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Small Animal/Exotic Edition

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Ear wicks for the stenotic ear

Another approach to treat a stenotic ear with steroids is the use of an ear wick. The dehydrated, compressed polyvinyl alcohol wicks have a sponge-like architecture. A dry ear wick (Ultracell Medical Technologies) can be placed into the stenotic ear canal and then moistened with an aqueous steroid several times daily. The moistened wick will swell to many times its dry diameter and will form fit to the ear canal. These wicks may be purchased to achieve either a 7 mm or a 9 mm hydrated diameter. In this manner, the corticosteroid medication will be in constant contact with the ear canal. It is left in for 2 weeks and then removed. Often the hyperplasia and inflammation will decrease appreciably, increasing lumen diameter.

Louis N. Gotthelf, DVM
101st AL VMA Conf Procd

Hospitalized cats, feeding

Remove litter pan from cage before offer food. Using Feliway spray in cage 35 minutes before offering food will increase intake. Measure water intake on every patient: cats drink before they eat if they have been sick. Use bigger cages so litter box is >3 feet away from food bowl or remove litter pan while food is in cage. Use flat dishes so whiskers don't touch; deep bowls create "air hunger" type reaction in brachycephalic breeds and cats with upper respiratory signs. Use paper plates or "china"- not plastic, not stainless steel; stainless steel bowls are cold to cat's touch; plastic ones often hold residual soap or food smells. Cover front of cage to give cat safe place to eat. Offer cat's usual diet first. Warm food to ~85° ("luke warm"). Start with 1 teaspoon and if cat eats all, offer sequential teaspoons; a mound of food in front of a sick cat can induce nausea; cat displays nausea by turning head and/or swallowing and/or licking to outside corner of mouth. Remove untouched food after ~20 minutes if just not eating; immediately if cat acts nauseous. Vanilla flavor non-dairy coffee creamer can be used as a wash down for medicines.

Hazel Carney, DVM, MS, Dip ABVP
WA St VMA Conf Procd, 05:08

INSIDE THIS ISSUE

Glargine use in cats

Glargine has become increasingly popular in cats with diabetes due to increased rates of diabetic remission (when accompanied by dietary modification) compared to PZI insulin in newly diagnosed diabetic cats. Glargine has a longer duration than PZI in cats and can be used once daily. Although many cats can be controlled with once daily administration, twice daily administration is believed by some to provide superior glycemic control and improve remission rates, particularly in newly diagnosed diabetic cats. The initial dose recommendations in cats are 0.5 U/kg, BID if glucose is ≥360 mg/dl and 0.25 U/kg if glucose is <360 mg/dl. Hypoglycemia is fairly common when instituting therapy but clinical signs due to hypoglycemia are rare. Dogs have shown a less predictable response to glargine than cats so it is not as commonly used in this species. The recommended dose in dogs is the same as cats. Glargine can be stored in the refrigerator for 6 months.

Jana Gordon, DVM, Dip ACVIM
CVC Wash DC, 2012

Supplements in sporting dogs

The author recommends a supplement of omega-3 fatty acids such as fish oil to decrease the clinical signs of osteoarthritis and to reduce matrix metalloproteinase production in joints, which, when increased, increases the signs of osteoarthritis by degrading proteoglycans and cartilage. Supplementation with omega-3 fatty acids also results in decreased production of prostaglandin E_2, a mediator of pain and inflammation in osteoarthritis. Theoretically, a diet rich in omega-3 fatty acids would slow the development of osteoarthritis in athletes by reducing cartilage degradation, allowing them to compete at peak performance for longer periods. Polycose (Abbott Nutrition) is a human glucose supplement that can be given to dogs in water (1.5 g/kg in 1 pint of water) within 30 minutes after an event to replenish energy stores. It should not be used if another event will be performed in less than two hours of administration since there will not be enough time to absorb the glucose source and gastrointestinal upset may result. Dimethyl-

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glycine has not been proven to improve performance in racing greyhounds, but carnitine as a diet supplement (22-50 mg/kg, once daily) has been shown to increase endurance in sled dogs. L-carnitine at a dosage of 100 mg/kg, once a day may increase muscle force and delay muscle fatigue in dogs, which could reduce injury to bone and joints due to muscle fatigue.

Wendy Baltzer, DVM, PhD, Dip ACVS
Vet Med, 107:4, 2012

Safety of meloxicam in cats

Two studies have evaluated long-term safety of meloxicam in older cats; one concluded that this agent is safe, efficacious and palatable for osteoarthritis pain at 0.01-0.03 mg/kg, PO, q24h for a mean treatment duration of 5.8 months; no deleterious effect on renal function was detected in cats studied. GI upset in 4% of cats was the only adverse effect noted. The second study reviewed the medical records of cats over 7 years of age treated for a minimum of 6 months with a daily maintenance dose of 0.02 mg/kg meloxicam and concluded that this dose does not hasten progression of renal disease in aged cats or aged cats with pre-existent stable IRIS stage 1-3 renal disease.

