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AT A GLANCE

Don't put chlorhexidine in cat ears

Regarding safety of chlorhexidine in otic products, a study reported the effects of instilling 0.2% chlorhexidine into the ear canals of dogs with experimentally ruptured tympanic membranes. In this study, 0.2% chlorhexidine was instilled in Greyhound's ear canal BID for 21 days. At the end of the study there were neither clinical vestibular signs nor BAER changes noted. THIS DOESN'T APPLY TO CATS!!!. A study instilling 0.05% chlorhexidine once every other day for 3 treatments into the middle ear of cats concluded that even this concentration of chlorhexidine may cause hearing loss in a cat. The authors did a subsequent study in which they evaluated vestibular effects of infusing chlorhexidine into the middle ear of cats. That study concluded that exposure of the middle ear to even dilute concentrations of chlorhexidine (0.05%) were likely to cause vestibular disturbances.

Paul B. Bloom, DVM, DACVD, DABVP
New England VMA Conf, 09:18

Meloxicam use in the cat

Meloxicam has market authorization for long-term use in cats in many countries (not the United States). Meloxicam has efficacy in cats with DJD based on different methods of evaluation. Cats are notoriously difficult to medicate but the liquid formulation of meloxicam is palatable and well accepted by most cats; in addition, the liquid formulation facilitates accurate dosing. Many older cats with DJD also have chronic kidney disease (CKD), however, with caution, ***these cats can still benefit*** from NSAID administration and there are studies reporting the use of meloxicam in this population. In these reports, CKD was stable and treatment was not blinded or randomized. In a euvolemic state, renal perfusion is not prostaglandin (PG) dependent, but in the face of dehydration, hypovolemia or hypotension, vasodilatory PGs are important for maintaining perfusion. The owner and veterinarian should work together to find the lowest effective dose for each individual patient; in countries where meloxicam is authorized, the label dose is 0.05 mg/kg, PO, once daily, but many cats do well on doses of 0.01-0.03 mg/kg. Client education is essential – for example if the cat refuses to eat, vomits or has diarrhea, the NSAID should not be given and the veterinarian must be contacted.

Sheilah Robertson, BVMS (Hons), PhD, DACVAA, DECVAA
American Ass'n Feline Practitioners Conf, 09:18

Treatment of mitral valve disease

Treatment of asymptomatic myxomatous mitral valve disease (MMVD): The EPIC Study (2016) showed that dogs with MMVD and echocardiographic and radiographic evidence of cardiomegaly treated with pimobendan took on average ~15 months longer to develop CHF when compared with untreated dogs. The recommended dose of pimobendan is 0.25-0.3 mg/kg, PO, q12h. Pimobendan administration prior to the onset of significant heart enlargement is not currently recommended, as the benefit of treatment at this stage is unknown and unsubstantiated.

Sandra P. Tou, DVM, DACVIM
Emerald Coast Veterinary Conf, Jun 2019

Ketoprofen in cats

Ketoprofen is not approved for use in small animals in the United States but is approved for both dogs and cats in Europe. The half-life of the drug is short in cats (1.5 hrs) compared to dogs. Ketoprofen has been used as an analgesic in cats, particularly in Canada (1 mg/kg, every 24 hours, for 7-10 days). The antipyretic effect of ketoprofen (2 mg/kg, SQ, followed by 1 mg/kg, once daily, orally) in febrile cats was rapid, being evident in 4 hours with temperatures normalized at that time. Temperatures

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did not change in the antibiotic-only treated cats. The use of ketoprofen as an analgesic is variable. In cats subjected to ovariohysterectomy, ketoprofen (2 mg/kg, SQ) compared favorably with buprenorphine (0.006 mg/kg or 6 µg/kg IM) and meperidine as gas anesthesia was discontinued. Response better for both drugs compared with the control at both 4 and 8 hours but still present for buprenorphine only compared with control at 18 hours.

