



# VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

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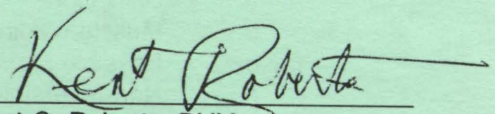
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BLACKSBURG, VA

  
 Kent C. Roberts, DVM  
 Extension Veterinarian



## CHEMICAL RESTRAINT IN CATS

When compared to dogs, cats object more to being physically restrained for examinations, but various diagnostic and treatment procedures in cats require restraint. Depending on the procedure and degree of invasiveness, a cat may need mild tranquilization or profound sedation to allow a veterinary procedure to be performed. The following anesthetics or anesthetic combinations can be used for diagnostic or treatment procedures.

The following drugs will produce a mild to moderate tranquilization in an overall healthy cat. These drugs can be also used as a premedication for inhalation anesthesia:

### A. Acepromazine:

1. Dose:
  - a. 0.05-0.1 mg/lb, IM; 0.02-0.05 mg/lb, IV
2. Advantage:
  - a. Antiemetic
3. Disadvantages:
  - a. Non-reversible
  - b. Slow onset
  - c. Degree of tranquilization/sedation is variable
  - d. Prolonged recovery

### B. Xylazine:

1. Dose:
  - a. 0.5 mg/lb, IM; 0.25 mg/lb, IV
2. Advantages:
  - a. More reliable than acepromazine in producing tranquilization/sedation
  - b. Reversible, with yohimbine 0.1-0.2 mg/lb, IM
  - c. Fast onset if given IV
3. Disadvantages:
  - a. Potent emetic, 0.3 mg/lb, SC as an emetic agent
  - b. Bradycardia; can be prevented with anticholinergics (atropine 0.02 mg/lb, IM; given together with xylazine)

### C. Ketamine:

1. Dose:
  - a. 8-12 mg/lb, IM; 4-6 mg/lb, IV
2. Disadvantages:
  - a. Salivation
  - b. Muscle rigidity
  - c. Possible stormy recovery
  - d. Non-reversible
  - e. Pain on injection

### D. Telazol:

1. Dose:
  - a. 2-4 mg/lb, IM; 1-2 mg/lb, IV
2. Advantages:
  - a. Fast onset
  - b. Muscle relaxation
  - c. Better recovery than ketamine alone

3. Disadvantages:
  - a. Salivation
  - b. Non-reversible
  - c. Prolonged recovery
  - d. Pain on injection
  - e. Controlled substance

The following drugs will produce a profound sedation in healthy cats:

**A. Ketamine:**

1. Dose:
  - a. 15-20 mg/lb, IM
2. Advantages:
  - a. Low cost
  - b. Non-control substance
3. Disadvantages:
  - a. Salivation
  - b. Muscle rigidity may progress into seizure
  - c. Pain on injection
  - d. Stormy recovery likely to occur
  - e. Non-reversible

**B. Acepromazine-ketamine**

1. Dose:
  - a. Acepromazine: 0.1 mg/lb, IM
  - b. Ketamine: 8-10 mg/lb, IM
  - c. Both drugs can be given together in the same syringe
2. Advantages:
  - a. Low cost
  - b. Less likely to have seizure
3. Disadvantages:
  - a. Salivation
  - b. Muscle rigidity
  - c. Pain on injection
  - d. Possible prolonged recovery
  - e. Non-reversible

**C. Xylazine and ketamine:**

1. Dose:
  - a. Xylazine: 0.5 mg/lb, IM
  - b. Ketamine: 8-10 mg/lb, IM
  - c. Both drugs can be given together in the same syringe
2. Advantages:
  - a. Xylazine is reversible, with yohimbine 0.1-0.2 mg/lb, IM
  - b. Fast onset
  - c. Better muscle relaxation
  - d. Better analgesia
  - e. Better recovery
3. Disadvantages:
  - a. Possible cardiovascular depression

**D. Xylazine and butorphanol:**

1. Dose:
  - a. Xylazine: 0.5 mg/lb, IM
  - b. Butorphanol: 0.1-0.2 mg/lb, IM
  - c. Both drugs can be given together in the same syringe
2. Advantages:
  - a. Xylazine is reversible with yohimbine 0.1-0.2 mg/lb, IM
  - b. Butorphanol is reversible with naloxone 0.02-0.05 mg/lb, IM
  - c. Good muscle relaxation and sedation
  - d. Good analgesia
  - e. Smooth recovery
3. Disadvantages:
  - a. Possible cardiovascular depression
  - b. Bradycardia will occur if an anticholinergic agent is not given. Atropine 0.02 mg/lb, IM can be given together in the same syringe with both anesthetics.

