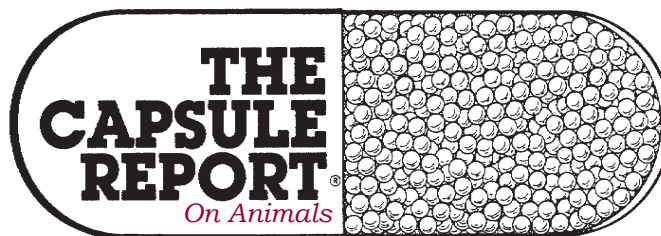


A digest of practical and clinically relevant information from this month's journals and proceedings



Small Animal/Exotic Edition

Our 30th Year

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Tris-EDTA

Third generation Tris-EDTA (Tricide) is a chelating agent that removes divalent cations from the outer membrane of bacteria and fungi, causing physical damage to ("poking holes" in) the membrane. Studies have shown that Tris-EDTA is also effective in damaging the cell walls of yeast which is useful when treating Malassezia otitis. It is completely nonirritating, is extremely stable, and can be stored for extended periods. Tris-EDTA in combination with an appropriate antimicrobial can greatly increase efficacy, even against resistant microorganisms. It can be mixed with many injectable antimicrobial drugs and then used topically. At the time of use, the appropriate antibiotic or antifungal can be added (e.g. 0.5-2 mg enrofloxacin, amikacin, or gentamicin added per ml Tricide; 0.1-0.5 mg fluconazole or miconazole/ml Tricide). In this manner, it can be used to topically treat resistant infections or areas where more medication application (such as flushing deep wounds) is needed.

*Patrick Hensel, Dr.med.vet, Dip ACVD
Vet Med, Dec 2011*

End of life care

What purpose do we serve in distinguishing end of life (EoL) as its own stage? Contemporary veterinarians and staff require sensitivity training to provide psychosocial emotional support services on the front line in practice. Compassionate communication is needed to help clients get through difficult days on that bumpy EoL road toward pet death, pet loss and bereavement. Skills are required to provide emotional support for anticipatory grief, maladaptive grief, depression and suicidal tendencies. Knowing when to refer clients to counseling or referring them to the Association for Pet Loss and Bereavement (www.aplb.com) is important. These skills, palliation of symptoms and hospice services leading to the gift of euthanasia that assures a peaceful and painless passing mark the keystone services that differentiate EoL care from other stages of life care.

*Alice Villalobos, DVM, Dip PNAP
Vet Pract News, Jan 2012*

Avian wounds

Create a fast, hard fixative using super glue and baking soda. Dr. Pat Redig reported mixing cyanoacrylate adhesive (also known as 'super glue') or other thin modeling cyanoacrylate with baking soda. Simply apply baking soda over a desired area and then add a drop of cyanoacrylate. The combination rapidly forms a firm adhesive that can be shaped with a grinding tool and colored as needed. Additional layers can also be added as needed. This works great for filling in beak defects and building beak prostheses. The simplest distracting device is to place a tape tag over a bandage that the bird can otherwise reach and damage. Butterfly the central portion of a tape strip leaving two sticky ends. The sticky ends are then applied to the bird's bandage leaving a tape tag sticking out. Until the birds get use to the bandage, they often only chew on the tag if at all.

*M. Scott Echols, DVM, Dip ABVP
N Amer Vet Conf Procd, Vol 22*

Cleaning cats' ears

There are several signs that are normal in the cat as concerns their ears, but they may be assessed as abnormal by the owner and the cat presented for that abnormality.

Many cats, especially orange tabby cats will have a large amount of waxy exudate as a normal occurrence. If that wax is seen as abnormal and cleaning is elected, often the amount of waxy exudate produced is increased. This can then be a vicious cycle. **Leave those ears alone.** Many cats when scratched and rubbed on the top of their head and around their ears will respond with excessive head shaking. This does not imply ear disease necessarily. Leave those ears alone. Cats under sedation for other procedures often have their ears cleaned without having any previous complaint from the owner concerning ear disease or any clinical signs that there is an abnormality. In spite of a normal/intact tympanic membrane, these cat may wake up from anesthesia/sedation with vestibular signs that include head tilt and nystagmus. Fortunately, the signs are usually temporary. Don't be tempted to clean these ears unless

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The Capsule Report.

there is a reason. Leave those ears alone. So... in most cases, leave those ears alone.

*Sandra R. Merchant, DVM, Dip ACVD
SW Vet Symp Procd, 09:09*

Gonadectomy is sporting dogs

A controversial mechanism of injury in sporting dogs is through early spay or neuter because of loss of sex hormones during growth and development. Early sterilization can result in longer leg development in dogs and an increased risk of hip dysplasia and cranial cruciate ligament injury. Delaying gonadectomy in larger breed dogs may reduce the incidence of some orthopedic diseases including hip osteoarthritis, cruciate ligament disease, and other problems related to delayed growth plate closure in sex hormone-deficient puppies. Because of these risks, this author does not recommend gonadectomy before 6 months of age in sporting dogs. In all large- and giant-breed dogs, it is recommended waiting to perform surgery until they are 10-12 months of age.