Dawn Merton Boothe, DVM, PhD, DACVIM
128th SD VMA Conf, Aug 2019

Saying "recheck" a different way.

It's always difficult to determine the best way to recommend and then charge for rechecks and not have clients balk. This author gave her thoughts specifically on food allergy trial rechecks, which she thinks should be charged no differently than anything else. Rechecks are tricky because we don't do a good enough job educating why the recheck is necessary. The term 'recheck' means nothing to pet owners. What you need to say is, "We need to have Fluffy back in two weeks to see her ears and skin and make sure the food trial is making a difference."

Karen Felsted, CPA, MS, DVM, CVPM
Vetted, Aug 2019

Nictitans flap in small mammals

Third eyelid or nictitans flaps have been recommended in the past as treatment for nonhealing or complicated ulcers. Most ophthalmologists now agree that these are not the standard of care for dogs and cats with corneal ulcers, as they interfere with medication administration, can lead to adhesion formation, and prevent monitoring. Nonhealing or complicated ulcers require management with debridement (in the case of indolent-type ulcers) or with microsurgical grafting techniques (in the case of deep ulcers). However, third eyelid flaps can be useful in small mammals such as ferrets or rabbits, who lack sufficient bulbar conjunctiva for grafting surgeries. Proper placement of a third eyelid flap requires anchoring the suture sufficiently around the third eyelid cartilage and ensuring sutures are seated deep in the conjunctival fornix to avoid corneal contact. This can be easier to achieve using double-armed suture. Suture size will need to be determined based on patient size; 6-0 nylon or polypropylene would be an appropriate choice for a ferret, for example.

Stephanie Pumphrey, DVM, DACVO
24th Int Emergency Critical Care Conf, 09:18

Feline constipation and MiraLAX

Polyethylene glycol 3350 (PEG 3350; e.g. MiraLAX; miralax.com), a bulking and fecal hydration agent, contains large molecules that cannot be absorbed by the gastrointestinal tract. Therefore, it works as an osmotic laxative, pulling water into the colonic lumen. In an uncontrolled, open- label study of six healthy cats with no history of gastrointestinal disease, PEG 3350, given at a median daily dose of 3.0±1.1 g, resulted in the desired fecal consistency in all six cats within one month of therapy. Mild hyperkalemia was the only side effect noted in some of the cats. No other adverse effects were noted as a result of PEG 3350 administration. Although there are no published reports on the use of PEG 3350 in cats with constipation, this author uses it often and finds it to be an effective ***prophylactic treatment*** for cats at risk for constipation and may be a more palatable option as it can be added to the cat's food without imparting a major taste change.

Katie Tolbert, DVM, PhD, DACVIM
88th FL VMA Conf, 04:17

Addison's in cats

Cats in an addisonian crisis present the same as dogs—in shock, hypovolemic, bradycardic and hyperkalemic—most cats with Addison's will not present this way. The biggest problem with Addison's in cats is that the clinical signs are often nonspecific. Addisonian cats are lethargic, dehydrated, ADR ("ain't doing right"), anorectic, have lost weight and occasionally vomit. Signs are episodic. The typical story is that you treat them with fluids and corticosteroids and they get better. Notice that this is every sick cat on the planet? Addisonian cats need mineralocorticoid replacement—either oral fludrocortisone (Florinef) or intramuscular injections of desoxycorticosterone (DOCP). The fludrocortisone dosage is 0.1-0.2 mg given orally twice a day. Fludrocortisone does not control sodium concentrations as well as DOCP does—cats often measure low on blood sodium concentrations and have normal blood potassium concentrations. The author does not recommend raising the dosage of fludrocortisone to correct hyponatremia if the blood potassium concentration is normal, nor does not recommend salting the cat's food because that will cause polyuria/polydipsia (PU/PD).