**E. Telazol:**

1. Dose:
  - a. 4-6 mg/lb, IM
2. Advantages:
  - a. Fast onset
  - b. Muscle relaxation
  - c. Somatic analgesia
  - d. Less cardiovascular depression
3. Disadvantages:
  - a. Salivation
  - b. Non-reversible
  - c. Prolonged recovery
  - d. Pain on injection
  - e. Controlled substance

**F. Diazepam-ketamine:**

1. Dose:
  - a. Diazepam: 0.2 mg/lb, IM
  - b. Ketamine: 8-10 mg/lb, IM
  - c. Both drugs can be mixed in the same syringe just before administration
2. Advantages:
  - a. Muscle relaxation
  - b. Somatic analgesia
  - c. Less cardiovascular depression
3. Disadvantages:
  - a. Salivation
  - b. Non-reversible
  - c. Pain on injection
  - d. Controlled substance (diazepam)

--Jeff Ko, DVM, MS, Anesthesiology, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

**THOUGHT FOR THE MONTH**

The best use of life is to invest it in something which will outlast life.

--William James

### DEODORIZING A SKUNKED PET

The October 18, 1993 issue of *Chemical and Engineering News* (p. 90) gives a formula developed by chemist Paul Krebaum (Lisle, IL) for deodorizing a skunk-afflicted pet.

The formula is:

1 qt 3% hydrogen peroxide  
1/4 cup baking soda (sodium bicarbonate)  
1 teaspoon liquid soap

The bath should be followed with a tap water rinse. --Abstracted from *Illinois Veterinary Bulletin, Volume 1, Number 2, December 1993*, as reported in *Animal Health Spectrum Volume 5, No 1, March 1994*.

### CONFRONTING HYPERKALEMIC PERIODIC PARALYSIS

There has been a great deal of attention paid to a genetic disorder that affects Quarter Horses, Paints, and Appaloosas.

Hyperkalemic periodic paralysis, or HYPP, has made an impact on the horse industry; and because of the risks that this disorder poses to both humans and horses, veterinarians may increasingly find themselves a target of malpractice claims.

Research indicates that HYPP is inherited via an autosomal dominant gene. A blood test has been developed to identify horses that carry this gene. So far, all of the horses that have been diagnosed with this condition are descendants of a single Quarter Horse stallion. According to the *Journal of the AVMA* (Vol. 202, No. 8 pp. 203-9), clinical signs of the disease include muscle fasciculation, prolapse of the third eyelid, and even total collapse.

Stressful situations (such as trailering or anesthesia) or changes in management (such as a diet modification) can cause the clinical signs of HYPP to appear in previously unafflicted horses.

Because open communication is one of the best approaches to prevent malpractice claims, the AVMA Professional Liability Insurance Trust advises that veterinarians discuss with their clients the nature of HYPP, the bloodlines involved, and, perhaps most important, the availability of the diagnostic blood test.

Until a diagnosis of HYPP is confirmed via blood test, discussions regarding whether a specific horse has the condition should focus on the genetic aspect of the disease and the bloodlines most commonly affected without making a specific diagnosis.

Once the diagnosis is confirmed, however, clients should be advised of the (1) clinical features of the disease, (2) possible treatment alternatives available, (3) the relative effectiveness of these treatment alternatives, (4) genetic implications of breeding horses with this disorder, and (5) risks of owning or working with a horse that has HYPP.

When clients are informed about the blood test yet refuse to have it performed, the veterinarian should either have them sign a statement to that effect, or make a note of the discussion in the records and have them initial it.

This approach may offer some protection against the client who claims he or she was never informed of the potential problems. --Professional Liability, Vol 13, No 1, January 1994, as reported in *Florida Veterinary Scene, Vol 3, No 2, March/April 1994*.

