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"Pearls" of Veterinary Medicine

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AT A GLANCE

Nasal tumors

Typically most tumors are located deep inside the nose, therefore surgery is not very beneficial. Most nasal tumors are in the turbinates. Some practitioners are trying ***therapies using NSAIDs or Palladia***, from Zoetis, which typically is indicated for the treatment of mast cell tumors but is thought to have some effectiveness in treating nasal tumors. This author often prescribes Palladia to pets of clients who cannot afford radiation therapy or who live so far away that radiation treatment may not make logistical sense.

Philip J. Bergman, DVM, MS, PhD, DACVIM
Vet Pract News, Apr 2016

Pancreatitis in cats

Pain is very common and often unrecognized in cats. Traditionally feline-friendly opioids are the cornerstone of pain control and, in this condition, you can consider maropitant a pain medication as well. Use maropitant and if you add a 5-HT3 blocker, such as ondansetron or dolasetron, you will get a synergistic effect on emesis. Even if you don't measure cobalamin and folate concentrations, it is recommended that cats with pancreatitis receive injectable B_{12}. Be aware that using antibiotics for treating pancreatitis is controversial. If you are going to use them, cepahlosporins are a good choice, as is amoxicillin (with or without enrofloxacin). If an appetite stimulant is needed, the author goes for mirtazapine. Don't discount using prednisolone in these cases because the inflammatory cascade plays an important part in chronic pancreatitis. They can be effective at stopping the process of fibrosis, which is beneficial in the long run. The author thinks that prednisolone administration has "a nice effect" on some of the cats that aren't really turning around during your initial treatment. Sometimes cats are on this medication regimen for a really long time, but they do get better. When they are eating and start to pick up on their weight, start to taper them off everything.

Elizabeth Colleran, DVM, MS, DAVBP
Vetted, Apr 2016

Mislabeling

Methylprednisolone acetate (**Depo Medrol**) is labeled for IM use in dogs and cats, but most experts do not recommend using it in dogs systemically due to high risk of adverse effects. Despite its recommendation for OA, glucocorticoids worsen the progression due to their catabolic effects on joint cartilage. It is labeled for use in severe infection, but is actually contraindicated in most infectious diseases. The use of glucocorticoids are not recommended for use in snakebites as there are no data supporting their use and may increase the risk of secondary infections (despite the label recommendations). **Procaine penicillin G / benzathine penicillin G.** Procaine penicillin G / benzathine penicillin G is labeled for use in dogs and cattle as an extended release formulation of penicillin due to the slow release of penicillin from the benzathine component. However the problem is that the release is so slow, it does not provide high enough plasma concentrations to extend the dosing interval for most infections except maybe uncomplicated urinary tract infections. Additionally, the labeled dose is much lower than currently recommended for penicillin and as such increases the risk for treatment failure and selection for resistant bacteria.

Butch KuKanich, DVM, PhD, DACVCP
CVC Kansas City, 08:15

Treating IBD in the cat

Not all clients can afford the optimum diagnostic workup with biopsy results confirming IBD. Therefore, clinicians may need to implement treatment measures if the cat is suspected to have IBD. **Key Points**. * Consider a dietary

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trial with an elimination (novel intact protein or hydrolysate) diet for 2 weeks. — If incomplete response to dietary therapy occurs, treat next (sequential therapy) with metronidazole as directed below. * Therapeutic trial with metronidazole (10-15 mg/kg, PO, twice a day) for 10-14 days may also be helpful in reducing mucosal inflammation through multiple mechanisms. Consider abdominal ultrasonography with focus on architecture of the GI tract layers; some cats with LL have muscularis thickening, as compared to mucosal thickening in cats with IBD. * Cats that fail to respond to sequential therapy with diet and metronidazole may do better on a therapeutic trial of prednisolone as a more potent immunomodulator. * Cats with cachexia and a history of watery, small bowel diarrhea should be considered hypocobalaminemic and treated with parenteral cobalamin supplementation. * Cats with large bowel signs (i.e., increased bowel movements, tenesmus. blood/mucus in feces) alone or with enterocolitis may benefit from dietary fiber supplementation (e.g., psyllium at one-quarter teaspoon per meal) to reduce colonic inflammation.

Albert E. Jergens, DVM, PhD, DACVIM
Plumbs Ther, 2:5

Treating dysphoria

Dysphoria should never be assumed in the geriatric patient until pain has been ruled out. If dysphoria is confirmed, very low doses of acepromazine (0.01-0.04 mg/kg) can be titrated to effect up to a maximum of 1 mg total. A micro-mini dose of dexmedetomidine (0.5-1 µg/kg, IV) is another option.

