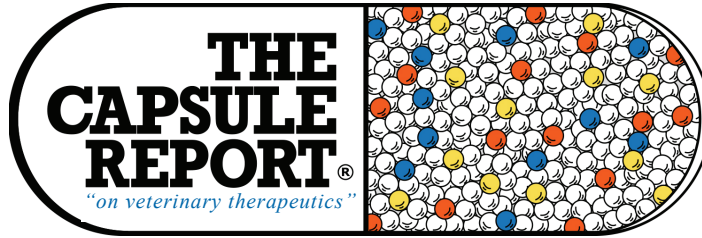


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Congestive heart failure (CHF)

Parenteral fluids are provided only as a vehicle for drugs such as dobutamine, sodium nitroprusside, and lidocaine. In terms of hydration after diuretics, nearly every dog and most cats will drink once they can ventilate easily. In the author's opinion, a central venous line is neither needed nor worth the struggle and will not accurately predict the pulmonary capillary wedge pressure in left sided CHF. Volume replacement - even "maintenance" fluid therapy - is most always the **wrong initial treatment** for CHF. Theoretically, a Swan-Ganz thermodilution catheter can be floated to measure occlusion (wedge) pressure, pulmonary artery pressures, and cardiac output. However, few practices are equipped for this instrumentation or bother, and there is no compelling evidence that such monitoring improves the outcome in dogs or cats.

*John D. Bonagura, DVM, DACVIM
23rd Int Vet Emergency & Critical Care Sym, 09:17*

Dangers of dewclaw removal

Many veterinarians perform this procedure on puppies based on the desire of either the breeder to improve

aesthetics or the owner to guard against some possible future trauma that might injure the dewclaw. Yet those in the agility/sporting world not only understand the importance of this digit during athletic events, but they also know that osteoarthritis in the carpal joint develops in many dogs that have this digit removed as a puppy. The dewclaw is attached to and helps stabilize many of the carpal tendons and ligaments. Without this stabilization, **carpal osteoarthritis might ensue**, especially in canine athletes.

*Michael Petty, DVM, CVPP, CVMA, CCRT, CAAPM
DVM News Magazine, Apr 2019*

Avoid bleach in a fear-free practice

You know what you need to do with bleach? Stop buying it to clean anything in your hospital. One whiff of bleach and many other harsh chemicals can make a pet go instantly **nose-blind** for seven days. They will still be seen sniffing, but these chemicals have destroyed their olfactory neurons and they won't regenerate for a full week. So, pets who rely so much on smell for cues, will now be nose-blind - a huge source of fear, anxiety, stress. You need to switch to the same cleaners that three-quarters of human dentists and over half of human hospitals use to eliminate chemical and pheromonal pollution. Start cleaning with **accelerated hydrogen peroxide**, which goes under the trade name Rescue in the veterinary channel. This amazing product is a killing machine-99.9% kill of pathogens, including parvo, in 15 seconds of contact time - plus it breaks down into water and oxygen.

*Marty Becker, DVM
CVC San Diego, 08:17*

Suture pattern in intestinal anastomosis

Is a continuous pattern safe? Debra Weisman, DVM, DACVS, and her colleagues authored a now-classic study in which showed that a simple continuous suture pattern helps decrease mucosal eversion and provides more accurate apposition of the tissue layers when suturing the small intestine after a resection and anastomosis (R&A). Additional benefits include a quicker closure, shorter anesthesia time, and significantly less foreign material (i.e. sutures) placed in the patient. In order to avoid a purse-string effect if the suture is too tight, two separate sutures are used rather than one. One knot is preplaced at the mesenteric border and one at the anti-mesenteric border. A 3-to-4- cm-long strand of suture material (polydiox-

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none) is tagged with a hemostat and used as a stay suture. The continuous suture is started on the mesenteric side, along one side of the intestine, up to the knot on the anti-mesenteric side. The intestine is flipped over. The second continuous suture is now

placed on the opposite side of the intestine, down to the mesenteric side. Tissue bites are full thickness. They are placed about 3 mm apart and 3 mm from the edge of the intestine. Each suture line is then tied to the short stay sutures. This concept was put to the test on R&A patients which were followed for an average of more than two years. The results were considered excellent. Conclusion: Use a continuous suture for an R&A.

