose and adverse reaction from these drugs and contraindications for their use is advised before they are implemented. They should be reserved for those cases in which a specific problem has been identified which requires the specific effect produced by a drug or drugs and should not be applied haphazardly as a substitute for proper diagnostic evaluation and therapy of lower urinary tract dysfunction.

<sup>a</sup>Depo® Testosterone Cypionate, The UpJohn Co., Kalamazoo, MI 49001

<sup>b</sup>Dexatrim,<sup>TM</sup> Thompson Medical Co., Inc., New York, NY 10022

<sup>c</sup>Ornade® Spansules,<sup>®</sup> Smith Kline and French Laboratories, Philadelphia, PA 19101

—James R. Cook, Jr., DVM, Dept. of Small Animal Clinics, School of Veterinary Medicine, Purdue University, West Lafayette, Indiana, Purdue University Veterinary Notes, April 1985, as reported in Notes from the Extension Veterinarians, Kansas State University Cooperative Extension Service, June 1985.

#### VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE TO HOLD ANNUAL OPEN HOUSE

Students in the Virginia-Maryland Regional College of Veterinary Medicine at Virginia Tech in Blacksburg will conduct tours of the Veterinary Medical Teaching Hospital and the instructional headquarters of Phase II during an open house on Saturday, April 26 from 9 to 5 p.m.

The tours will include an explanation of the academic curriculum and a variety of instructional and medical equipment will be displayed. The open house will also include a number of displays featuring different aspects of the veterinary profession.

Since public tours of the veterinary hospital have been temporarily suspended because of the construction of the College's Phase III building, persons interested in seeing the school are urged to take advantage of this special opportunity.

Admission is free and refreshments will be provided.

## PREVENTION OF IMPACTION COLIC

Colic from impaction of the large intestine is a common and often fatal ailment in horses. Its occurrence is encouraged by winter conditions. While several causes may act independently to produce impaction, in most cases there is more than one reason for the disorder. Winter and age reduce physical activity, contributing to the prospects of impaction. Older horses are again more vulnerable because they are less effective at chewing. Broken teeth, irregular wear or points may make chewing painful. Periodic examination and proper care of defective teeth contribute to improving the horses body condition and extending its life. This is particularly important with the aging horse a family would like to keep as long as possible.

Digestion of fibrous feed requires greater quantities of water. The dryness of hay and winter grass also contributes to the need for water. Complicating matters further, the discomfort of drinking cold water in the winter cause intake to be reduced below levels most desirable for the digesting process. For proper digestion, the horse requires two to four pints of water per pound of feed. A 1,000 pound horse eating a dry ration of 20 pounds of hay and grain per day should drink approximately 7.5 gallons of water.--(R.M. Teegarden, Utah State University Veterinary Newsletter, Aug. 1985) as reported in Animal Health Beat, University of Nevada-Reno, March 1986.

## INFECTIOUS BOVINE KERATOCONJUNCTIVITIS: CONTROL TRANSMISSION

Summary: The transmission of Moraxella bovis was studied in calves in the absence of the face fly (Musca autumnalis) or environmental conditions that might insult the eye. Thirty calves were placed in 10 groups of 1 experimentally infected calf and 2 contact calves each. Over 40 days, only 1 eye in 1 contact calf developed clinical infectious bovine keratoconjunctivitis. The organism was recovered in only 8 of 20 contact calves, whereas infection and disease occurred in all experimentally infected calves. Transmission of M. bovis occurring in the absence of some other intervening factor was probably of minimal importance. Seemingly, herd preventive treatment would be most effective when flies and environmental factors are at a minimum.--Kenneth E. Kopecky, DVM, et al, Am J Vet Res, Vol 47, No. 3, March 1986 as reported in Animal Health Beat, University of Nevada-Reno, March 1986.

## THOUGHT FOR THE MONTH

If you sometimes get discouraged, consider this fellow:

he dropped out of grade school  
ran a country store, went broke and took  
15 years to pay off his bills  
took a wife and had an unhappy marriage  
ran for the House of Representatives twice and lost both times  
ran for the Senate and lost twice  
delivered a classic speech to an indifferent audience  
was attacked daily in the press  
was despised by half the country

Despite all this, imagine how many people have been inspired by this ruffled, brooding man who signed his name simply,

A. Lincoln

**CONTINUING EDUCATION OPPORTUNITIES**

- April 20, 1986                      Small Animal Medicine Update  
Holiday Inn North - Winston-Salem, NC
- April 22, 1986                      Local Association Meeting - Blastomycosis  
Donaldson Brown Center - Blacksburg, VA
- April 23, 1986                      Small Animal Medicine Update  
Thomas Nelson Community College - Newport News, VA
- April 24, 1986                      Cavalier Inn, Charlottesville, VA
- May 10, 1986                        Food Animal Practice Workshop  
Holiday Inn Afton - Waynesboro, VA
- June 20-22, 1986                    Virginia Veterinary Medical Association  
Summer Sojourn - Wintergreen, VA

**For more information on these meetings, contact:**

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