Courtney Baetge, DVM, DACVAA
87th West Vet Conf

Handling of snakebite wounds

The area of the puncture should be gently clipped, cleaned, and kept dry. The circumference of the swelling should be measured and recorded every 15 minutes to monitor for progression and need for antivenom administration. If the wound necroses, the area should be treated like an open wound until a healthy granulation bed forms. Opioid therapy is recommended for pain management, but should be withheld if neurologic signs are present to avoid hindering neurologic assessment. Routine use of corticosteroids in snakebite patients should be questioned, as human snakebite studies have failed to document benefits of their use aside from anaphylactic and delayed hypersensitivity reactions secondary to antivenom administration. Use of prophylactic antimicrobials is also not recommended since the incidence of wound infection in snake envenomations has been reported as <1%. The most important treatments for snakebite victims includes intravenous crystalloids to maintain normal blood pressure, timely-administration of an adequate amount of antivenom to neutralize venom, and providing analgesia without impairing mental assessment. Prior vaccination with C. atrox toxoid rattlesnake vaccination (Red Rock Biologics) may slow systemic venom absorption and decrease the severity of clinical signs, but it's efficacy is currently unknown and vaccinated patients still require immediate medical treatment if bitten.

Eileen Kennedy, DVM, DACVECC
So Cal VMA Pulse, Jun 2016

Topical treatment of pyoderma

Bleach soaks are being used as a treatment option in some cases of multidrug- or methicillin-resistant infections. When performed, soaks are recommended 2-4 times a week for 10-20 minutes using a 0.06% to 0.19% bleach solution. Dilutions at the higher end of this concentration range are more likely to result in skin irritation. After soaking, bathing with a moisturizing or humectant shampoo is recommended to help prevent skin irritation and bleaching of the hair coat or household items. In addition to diluted household bleach, veterinary-marketed shampoos containing sodium hypochlorite as an active ingredient are available.

Darren Berger, DVM, DACVD
NAVC Clin Brf, Jun 2016

Treating Demodex-otitis in the cat

Topical ivermectin – 1 part injectable ivermectin (10 mg/ml) to 9 parts propylene glycol – treat once every other day. Systemic ivermectin per os – 0.3 mg/kg, once daily or once every other day. Amitraz (Mitaban, Pharmacia and Upjohn; 19.9%) – 1 ml in 30 ml of mineral oil or propylene glycol. Treat once every other day. Make up new solution once every 2 weeks. Topical Tresaderm – q24 hrs or BID.

Wayne Rosenkrantz, DVM, DACVD
West Vet Conf, 02:14

Drugs affected by P-glycoprotein dysfunction

Clients with pets affected by the *MDR1* mutation may be apprehensive about giving *any* drug to their pet. This reluctance may be caused by accessing false information. The information cited on some websites is unreliable and inaccurate. For example, based on in vitro studies of drugs shown to be transported by P-glycoprotein or on studies conducted in rodents or humans (not in dogs and cats), some websites may falsely cite drugs as being unsafe to use in animals with P-glycoprotein dysfunction. Most of the nearly 100 drugs that could fit criteria cited in these studies do not cause toxicity in animals with P-glycoprotein dysfunction. Many (e.g., cephalosporins, penicillins, tetracyclines, antihistamines), have one or more characteristics that allow for safe use in animals with P-glycoprotein dysfunction. Metronidazole is inappropriately listed by many websites as a drug that should not be used in animals with P-glycoprotein dysfunction. Although metronidazole can cause neurologic toxicity, it is not transported by P-glycoprotein. Rather, the risk for toxicity increases with increased dose and duration of therapy and is not related to P-glycoprotein function.

Katrina Mealey, DVM, PhD, DACVIM, DACVCP
NAVC Clin Brf, May 2016

Otitis, using topical therapy

When topical medications are prescribed, owners must be educated about how to apply them. This should include a demonstration by the veterinarian or a technician, followed by the owner instilling the medication in the presence of the veterinarian or technician. Owners should massage ears for 15-30 seconds after instilling medication and should use the proper amount of medication. Once-daily treatment is generally sufficient for most cases of otitis, although severe infections may benefit from twice daily treatment. Treatment should be continued for 7-14 days after there is no clinical or cytologic evidence of active disease. Therefore, although in conflict with label instructions on most commercial otic products, this author recommends a ***minimum treatment time (with topical therapy) of 30 days***. This extended treatment time is necessary to completely clear the infection. Shorter treatment times often decrease the severity of infection and result in clinical improvement without completely eliminating the infectious agents.