David Bruyette, DVM, DACVIM
DVM News Magazine, 49:6

FeLV testing

If the peripheral blood ELISA test is positive, an immunofluorescent antibody (IFA) test can be performed to confirm infection and help determine the stage of the infection. The IFA test on peripheral blood is considered by many to be the gold standard for FeLV testing. A positive IFA test confirms well established FeLV infection in the bone marrow and correlates well with persistent infection for life. Drawbacks to this test are slightly reduced sensitivity compared to peripheral blood ELISA tests, it must be run by an outside commercial laboratory resulting in a time delay in obtaining test results, and higher cost than ELISA FeLV tests. Alternatively, a serum ELISA can be ***repeated in 3-4 months***. If the cat is in an early stage of FeLV infection, regression of the infection and termination of viremia should occur within that period of time and the ELISA test will be negative when repeated. Cats remaining persistently ELISA FeLV

antigen positive after 3-4 months will usually remain antigenemic for life.

Alice M. Wolf, DVM, DACVIM, DABVP
Music City Vet Conf, 02:17

Pulmonary contusions in the cat

Pulmonary contusion in cats is most common after thoracic bite wounds. Almost all pets with pulmonary contusion should be observed overnight for progression of signs or development of other complications. It should be appreciated that pulmonary contusions are similar to bruises in other parts of the body, with progressive infiltration of inflammatory products into the damaged tissues over the first 24-48 hours. That said, it is exceedingly rare for a pet to be relatively stable and then to acutely decompensate due to worsening pulmonary contusions. Most decompensation in traumatized pets is from internal hemorrhage, or potentially from severe pneumothorax. Treatment of pulmonary contusion is non-specific. Diuretics are CONTRAINDICATED as pets are likely volume contracted rather than volume overloaded. Most contusions will ***resolve in 2-3 days*** with supportive care. Antibiotics are not indicated for isolated pulmonary contusion or are glucocorticoids.

Trisha Oura, DVM,DACVR
VMX Jan 2019

Dealing with aggressive cats

For the aggressive cat, often getting it out of the clinic cage can be problematic. One product that the author has success in using is called the EZ-Nabber (www.animal-care.com/product/ez-nabbers). It consists of a metal frame and a mesh netting that opens up to "catch" the cat in, then can be secured and medications can be administered through the mesh netting. This product cost about $135 and can help prevent unnecessary scratches and bites from fractious feline patients. One protocol the author recommends for these difficult to handle cats is a combination of ketamine (5 mg/kg) + dexmedetomidine (10 µg/kg) + butorphanol (0.2 mg/kg), IM. If a painful procedure is planned, the butorphanol can be switched out for morphine or hydromorphone. Buprenorphine does not seem to produce reliable sedation. Telazol (9-12 mg/kg) given IM is another option for sedating difficult to handle cats, but recoveries tend to be rougher.

Lisa S. Ebner, DVM, MS, DACVAA, CVA
Music City Vet Conf, 02:17

Hereditary nasal parakeratosis, Labrador Retriever

This disease is a result of an autosomal recessive trait in Labrador Retrievers causing a hyperkeratotic condition of the dorsal aspect of the nasal planum at a young age (6-12 months). It is a cosmetic disease where keratin becomes tightly adherent. The thickness of the keratin band usually thickens as the dog ages. Focal or diffuse decreased pigmentation may occur. In severely affected cases, fissures, erosions and ulcers can be seen. This is a lifelong condition and rate of progression is variable. If the dog is comfortable then no treatment is necessary. Oral/topical corticosteroids or tacrolimus can be used if discomfort develops. Hydration and moisturization are beneficial for maintenance (such as 60% propylene glycol).