Margie Scherk, DVM, Dip ABVP
WI VMA Conf Procd, 10:11

Analgesia, post-op kittens

Post-operative analgesia for spays can be addressed with splash blocks. One protocol mixes two parts 0.5% bupivacaine, one part 2% lidocaine and one part 0.9% NaCL. Splash 0.22 ml/kg onto the incision after closure of the linea but before closure of the subcutaneous tissue and skin. A single dose of meloxicam (0.1-0.2 mg/kg, SQ) may be used for kittens over 6 weeks of age.

Susan Little, DVM, Dip ABVP
Am Ass'n Fel Pract Conf Procd, 03:10

Using enough otic Rx

Use enough topical medicine to attack the problem. The reason people have trouble clearing up infected ears is they're not getting the medicine down in there. The author's rule of thumb for dispensing otic topicals is 1 ml per ear, per 50-pound dog. When you use 'five drops,' you're just asking for catastrophe. The medicine is not getting into the ear canal. When the author sends home Otomax for a golden retriever in 15-gm tubes for 10 days of treatment, the client is going to get 4-5 tubes. Virbac's new product, Easotic, is a good choice because it precisely dispenses 1 ml of product and is labeled for once daily use for 5 days.

Paul Bloom, DVM, Dip ACVD, Dip ABVP
Vet Pract News, Aug 2012

Storm phobia

Every attempt should be made to minimize the intensity of external stimuli associated with the storm, fireworks, or other noise event. Providing background 'white' noise or calming music (Through a Dog's Ear; www.soundstrue.com) can make the external noise less intense. Closing blinds can decrease visual stimulation associated with storms and fireworks. Providing a safe place for the dog to hide, or enhancing a place the dog has already chosen for that purpose can give the dog a means of coping. A Dog Appeasing Pheromone diffuser can be added in that location. Dogs that do not seek out an open crate should not be crated during storms or risk creating a claustrophobic response to crating.

Margaret M. Duxbury, DVM, Dip ACVB
121st SD VMA Conf Procd, 2012

Home prepared diets

Standard Pet Formula - adequate for healthy adult dogs and cats at maintenance. 1 pound fresh boneless skinless chicken breast; 1 2/3 cup cooked white rice; 1 tablespoon safflower oil; 1/4 tsp Morton lite salt; 1/4 teaspoon regular iodized salt; 3 grams calcium carbonate without vitamin D (regular Tums - check size); 1 tablet Centrum Adults under 50 multivitamin-mineral supplement; 1/4 tsp taurine powder (or 500 mg tablet), taurine is optional for dogs - essential for cats; Sauté chopped chicken breast in oil until thoroughly cooked. Add cooked rice and both salts. Grind Tums, multivitamin/mineral tablet, and taurine supplement together. Add to cooled mixture. Store in refrigerator. Larger batches may be prepared in advance and stored in the freezer. This recipe supplies approximately 1,000 kcal which is appropriate for daily needs of a 20-25 kg active dog. For convenience, all of the supplements are included in Balance IT powder, but the type and amount has to be calculated with software available on the website. Adjustments can be made if the recipe needs to be, for example, restricted in fat or protein or carbohydrate by increasing or decreasing the amounts of the foods. However, direct substitutions should not be made (such as beef for chicken or pasta for rice) as the resulting recipe may be out of balance.

Craig Datz, DVM, Dip ABVP, Dip ACVN
CVC, Wash DC, 2012

Taurine and dilated cardiomyopathy

A relationship between taurine and L-carnitine abnormalities and dilated cardiomyopathy (DCM) has been previously described in the Cocker Spaniel. There have now been additional reports of the development of DCM in the dog in which low blood or plasma levels of taurine have been documented. The dogs were all adult at the time of onset and were breeds that would be considered to be in the large breed dog groups. A common factor observed in several dogs that developed DCM and were determined to have low taurine was the ***feeding of a diet of a dry dog food with lamb meal, rice*** or both as the primary ingredient. It has been hypothesized that rice bran or

whole rice products may result in decreased taurine levels in some dogs. A diagnosis of taurine deficiency is indicated by a blood level of <150 nmol/ml or plasma levels <40 nmol/ml. If taurine deficiency is suspected, taurine supplementation should be started while waiting for the results. Dosage of 1000 mg/day (divided or once a day) appears to be a consistent recommendation. Additional cardiac medications should be provided as needed including inotropic support such as pimobendan and treatment of heart failure if needed. Taurine deficient dogs with dilated cardiomyopathy appear to respond to supplementation fairly rapidly and improvement in echocardiographic measurement should be observed in 3 - 6 months. Ideally, blood levels of taurine should be reevaluated in 1-2 months to confirm that the levels have increased.