*Phil Zeltzman, DVM, DACVS, CVJ
DVM News Magazine, 30:6*

X-raying the acute abdomen

If this radiologist had one tip to give for the acute abdomen or a vomiting patient, it would be to take a left lateral projection. This, because this projection puts gas (which is a naturally occurring contrast medium that's already present in the stomach) in the pylorus, the pyloric antrum and sometimes the proximal duodenum as well. It can really help to highlight foreign material, especially in the pyloric antrum, by surrounding that foreign material with gas. It's a really good way, before we do anything else, of just ensuring that the stomach looks very normal. So, if one has a right lateral projection and an orthogonal view of the patient who is vomiting, one of the first thing this author recommends is obtaining a left lateral projection and just making sure that there's not something we can see already without doing any other advance imaging.

*Maria Evola, DVM, MPH, DACVR
Vetted, Apr 2019*

Sedation of the FUO patient

Sedation protocols should be based on the stability of the patient, the severity of electrolyte abnormalities, and the severity of clinical signs (e.g., bradycardia, comatose, obtunded, etc.). Ideally, sedation protocols should be quick acting, reversible, and cardiovascularly-sparing. The author's preference for sedation for unblocking in a typical, stable FUO case is (Dosages are listed as total cat doses): • Butorphanol: 4 mg, IV total per cat. • Diazepam: 2.5 mg, IV total per cat • Ketamine: 10 mg, IV total per cat. In the critically ill, obtunded FUO case, very little sedation – if any at all – may be necessary. In critically ill cases requiring minimal sedation, the author prefers (Dosages are listed as total cat doses): • Butorphanol: 2 mg, IV total per cat. • Diazepam: 1.25 mg, IV. total per cat.

*Justine Lee, DVM, DACVECC, DABT
Fetch San Diego, Dec 2018*

Forward booking, it works

You've called, emailed and texted, and you've gotten zero response. You've even gone retro and sent a post-

card, but clients still aren't booking their next appointments. Frankly, both you and your clients are getting irritated by all of the reminders. You need a different approach- something that actually brings them into the clinic—namely, forward booking. Reminders just can't beat forward booking at getting clients to return to your practice in a timely manner. Why? Because reminders are much easier to ignore than an appointment that's already on the schedule. Forward booking is much more successful when the doctor makes the suggestion in the exam room (instead of leaving that task to the receptionist at the front desk). When the veterinarian says, "This is important and I don't want it overlooked, so let's make an appointment for six months from now." Compliance skyrockets. A bonus: Scheduling the next appointment in the exam room also shortens checkout times.

*Tracy Sheffield, BS, LVT, CVPM
Vetted, 113:3*

Comparing sedatives for IV catheter placement

Intramuscular sedation with butorphanol in combination with dexmedetomidine is likely to provide superior sedation in cats than buprenorphine and dexmedetomidine. Butorphanol is less likely than is buprenorphine to contribute to emesis when used in combination with dexmedetomidine for intramuscular sedation. In cats for which buprenorphine is a more desirable choice of opioid (e.g., painful patients or those undergoing invasive procedures), administration of an antiemetic 45 to 60 minutes prior to intramuscular sedation may be considered. The dosages used were as follows. Intramuscular dexmedetomidine (10 µg/kg) combined with butorphanol (0.4 mg/kg) as compared with intramuscular dexmedetomidine (10 µg/kg) combined with buprenorphine (20 µg/kg) for intravenous catheter placement.