Ashley Bourgeois, DVM, DACVD
Fetch San Diego, 12;17

Using apomorphine

Apomorphine induces emesis within 15-20 minutes. Apomorphine is a dopaminergic agonist that stimulates dopamine receptors (D-2) in the CRTZ and can be given at 0.03 mg/kg, IV, 0.04 mg/kg, IM or by crushing 1/2 tablet for small dogs and 1 tablet for large dogs, dissolving with saline or water, and placing in the conjunctival sac. Subcutaneous administration is not recommended due to the delayed onset of action. Despite its name, apomorphine is not an opioid and its effects cannot be reversed with naloxone. If opting for ocular administration, it's essential to thoroughly flush the conjunctival sac after the dog has vomited to prevent protracted vomiting. If vomiting does not occur within 20 minutes following the initial dose, a second dose may be administrated. If vomiting remains unsuccessful following a second dose, switch to hydrogen peroxide provided the animal is asymptomatic and there's good reason to believe the toxicant remains in the stomach.

Ahna G. Brutlag, DVM, MS, DABT, DABVT
AVMA Conf, 07:17

Discussing treatment of Cushing's with client

Once it has been established VETORYL Capsules as the drug of choice, this author talks to clients first about dosing. Although the label states starting with once-daily dosing, the author feels dogs exhibit regulation more quickly when started with dosing twice a day, beginning at around 1 mg/kg, twice a day. It is recognized that the cost of the pills increases when using the drug twice a day: two 30-mg capsules cost more than one 60-mg capsule. But in the long-term, you're probably changing the dose less, pursuing less testing, and probably seeing a cost advantage to the point where it all evens out—and we get the patient regulated faster. The author also discusses the side effects. Clients are sent home with a few doses of dexamethasone oral tablets at 0.1 mg/kg and they are told that if over the next few days the dog has an episode of vomiting or diarrhea, especially more than once, but is doing okay otherwise, they can call us to make sure they don't need to come into the hospital. If not, they can give the dexamethasone until the next appointment.

Patty Lathan, VMD, MS, DACVIM
Clinician's Forum, June 2019

Obesity

Obesity may be one of the easiest diseases to make an accurate diagnosis. It is accurately and repeatedly assessed using a body score system. This is teachable to nearly any owner, allowing them to tailor the feeding program to maintain a healthy weight regardless of diet

or lifestyle. A variety of therapeutic diets are available to treat and prevent obesity. There are three main concepts behind these diets; high fiber, high protein/low carbohydrates, and genetic expression manipulation. Regardless of the formulation, a prescription weight loss diet should be used to treat obesity because pet foods are balanced according to caloric intake. If you attempt to reduce a maintenance diet below 10%, you are ***no longer feeding a balanced diet***. Equally important to the management plan is a regular exercise program. The main benefit is that muscle activity reverses the insulin resistance. Reaching a target heart rate and maintaining the exercise for at least 20 minutes should be the goal.

Paul DeMars, DVM, DABVP
Keystone Vet Conf, Aug 2019

The FAST ultrasound

The focused assessment with sonography for trauma (FAST) ultrasound is a two-minute procedure that detects the presence of fluid in the abdominal cavity to allow for rapid therapeutic intervention, such as fluid resuscitation, abdominocentesis, cytology or clinicopathologic testing. This quick ultrasound method to determine "yes fluid/no fluid" is designed to be used by healthcare professionals with limited ultrasonographic training and is not designed for extensive examination of the abdomen. One of the benefits of the FAST examination is its ability to detect very small amounts of fluid. Typically, 5-25 ml/kg of fluid needs to be present to be removed by blind abdominocentesis; 10-20 ml/kg of fluid has to be present before it can be detected by fluid-wave assessment on physical examination; and approximately 9 ml/ kg of fluid needs to be present before it can be detected radiographically. But as little as 2 ml/kg of fluid can be detected on a FAST examination, allowing for rapid diagnosis and identification of underlying pathology. The FAST examination typically involves assessment of four sites of the abdomen: caudal to the xiphoid, cranial to the bladder, and the right- and left-dependent flank. The presence of fluid at any of these sites is considered positive.