*Wendy Baltzer, DVM, PhD, Dip ACVS
Vet Med, Apr 2012*

Reducing pain during local anesthetic injection

Several tricks have been developed to reduce the pain during the injection of local anesthetics. 1) Buffer the local anesthetic: common local anesthetics used in veterinary medicine are acid. The recommendation is to add 1 part bicarbonate in 10-20 parts of local anesthetic. However, this author normally adds 0.01 ml of bicarbonate (1 mEq/ml) to 1 ml of 2% lidocaine to increase the pH from 4-6 to 7. In the author's experience, local anesthetic pH buffering does not add much clinical advantages to the technique. 2) Local anesthetic temperature: injection of cold or excessively warm substances is painful. Thus, warming up the local anesthetic to body temperature will decrease the injection response. 3) Topical anesthetics: when time allows, the use of topical anesthetics will decrease pain during injection or any other cutaneous stimuli. Topical anesthetics such as EMLA cream or 5% lidocaine gel will numb the skin area after 30 minutes of direct contact. Soak a gauze with topical anesthetic and wrap it around the targeted skin area. After 30 minutes, unwrap the topical anesthetic, prepare the area aseptically and either inject or place a catheter with little complaint or response. Careful when using topical anesthetics on mucous membranes or open wounds because rapid absorption may predispose to systemic toxicity. 4) Needle size: pain during injection correlates with the needle size. The bigger the needle the more painful it will be.

*Pedro Boscan, DVM, MSc, PhD, Dip ACVA
71st CO St U CVM Vet Conf*

Idiopathic cystitis, environmental factors

Multi-modality environmental modification (MEMO) has been described and appears to help many cats with idiopathic cystitis. This includes such things as having "1+1" of litter boxes, food bowls, and water bowls available; in other words, one of each for each cat plus an extra one. Additionally, minimizing stress and environmental enrichment significantly decreased episodes and magnitude of episodes. Further information can be found at THE INDOOR CAT INITIATIVE (<http://vet.osu.edu/indoorcat.htm>).

*Joe Bartges DVM, PhD, Dip ACVIM
WA St VMA Conf Procd, 10:10*

Myths about opioid use

Myth 1: *Using opioids will result in respiratory depression.* Truth: This is much less of a problem in our veterinary patients than in humans. In many cases, in fact, ventilation improves when pain is diminished. The risk for respiratory depression is dose-dependent and is most often seen at higher doses and with rapid intravenous administration. **Myth 2:** *Opioids should not be used in cats.* Truth: The occurrence of adverse effects in cats is highly dose-dependent. In general, the appropriate feline dose is about one-tenth the dose in dogs. **Myth 3:** *Postoperative constipation and nausea are problems.* Truth: Persistent nausea and constipation are common problems seen with opioid administration in people. With current approaches to opioid use, dogs and cats appear to experience these complications far less frequently than humans do.

*Mark E. Epstein, DVM, Dip ABVP
Vet Med, Dec 2011*

Heartworm treatment

The age of the worm plays a role in how certain treatments will combat the disease. A heartworm-positive dog can have 1-month-old to 7-year-old heartworms. Periods of susceptibility to macrocyclic lactones and melarsomine exist, creating a treatment gap. There are times when *D immitis* is not considered to be susceptible to either treatment. AHS guidelines say the gap can be eliminated by administering a macrocyclic lactone preventive for 2-3 months before administering melarsomine. This treatment will eliminate migrating larvae less than 2 months old and allow worms 2-4 months old to reach an age at which they have been shown to be susceptible to melarsomine. The use of doxycycline in combination with ivermectin or other heartworm preventive drugs has been shown to reduce pathology, the number of adult worms and the infective potential of microfilaria in dogs. In addition to the obvious discomfort and physical harm these parasites cause, owners must keep their pets on restricted activity for long stretches of time. This critical part of treatment is almost never fully followed.

*Tom Nelson, DVM
Vet Pract News, May 2012*

Diazepam for seizures

It is important to note that pentobarbital has not been shown to be an effective drug to stop seizure activ-

ity (as shown on EEC) and therefore pentobarbital may only result in sedation. Although barbiturate induced sedation may result in the appearance of seizure cessation, seizure activity may still be active intracranially. Due to an increased risk of thrombophlebitis with intravenous diazepam therapy, the following diazepam dilution has been advocated. Concentrations of diazepam should not exceed 0.4 mg/ml/hr. Exceeding this concentration can still place the pet at high risk of thrombophlebitis. Infusions of diazepam or propofol are generally weaned rather than suddenly discontinued, to reduce the risk of increased seizure activity. As a general rule of thumb, the drug is decreased by 50% every 12 hours until the dose is below the lowest therapeutic dose. For example, the dose of diazepam is 0.1-0.5 mg/kg/hr. Patients are reduced by 50% every 12 hours until the concentration is less than 0.1 mg/kg/hr at which time the infusion can be discontinued.