Kathryn M. Meurs, DVM, PhD
WA St VMA Conf Procd, 10:10

Transfusion in trauma cases

Don't be afraid of the transfusion or transfuse early/transfuse often! Recall in trauma that the ***day started out good,*** meaning that in the vast majority of animals with trauma, a PCV that is <30% is suggestive of severe loss. Thus, if you see a 3-year-old Lab with a PCV of 27% on presentation, this likely represents close to a 40% blood loss! The impact of fluid dilution is hard to predict. In a non-bleeding dog, the addition of 30 ml per kg of crystalloid could be expected to lower the PCV from 50% to 37% until redistribution occurs and the PCV returns to normal. If you transfuse early, you may be able to avoid playing "catch-up" later. Additionally, avoiding microvascular hypoperfusion may prevent DIC or SIRS. Type specific blood is required in cats, and appealing but not required in first transfusions in dogs.

Elizabeth Rozanski, DVM, Dip ACVECC, Dip ACVIM
15th Int VECCS Conf Procd

Giving insulin injections in the cat

Insulin syringes, as compared with other types, are recommended because of the small needle size, but a needle prick can still be an unpleasant sensation. A good practice is to make the injections part of a good experience. For diabetic pets that are meal-fed and enjoy their food, inject them as they are eating and when they are close to finishing the meal. For others, owners can give the injections while doing a pleasurable activity. The author's loved getting brushed every day. When he became diabetic, the author started brushing him twice daily, and the insulin was given midway through each brushing. For any patient that needs a small amount of insulin, 0.3- or 0.5-ml insulin syringes should be used for accurate dosing. These are referred to as *low-dose syringes*. The scale on the syringe is easier to read for small doses. The site of insulin injection is important. An appropriate location must be chosen, as absorption of insulin from various sites in the body differs. In dogs and cats, the dorsal neck, or the scruff, has commonly been used as an injection site, but this location may not be ideal because of low blood flow and increased fibrosis caused by repeated injections. A better option may be to administer the insulin along the lateral abdomen and thorax. The chosen area should be rotated daily to prevent fibrosis at an injection site.

Ellen N. Behrend, VMD, PhD, Dip ACVIM
Vet Med, Jul 2012

Coenzyme Q10 for heart disease

The role of coenzyme Q10 in veterinary cardiology has yet to be defined. Coenzyme Q10 has been shown to protect dog hearts in experimental models of ischemia. No clinical trials in naturally occurring canine heart disease have been reported. While coenzyme Q10 is not part of this author's standard heart failure therapy, its potential benefit is discussed with owners of patients with dilated cardiomyopathy. If they're interested in trying a nonproven therapy, the author will supplement with ubiquinol (the reduced form of CoQ10) rather than ubiquinone, as it much better absorbed than ubiquinone (8x better in humans) and may be more effective. Extrapolating dosage from humans to dogs and cats, the author would use a daily dose of 50 mg in small dogs and cats, 100 mg in medium dogs, 100-150 mg in large dogs and 150-200 mg in giant breeds. Ubiquinol is generally available in 50 and 100 mg capsules. Blood levels can be monitored, but are expensive. If monitored, aim for a blood level of around 3.5-4 mcg/ml. Clinical effects are seen 30 to 60 days after supplementation begins. This supplement is quite expensive.

Francis W.K. Smith Jr., DVM, DACVIM
83rd West Vet Conf Procd

Golden Retriever research study

Owners of Golden Retrievers, along with their veterinarians, have an opportunity to improve the health of future generations of dogs, thanks to a study being conducted by Morris Animal Foundation (MAF). According to the nonprofit organization, 3,000 dogs will be enrolled over the next two years to participate in the Golden Retriever Lifetime Study, the largest and longest observational study ever launched in an effort to better understand the genetic, nutritional, and environmental risk factors for cancers and other canine diseases. According to MAF, 3,000 dogs will be enrolled over the next two years to participate in the Golden Retriever Lifetime Study, the largest and longest observational study ever launched in an effort to better understand the genetic, nutritional and environmental risk factors for cancers and other canine diseases. Dogs must be in good health and less than 2 years of age to be considered for enrollment. In addition, participants are required to commit to the study for the entire life of their dog. Own-

ers interested in participating, can register their dog at www.CanineLifetimeHealth.org.