## CANINE BLOOD SUBSTITUTE TRIAL

Blood products are becoming more readily available to the practicing veterinarian, but it may be impractical to store blood products in your practice. The Virginia-Maryland Regional College of Veterinary Medicine is participating in a multicenter clinical trial for FDA approval of a blood substitute for use in dogs. When approved, this product could be stored on your shelf and used until other blood products could be shipped to you by a blood bank. Several dozen patients have been entered into the study, but many more are needed before the study will be complete. Dogs with a significant anemia ( $PCV \leq 21\%$ , hemoglobin  $\leq 7.0$  g/dl) can be considered for entrance into the study. We cannot include patients with hemoglobinemia, hemoglobinuria, severe thrombocytopenia ( $< 50,000$  platelets/ $\mu$ L), oliguria, or heart failure.

We are very excited about the opportunity to be part of evaluating this effective substitute for packed red blood cells. We would be very grateful if you would consider referring suitably anemic dogs to the VMRCVM. Significant financial assistance will be provided to the client for treatment of these patients. If you are interested in referring an anemic patient or would like additional information, please call the VMRCVM at (703) 231-4621 and mention the anemia study to the Teaching Hospital operator. --  
**Dr. Bernard Feldman and John Jacobson, VMRCVM, Virginia Tech, Blacksburg, VA.**

## SUCCESS IS NO ACCIDENT

Veterinary medicine, and especially veterinary practice, offers some great opportunities for leadership. While leadership is agreeably important in any organization or endeavor, a definition of the word is truly difficult; particularly a meaningful, workable definition.

I believe that veterinarians should be aware of leadership traits and the leadership needs of their organization. If you are a practice owner or principal, employees probably look to you for leadership whether you perceive yourself as a leader or not.

Are you providing good, effective leadership? Are you giving direction to people's efforts in your practice? Are you leading by example? You probably are, be it good or bad. Does ego get in the way of good service? Here are some further thoughts on this important subject.

- There are no unimportant people in your practice, clients or employees.
- Clear goals and direction, periodically reviewed, revised, and explained, are critical to practice success.
- Listening, caring, and communicating well are basic in dealing with clients and employees.
- Courage, integrity, and authenticity are key traits of good leaders.

In their book, Leaders: The Strategies for Taking Charge, Warren Bennis and Burt Nanus, after studying 90 business leaders, concluded that these leaders used five key skills.

- The ability to accept people as they are.
- The capacity to approach relationships and problems in terms of the present rather than the past.
- The ability to treat people close to you with the same courteous attention that you extend to strangers.
- The ability to trust others, even if the risk seems great.
- The ability to do without constant approval and recognition from others.

--Kent Roberts, DVM, Extension Veterinarian, VMRCVM, Virginia Tech, Blacksburg, VA.

**CONTINUING EDUCATION OPPORTUNITIES  
FALL 1994**

<u>Date</u>	<u>Subject</u>	<u>Location</u>	<u>Contact Hours</u>
+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 (Intermediate)	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

**USDA VETERINARY BIOLOGICS AND DIAGNOSTICS HOT LINE**

The USDA encourages the reporting of all adverse reactions involving veterinary biologic and diagnostic products and has a 24-hour hot line available for such reports.

Should a veterinary biologic or diagnostic product appear to be ineffective or to cause an adverse reaction, the product manufacturer and also the USDA [(515) 232-5789] should be notified. Collect calls are accepted Monday-Friday, 7:30 a.m. to 4:00 p.m., CT. A message service is available to all other times. To file a written report, notify the Veterinary Biologics Field Operations, 223 South Walnut Avenue, Ames, IA 50010. --**Newsletter May 1994, National Veterinary Service Laboratories, Ames, IA.**

**BEHAVIOR SEMINAR**

The student chapter of AAHA at the College of Veterinary Medicine, Virginia Tech in Blacksburg will sponsor a seminar on small animal behavior September 2-3, 1994. The featured speakers are Dr. Victoria Voith, Texas behavior consultant now at the Upjohn Company, Kalamazoo, MI; Dr. Karen Overall, University of Pennsylvania, veterinary behaviorist; and Dr. Bernie Hansen, North Carolina State University. The registration fee for veterinarians is \$100. The program starts at 6:00 PM Friday, September 2 and concludes at 5:00 PM Saturday, September 3.

For a seminar brochure or more information, please contact Ms. Tracy Lord (703) 382-5854 or Kent Roberts, DVM (703) 231-7181.

Virginia-Maryland Regional College of Veterinary Medicine Extension Staff:

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