James O. Noxon, DVM, DACVIM (SAIM)
West Vet Conf, 02:14

Vitiligo

Vitiligo is thought to involve autoimmunity to melanocytes. Breeds predisposed include the Belgian Tervuren, German Shepherd, Rottweiler and Doberman Pinscher. Non-inflammatory asymptomatic depigmentation is most commonly noted on the planum, lips, muzzle, and buccal mucosa. There may be focal or widespread leukotrichia and/or depigmentation of the nails. The natural course of the disease may wax and wane. References generally state that there is no therapy but for preventing/managing solar damage. However, there are anecdotal reports of using a combination of oral folic acid, Vitamin C and injectable Vitamin B12. An 80 lb dog was given 1 mg folic acid PO, BID, 50 µg B12, IM, every 14 days and 500 mg Vitamin C, PO, BID. Others have reported some success with 10 drops of stock solution of an alcoholic extract of blueberry. This author has had some success in treating mildly inflammatory forms of the disease with the combination of tetracycline and niacinamide or oral glucocorticoids. This may suggest that topical tacrolimus may be of benefit in some individuals and oral cyclosporine has been tried in some individuals.

Sonja Zabel, DVM, MS, Dip. ACVD
AVMA Conf, 07:15

Seizures, single or multiple drugs?

Use of combination therapy appears to be popular in veterinary medicine, based on therapeutic drug monitoring information in the author's laboratory. Although combination therapy is a reasonable approach for control of seizures in patients that fail to reasonably respond to first choice anticonvulsants, many of these patients are on two or more drugs, each of which is in the sub to low therapeutic range. The American Epilepsy Society notes that most humans can be controlled with single drug therapy and that ***higher concentrations of a single drug is preferred to lower concentrations of multiple drugs***. Single therapy should be considered prudent for several reasons. The most obvious is avoidance of side effects (the combined side effects of a drug might, like efficacy, be worse than either drug by itself), fewer drug interactions, better owner compliance and reduced cost due to the need for more than one prescription and monitoring more than one drug. No drug therapy is likely to be innocuous. Drugs that affect the CNS may be problematic because of the sophisticated mechanisms which exist to minimize the effects of CNS drugs. In the author's opinion, because the CNS does not want drugs in the CNS, an attempt should be made to respect the body's attempt to limit exposure of the brain to drugs. Accordingly, the author recommends that single drug therapy be targeted and combination therapy be instituted only in patients that have failed initial therapy.

Dawn M. Boothe, DVM, PhD, DACVIM (SAIM), DACVCP
West Vet Conf, 02:14

Administering antivenom

A definitive dose of antivenom has not been established in veterinary medicine. Each batch of antivenom may have different antigen-binding abilities. The author recommends using objective measurements, such as coagulation times and clinical parameters to guide antivenom administration. Severe envenomations should receive 1-2 vials upfront, with reassessment at 30 minutes to one hour after administration. The antivenom should be administered as a rapid infusion, over 30 minutes. There is no peer-reviewed literature suggesting that the rattlesnake vaccine is effective, or lessens the severity of envenomation. When giving antivenom, it is not necessary to routinely pre-treat patients with diphenhydramine. Start the infusion as you would any other transfusion, and monitor for signs of allergic reaction. Temporarily stop the infusion and treat accordingly if a reaction occurs.

Raegan J Wells DVM, MS, DACVECC
AVMA Conf, 07:14

Guidelines for feline hyperthyroidism

The American Association of Feline Practitioners has released new Guidelines for the Management of Feline Hyperthyroidism (FHT). The hope is that by using these guidelines, veterinarians will be able to diagnose FHT long before the cat becomes the classic scrawny, unkempt patient with a mass on its neck. The Guidelines explain FHT as a primary disease process with compounding factors, and provide a concise explanation of what is known to be true about the etiology and pathogenesis of the disease. The Guidelines also; a) distill the current research literature into simple recommendations for testing sequences that will avoid misdiagnosis and separate an FHT diagnosis into six clinical categories with associated management strategies; b) emphasizes the importance of treating all hyperthyroid cats, regardless

of comorbidities, and outline the currently available treatments for the disease; c) explains how to monitor the treated cat to help avoid exacerbating comorbid diseases; dispels some of the myths surrounding certain aspects of FHT and replaces them with an evidence-based narrative that veterinarians and their practice teams can apply to feline patients and communicate to their owners. A supplementary brochure and a client handout also are available. The guidelines and client materials are at www.catvets.com/hyperthyroidism.