Justine Lee, DVM, DACVECC, DABT
DVM News Magazine, 49:9

Patterns of respiration

The pattern of respiration and the presence or absence of audible noises is tremendously helpful in determining the anatomic location/possible cause of respiratory distress. If an animal has predominantly inspiratory distress that is noisy (i.e., stridor), the problem can immediately be localized to an upper airway obstruction. If an animal has predominantly inspiratory distress which is quiet, then the problem can be narrowed to either severe abdominal enlargement or a pleural cavity disorder restricting inspiration. Severe abdominal enlargement should be visually obvious. A pleural cavity disorder should have additional abnormalities detected on thoracic auscultation (e.g., decreased heart and lung sounds). If an animal has predominantly expiratory distress, the problem can be localized to the lower airways (intrathoracic trachea or bronchi). Mixed inspiratory and expiratory distress are seen with pulmonary parenchymal diseases (which may have adventitial lung sounds—e.g., crackles—on thoracic auscultation), pleural cavity disorders (often a rapid, shallow breathing pattern with low tidal volumes), pulmonary thromboembolism, and the look-a-like disorders.

Carol Reinero, DVM, DACVIM, PhD
VMX, 02:18

Coonhound paralysis

Acute polyradiculoneuritis (APN), or coonhound paralysis, causes sudden, progressive flaccid paralysis in dogs. APN has long been considered the canine model of an acute flaccid paralysis in humans known as Guillain-Barre syndrome (GBS). Both APN and GBS result from an immune-mediated attack on the ventral nerve roots, resulting in flaccid paralysis. GBS has been suspected to develop in genetically prone humans who have been exposed to a secondary environmental trigger. *Campylobacter* spp infection has been identified as a major trigger for GBS in humans. The aim of this study was to identify risk factors, including *Campylobacter* spp infection, for the development of APN. *Campylobacter jejuni* is a commensal organism of the chicken gut and one of the leading causes of GI upset in humans worldwide. Consumption of raw meat—including chicken—and breed (i.e., small vs large) were variables significantly associated with the development of APN in this study's population of dogs. Acute polyradiculoneuritis is an immune- mediated disease that likely has an environmental trigger. In this study, an association was noted between APN dogs and *Campylobacter* spp-positive fecal samples. Chickens are a natural reservoir of *Campylobacter* spp, which are commonly transmitted to other animals and humans from consumption of raw or undercooked chicken. To reduce the risk for *Campylobacter* spp infection, clinicians should advise owners against feeding raw chicken to dogs.

Heidi Barnes Heller, DVM, DACVIM
Clinician's Brief, Jan 2019

Role of carbohydrates in dogs

Summary of article. Despite the large number of dog owners who are averse to feeding carbohydrates to their pets, there is little evidence to support the contention that any negative health effects result from feeding diets that provide dietary carbohydrates in amounts (30% to 60% DM) commonly found in commercial extruded pet foods. There appears to be no association between dietary carbohydrate and the development of obesity, diabetes mellitus, cancer, or adverse food reactions in dogs. In fact, dogs appear to have evolved so that they can metabolize substantial quantities of carbohydrate. Increasing the amount of complex carbohydrates in diets results in the reduction of dietary protein or fat (or both), which may provide benefits for dogs with certain conditions, such as obesity, diabetes mellitus with concurrent pancreatitis, or adverse food reactions.

Alexandra Rankovic, MSc et al.
JAVMA, Sep 1, 2019

Treatment of chronic bronchitis (CB)

Oral corticosteroids are successful as a sole therapy in resolving the clinical signs in the majority of canine CB patients, and have historically been considered the mainstay of therapy in veterinary medicine. The short-acting oral corticosteroids (prednisone, prednisolone) should be started at anti-inflammatory doses (1-2mg/kg/day, divided BID), and tapered to the lowest effective dose. The dose reductions should initially be every 1-2 weeks until physiologic doses (0.25-0.5mg/kg/day) are attained, at which point the dose should be maintained for 2-4 weeks. In the event of a relapse during the steroid taper, the previous dose at which signs were controlled should be reinstituted, and the duration at that dose should be doubled prior to tapering.

Stephan A. Carey, DVM, PhD, DACVIM
MI Vet Conf, 01:18

Heartworm, two or three melarsomine injections?