DVM News Mag, Nov 2012

Increasing office visits

Asking about other household pets during every client visit is valuable because earlier interviews with pet owners found that owners who regularly take a pet (e.g., a dog) to the veterinarian may have other pets at home (often a cat) that they do not take for regular visits. Thus, asking about other pets during every visit could potentially help identify those pets with lapsed appointments. Practices that had increases in the number of patient visits were those that actively marketed the practice through social media and other means, believed strongly in the importance of wellness visits, and built strong veterinarian-client bonds by having pet owners see the same veterinarian every time.

John O. Volk, BS et al.
JAVMA, 239:10

Recombinant human protamine zinc insulin

Some dogs with diabetes mellitus are insufficiently controlled with NPH insulin, leaving practitioners in search of a longer-acting insulin alternative. The search has become even more difficult since a purified pork source Lente insulin was removed from the market by the FDA in 2009. In a recent study, 6 newly diagnosed and 11 insulin-treated diabetic dogs were given recombinant human protamine zinc insulin for 60 days. On days 7, 14, 30, and 60, the dogs were evaluated (history, physical examination including body weight, serum fructosamine concentration, and blood glucose concentration) prior to and at two-hour intervals (up to 10 hours) after insulin administration. The dogs demonstrated significant decreases in mean 10-hour serum blood glucose and serum fructosamine concentrations at day 60, and clinical signs including body weight improved. Hypoglycemia was the only adverse event observed. The study results suggest that the use of this insulin product is ***effective in diabetic dogs*** and offers an alternative to patients poorly controlled with other insulin preparations.

A.D. Maggiore et al.
J Vet Intern Med 2012;26(1):109-115

After care of feline urethral obstruction

Most of the cats that this author has treated for urethral obstruction have the urinary catheter in place for about 2 days. The criteria for removal of the catheter are that the urine is relatively free of grit and is not grossly cloudy or bloody. The catheter is removed the morning on the day of discharge and it is verified that the cat can urinate prior to going home. If the cat cannot urinate, then a urethral plug may be present or there may be a functional obstruction due to urethral spasm. Sedation and urinary catheterization will be required to determine the cause. If there is a physical obstruction, it will be detected during passage of the urinary catheter. The urinary catheter will pass relatively easily if urethral spasm is the cause. The urethral spasm may be treated with phenoxybenzamine (2.5-7.5 mg/cat, PO, q12-24h). The onset of action is relatively slow (hours) and increases over several days. For this reason, ***some clinicians advocate phenoxybenzamine soon after initial urinary catheterization*** once the cat is stable and can tolerate oral drugs.

Kenneth J. Drobatz, DVM, MSCE, Dip ACVIM, Dip ACVECC
San Diego Co VMA Conf Procd, 04:10

Darbepoetin for anemia in cats

Erythropoiesis is largely controlled by the kidney's production of erythropoietin in response to anemia. In cats with chronic kidney disease, 30% to 65% have an associated anemia. The use of erythropoiesis-stimulating agents has been associated with a number of complications in cats, including a pure red cell aplasia, rendering patients transfusion-dependent. ***Darbepoetin is an effective erythropoiesis-stimulating agent*** in people, but there is little data on its use in companion animals. In a recent study of 25 cats, 14 responded to darbepoetin—all but one receiving a dose of 1 µg/kg/week or higher. The adverse events possibly attributable to darbepoetin included vomiting, hypertension, seizures, and fever. Darbepoetin was effective for treating anemia associated with chronic kidney disease in cats. Additionally, the results suggest that pure red cell aplasia is less common with the use of darbepoetin than with the use of other erythropoiesis-stimulating agents.

S. Chalhoub et al.
Vet Med, Aug 2012

Transfusing with packed RBC

Options for red blood cell transfusions include fresh whole blood, stored whole blood and packed red blood cells (PRBC). If available, ***PRBC are the product of choice*** as they can be dosed specifically for treatment of the anemia without administration of unnecessary plasma. The dose of red blood cells required is determined by the size of the recipient and how much you wish to increase the PCV. This dose can be estimated by the following formulas: 2 ml/kg of whole blood will increase a patient's PCV by ~1%; 1 ml/kg of PRBC will increase a patient's PCV by ~1%. For example if a 20 kg dog has a PCV of 15% and the target PCV is 25% (i.e. an increase in PCV of 10% is desired) the dose of whole blood would be 2x20x10 = 400 ml. The dose of PRBC would be 1x20x10 = 200 ml. The dose may then be rounded up or down to the nearest unit or half unit.

Kate Hopper, BVSc, PhD, Dip ACVECC
112th Penn Vet Conf Procd, 2012

Welcome back, Dr. Banks of Austin, Texas