JAVMA, Jun 15, 2016

Feline thromboembolism, clopidogrel

Antithrombotic (preventing thrombus extension) therapy can be further broken down into antiplatelet therapy (aspirin, clopidogrel) and anticoagulant therapy (heparin, warfarin, Xa inhibitors). Aspirin was the first platelet antagonist evaluated in cats. Aspirin prevents the formation of thromboxane A2, responsible for platelet aggregation and vasoconstriction. No difference has been appreciated between low dose (5 mg/cat q 72 hours) and high dose (>40 mg/cat q 24 hours) aspirin in preventing feline arterial thromboembolism (FATE). The most common side effect of aspirin administration is GI irritation. Clopidogrel inhibits both primary and secondary platelet aggregation by antagonizing platelet ADP receptors. Clopidogrel has been reported at dosages ranging from 18.75-75 mg/cat q 24 hours. Clopidogrel is bitter tasting and administering it in a gelatin capsule or with food may facilitate patient compliance. The recently published FAT-CAT trial demonstrated the ***superiority of clopidogrel*** in limiting recurrence rate of FATE when compared to aspirin. Bleeding was not reported.

Sarah Zimmerman, DVM, DACVIM
So Cal VMA Pulse, Jun 2016

Treating "excitement urination"

Heterocyclic or tricyclic antidepressants (TCA) have gained routine use in veterinary medicine as anxiolytic agents. Most pediatric concerns can be addressed with owner education and behavior modification. Several unique scenarios however warrant mentioning. Excitement urination is not an uncommon concern for owners during urethral sphincter development in puppies. Physical punishers can convert this to submissive urination problems that may continue beyond the pediatric months. Amitriptyline is a medication used for bed wetting children and can assist owners with ***training calmer greeting behaviors*** while increasing sphincter tone.

Steve Thompson, DVM, DABVP
West Vet Conf, 02:14

Spaying rabbits

Generally very similar to a cat spay. Approach by ventral midline incision. Make a 1-2 inch incision between umbilicus and pubis. Make incision closer to umbilicus as ovarian ligaments are not 'stretchable'. Cervices will be visible immediately in the incision. Do NOT use spay hooks of any kind. Avoid manipulation of GI tract at all costs. Follow uterine horn cranially to ovary. Ovary is extremely small in relation to uterine horn, and yellow. Left ovary is close to kidney. Identify ovarian artery and ligate immediately. Hemoclips will speed procedure up. Bluntly dissect along uterine horn. Radiocauthery can be used on smaller uterine vessels. Repeat procedure on other side. In young animals transection of uterine horn can be made cranial to cervix. Will leave cervix behind and may provide an additional barrier against bacterial contamination from vagina. In older animals remove cervices completely. Transection is performed in vagina (ovario-vagino-hysterectomy). Reduces the chance of a subclinical uterine cancer in remnant tissue. Close incision in a 3-layer fashion. Use an intradermal suture pattern.

Jörg Mayer, DVM, MSc, DABVP, DECZM
61st HI VMA Conf, 11:14

Feline inappropriate elimination

The smell of urine will attract the cat so it is imperative that it be removed from carpet, other flooring, furniture, and bedding. If the item is washable, do so with hot water and bleach if possible. It is important to find all of the areas in carpet; this can be accomplished with the use of a black light. Most owners find more areas than they were aware of. Treating the pad is paramount. To do so, pour 1/2 cup of water on the area and spray the carpet with Zero Odor Pet (zeroodorpet.com); alternatively, pour 1/2 cup of water on the area then inject (with a syringe and needle) about 5 ml of Zero Odor Pet into the pad. This is the most effective odor removal product that this author has used. Zero Odor Pet can also be used in and around the litter box to remove lingering odors.

Gary D. Norsworthy, DVM, DABVP (Feline)
West Vet Conf, 02:04

Interpreting the WBC

As a general rule, when a benchtop hematology analyzer yields values outside the reference interval or the values are flagged, the clinician or a technician should carefully examine the dot plot and a blood smear. In some breeds of dogs (Belgian Tervuren, Greyhound) the WBC and neutrophil counts are frequently below the RI for the species, thus resulting in an ***erroneous diagnosis*** of leukopenia and neutropenia in an otherwise healthy dog. This should be kept in mind in dogs undergoing chemotherapy, since treatment delays based on a "low WBC or neutrophil" count (normal for the breeds) have a detrimental effect on the patient. A differential WBC count may be reported in either relative (percentages) or absolute numbers (number of cells per microliter). However, the absolute leukocyte numbers, not the percentages, should always be evaluated because the latter may be misleading, particularly if the WBC count is very high or very low.

C. Guillermo Couto, DVM, DACVIM
WV VMA Conf, Apr 2016