"Are there ways to scale back the AHS (American Heartworm Society) protocol? For example, could I give two injections of melarsomine instead of the three injections recommended by the AHS?" Many veterinarians ask this question. The melarsomine product label outlines two different treatment programs—a two-injection protocol for Stage 1 and Stage 2 heartworm infections and a three-injection protocol for Stage 3 infection. The AHS protocol includes three injections of melarsomine, regardless of disease stage and symptomology. Why? Because two injections have been shown to kill approximately 90% of adult worms, while three injections have been demonstrated to kill 98% of worms. That is a significant difference. The AHS protocol is also designed to decrease the respiratory complications and mortality associated with heartworm treatment. Research shows that respiratory complications are 66% less with the AHS protocol than with the two-injection melarsomine protocol with no pretreatment. Once again, the numbers support the protocol. While the AHS treatment protocol takes time and can be expensive. This author has found it to be superior at decreasing complications, increasing patient survival and eliminating infection. Circumstances sometimes necessitate consideration of treatment alternatives, but the author believes it is his responsibility to present "best medicine" recommendations to all clients.

Christopher Rehm, DVM
Clinician's Brief, 03:19

A scenario for Lyme disease treatment

Situation: The dog is clinically normal, but has a positive 4-Dx Plus AND proteinuria or elevated UPCR (urine protein:creatinine ratio). If the dog is proteinuric, or has an elevated UPCR (and other causes of proteinuria have been ruled out), treat for one month and then recheck proteinuria. If still elevated, continue treatment until no longer proteinuric or UPCR normalized. Once normalized, the dog can be vaccinated.

Scott Stevenson, DVM, MSc
VMX Jan 2019

Brachycephalic, recovering from anesthesia

If extubation occurs earlier, due to swallowing or gagging on the tube, the grogginess and sedation that can still be present at this time can result in varying degrees of upper airway obstruction. If the obstruction is mild, oxygen can be administered. Reversal of sedative and opioid drugs can also be considered to increase level of alertness. If obstruction seems to be causing severe dyspnea, consideration should be given to administering corticosteroids at anti-inflammatory doses (e.g. dexamethasone 0.2-0.5 mg/kg, IV). If an oxygen cage is available, recovery may be continued in one. One caveat is that some patients can become quite warm inside one, which could increase respiratory effort and distress.

Phillip Lerche, BVSc, PhD, DACVAA
VMX, 02:18

Effects of early neuter

Puberty initiates a release of hormones that help close the epiphyseal plates on long bones. Absent this signal, the long bones grow beyond their intended length and interfere with the normal size and mechanical relationship between bone and joint. This abnormal relationship can lead to a variety of orthopedic issues, including an increased incidence of cranial cruciate ligament rupture, hip dysplasia and patellar luxation. This author can almost always predict whether a purebred dog was spayed or neutered prior to puberty based on conformational differences.

Michael Petty, DVM, CVPP, CVMA, CCRT, CAAPM
DVM News Magazine, 50:4

X-raying the heart

When reading rads, forget the heart but look at the pulmonary vasculature. It tells the whole story. Well-defined, curvilinear, non-congested arteries and veins mean it's likely not a heart problem. Fuzzy and tortuous vessels? Likely a heart problem. Put an ultrasound probe on the heart. For left heart failure to occur, the LA/AO ratio must be excessive. If it isn't, it's not a left-sided heart problem. This should be an immediate point-of-care approach that takes you to one set of meds versus the other set of meds to treat the patient initially. When evaluating cardiomegaly, know the body score of the patient first and look at the dorsal fat above the T-spine in the radiograph as a body score reference. Cardiomegaly from overlying thoracic fat is a common occurrence that leads to a normal echocardiogram. Overweight patients have overweight hearts masking as cardiomegaly. Go back to the vascular tip to confirm the theory.

Eric Lindquist DMV, DABVP, Cert. IVUSS
Veterinary Practice News, 02:18