*Heidi L. Barnes, DVM, Dip ACVIM
125th IL VMA Conf Procd*

Sedation, >7 years old

Fractious dog: Ace, 0.05 mg/kg + opioid (butorphanol, 0.2-0.4 mg/kg or morphine, 0.2 mg/kg), IM. Painful dog: Opioid (butorphanol, 0.2-0.4 mg/kg or morphine, 0.2 mg/kg) + midazolam, 0.2 mg/kg +/- ketamine, 5-10 mg/kg, IM. For the fractious cat: Ace, 0.05 mg/kg + ketamine, 3-5 mg/kg + opioid (butorphanol, 0.2 mg/kg or oxy, 0.05-0.1 mg/kg), IM. For the painful cat: opioid (butorphanol, 0.2-0.4 mg/kg or morphine, 0.2 mg/kg) + midazolam, 0.2 mg/kg +/- ketamine, 3-5 mg/kg, IM.

*Meghan E. Herron, DVM, DACVB
IAMS/OSU An Beh Symp Procd, Oct 2011*

Methicillin-resistant Staph

"I have a dog with pyoderma that was responding to cefpodoxime but it stopped working. I switched to cephalexin but that does not seem to be working either. What should I use next?" Based on this history, this author is concerned about the possibility that a methicillin-resistant staphylococcal infection has developed. The best approach would be to find out if that is the case by performing an aerobic bacterial culture and susceptibility. If it is methicillin-resistant, be sure that clindamycin, chloramphenicol, amikacin, rifampin and moxifloxacin are included in the antibiotics tested. If culture and susceptibility is not an option or while awaiting C/S results, then the author suggests trying clindamycin at 11 mg/kg, PO, q12h. If this does not work then a culture and/or biopsy is mandatory. It is also important to start or intensify topical therapy in this scenario with twice weekly antibacterial shampoos and a leave-on conditioner or spray. This author currently uses 3%-4% chlorhexidine-containing products as treatments of choice with the sprays being administered on the days when the shampoos are not given. Other options, which are being utilized by dermatologists, include topically applied 1% amikacin sprays twice a day and an oxychlorine spray (Vetericyn VF,

Innovacyn) administered once a day.

*Kenneth W. Kwochka, DVM, Dip ACVD
So Cal VMA Sem, Oct 2011*

Wound care ideas

To immobilize wound repair sites in the axillary or inguinal area of cats, place a box with a hole in the side or a large paper sack in the cage. Cats get in these and sit with all joints flexed; thus, immobilizing them. Similarly, "cage" (dog and cat) or "aquarium" (snake) bandages can be used when it will be difficult to bandage large body areas. Medication is placed on the wound(s) and the animal is placed in the cage/aquarium with no bedding. Medication will get on the container sides as the animal moves about and it serves as a "bandage" to keep medication on the wound(s). To remove the last layer of a bandage that is adhered to a wound, wet it with some warm 2% lidocaine shortly before removal.

*Steven F. Swaim, DVM, MS
N Amer Vet Conf Procd, Vol 22*

FIC questionnaire

Because FIC is typically secondary to stress, it is vital to carefully discuss the history for cats with lower urinary tract signs. Pet owners should be asked about recent environmental or household changes, a change in the number of animals or people in the home, litter box changes (i.e., location, number, substrate), and dietary changes. Current environmental enrichment activities should be part of the discussion as well. For a sample owner questionnaire for treatment considerations, visit <http://vet.osu.edu/vmc/ici-survey>.

*Nicole Smee, DVM and Gregory F. Grauer, DVM, MS
NAVC Clin Brf, 9:9*

Pseudomonas otitis

One very important key to successful treatment of Pseudomonas otitis is the concurrent use of glucocorticoids, preferably systemically. Glucocorticoids reduce the pain that is associated with this condition and thus will make application of topical medications easier and more effective. In addition, glucocorticoids reduce the inflammation, which also reduces the discomfort and swelling that accompanies this condition. Patients with Pseudomonas infections tend to get other secondary infections, most often yeast infections, immediately after the Pseudomonas is cleared. This is probably because application of topical medications to clear the bacterial infection tends to leave the inflamed ear moist, and thus more susceptible to yeast infections. Therefore, this author recommends *prophylactic anti-yeast* therapy be initiated as soon as the bacterial component of the otitis is controlled.

*James O. Noxon, DVM, Dip ACVIM
N Amer Vet Conf Procd, Vol 22*

Cat years vs. human years

Owners often ask us to compare cat years to human years. A figure that is commonly used is 7 cat years for each calendar year. However, this rule of thumb is not completely accurate. Feline development through puberty to young adulthood is accomplished over a period of about 18 to 24 months rather than 21 years as in humans. Thus, the cat's first calendar year is more like 16 human years and the cat's second calendar year is more like 5-7 human years (up to an equivalent age of 21 to 23 years in humans). After that, add about 4 years for each calendar year of cat life. Thus, an 8-year-old cat is like a 46 year old person. A ten-year-old cat would be 54, a 15 year old cat 74, and a 20 year old cat, 94 cat years of age. Experts differ as to when one would consider an aging cat to be geriatric, but you can select your own cut-off based on this comparison to the equivalent age in humans.

*Alice M. Wolf, DVM, Dip ACVIM
OR VMA Conf Procd, 03:07*

Preparation of dam for C-section

Shaving the dam prior to induction of anesthesia reduces the time fetuses are exposed to anesthetic agents. Maternal oxygenation for 10-15 minutes before anesthesia induction (with either a mask or a nasal tube) reduces hypoxia during both intubation and induction/maintenance of anesthesia. It also improves surfactant production in neonates. Many dams in distress are dehydrated. Establishing an IV line for fluid will help maintain blood pressure and prevent the effects of blood loss. It is the author's experience that, particularly for elective C-sections, an IV injection of a short-acting corticosteroid such as methylprednisolone 2-8 hours before surgery stimulates progesterone decrease, prevents shock development, and stimulates surfactant production in neonates, making the success rate significantly higher. The use of methylprednisolone is essential, particularly if the timing of the C-section is approximate. Since timing can be incorrect due to peculiarities of the dog's cycle, particularly if progesterone plasma concentration has not been monitored to evaluate timing, methylprednisolone may be advisable in most cases.

*Karine J. Onclin, DVM, PhD and John P. Verstegen III, DVM
NAVC Clin Brf, 6:5*

Antibiotic choices for neonatal kittens

Amoxicillin: 6-20 mg/kg, BID, PO. Amoxicillin + clavulanic acid: 12.5-25 mg/kg, BID, PO. Cephalexin, cefazolin: 10-30 mg/kg, BID, PO. Ampicillin: 25 mg/kg, TID, IV, IO, IM. Ceftiofur: 2.5 mg/kg, BID, SQ; max 5 days. Enrofloxacin: 2.5-5 mg/kg, once daily, SQ, IV.

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

Puppy socialization

The most sensitive period for successful socialization is during the first 3-4 months of life. The experiences the pet has during this time will have a major

influence on its developing personality and how well it gets along with people and other animals when it grows into adulthood. It is very important for puppies to have frequent, positive social experiences during these early months in order to prevent asocial behavior, fear and biting. It is important for every puppy to meet as many new people as possible in a wide variety of situations. It can be beneficial to ask each person who meets the puppy to give the puppy a biscuit. This will teach the puppy to look forward to meeting people and discourage hand shyness since the puppy will learn to associate new friends and an outstretched hand with something positive. Once the puppy has learned to sit on command, the family should have each new friend ask it to sit before giving the biscuit. This teaches a proper greeting and will make the puppy less likely to jump up on people. The family should make certain that the pet has the opportunity to meet and receive biscuits from a wide variety of people of all ages, appearances and both sexes during the early formative months. Every effort must be made to see that the young pup has plenty of opportunities to learn about children. Kids can seem like a completely different species to dogs since they walk, act, and talk much differently than adults. Puppies that grow up without meeting children when they are young may never feel comfortable around them when they become adults.

*Wayne Hunthausen, DVM
Cent Vet Conf Procd, 09:07*

Famciclovir for FHV-1

FHV-1 infection is common and lifelong latency is established in most cats. Reactivation of latent disease, although not common, may occur without obvious cause or clinical evidence. Famciclovir as an adjunct to topical therapy may be particularly helpful in patients with severe herpetic disease, in patients with systemic disease (respiratory or dermatologic), and in patients that are difficult to treat topically. Stress can be a major factor in the initiation and persistence of clinical signs. Famciclovir is better tolerated in the short-term by most cats than acyclovir. It is typically administered to cats at 62.5 mg/cat, PO, q8-12h or 125 mg/cat, PO, q24h, and to kittens at 15.625-31.25 mg/kitten, PO, q24h. Famciclovir can mitigate clinical signs and viral replication during an active bout of disease, especially in cats that are difficult to treat topically, have systemic disease, or have particularly severe clinical signs. A typical course of therapy is no longer than 2 to 3 weeks.

*Caryn E. Plummer, DVM, Dip ACVO
NAVC Clin Brf, Jan 2012*