*Kate Cummings, DVM, DACVAA and Emily Wheeler, DVM
Clinician's Brief, Apr 2019*

CHF and diet

Dietary modifications should be discussed with all clients of patients with CHF. Most cardiologists agree that the two most important aspects of diet for these patients should be moderate sodium restriction and adequate protein content. Many cardiologists recommend <0.2%-0.3% dry matter of sodium or <80 mg/100 kcal. Options for diets that fit these criteria can be various senior diets or prescription diets (cardiac, geriatric, other). It can be very difficult to execute diet changes in some patients, especially cats. Above all, it is important that patients continue to eat. Due to high-prevalence of cardiac cachexia in later stages of disease, it is important that patients eat well and not have any protein restriction. In some cases, the addition of additional protein sources (e.g., hard-boiled eggs, boiled chicken) or fish oil supplementation can help reverse some of the muscle mass loss seen in these patients. Fish oils supplementation is dosed according to the two components of fish oil (DHA 25mg/kg, PO, QD; EPA 40 mg/kg, PO, QD) and should be divided into two doses to help avoid development of

diarrhea. The benefit of other nutraceuticals (e.g., CoQ10, taurine, carnitine) in standard cases of CHF (i.e., not documented cases of deficiency) is still controversial.

*Nicole Cuwell, DVM, MS, DACVIM
Fetch San Diego, 12:17*

Taking care of the older pet-post-anesthesia

Most anesthetic deaths occur in the first three hours of the recovery period, probably because this is a time when physiological support is withdrawn; for example animals go from breathing 100% oxygen to room air at a time when their requirements for oxygen may increase if they are cold and shivering. This is especially detrimental in older patients with reduced cardiac and respiratory reserves. For these reasons, supplemental oxygen should be given until animals are normothermic and thermal support should be provided. Willingness to eat soon after anesthesia is also important and adding maropitant and / or ondansetron to the protocol will decrease the time to voluntary feeding and increase caloric intake in the first 24 hours after surgery.

*Sheilah A. Robertson, BVMS, PhD, DACVAA, DECVAA
VMX, 02:18*

Splenectomy and GDV

In one study evaluating the relationship between gastric dilatation volvulus and previous splenectomy found dogs with a previous splenectomy to be **5.3 times more likely to develop gastric dilatation volvulus** than were dogs without splenectomy. Other studies have reported development of gastric dilatation volvulus in atypical breeds (e.g., Bichon Frise, Beagle) after splenectomy, which suggests splenectomy may be a potential predisposing factor. Thus, some surgeons may recommend prophylactic gastropexy be performed in dogs undergoing splenectomy.

*W. Alexander Fox-Alvarez, DVM and J. Brad Case, DVM
Clinician's Brief, 16:4*

Stress during surgery

Maternal stress is to be avoided. Stress related glucocorticoids are passed to the fetus. This causes the offspring to respond with increased reactivity when placed in a stressful situation. Particularly in cats the "upregulation" of the hypothalamic-pituitary-adrenal axis is suspected to underlie many behavioral problems involving impulsivity and aggression. Examples of these issues are fear related aggression, conflict related aggression, predatory aggression and redirected aggression to people and animals. It is believed this also occurs in the dog.

*Michael E. Peterson MS, DVM
AVMA Conf, 07:17*

Replacing lack of tears in KCS

Improve lubrication and provide comfort until normal tear production is attained. If owners must be gone for extended periods of time, the petroleum based artificial tear ointments remain the best choice as they will remain on the cornea and slow tear evaporation. How-

ever, if an owner is able to apply medications more frequently, the artificial tears are more physiologic, allowing for improved corneal health and animal comfort. Please note that if an owner is applying a lacrimomimetic more than 6 times daily, preservative free preparations should be selected as at higher frequencies preservatives can become toxic to the corneal epithelium. One very cost-effective preparation available over the counter is GenTeal. GenTeal contains a small amount of hydrogen peroxide as a preservative. Once the preparation is placed on the eye, the hydrogen peroxide is converted into oxygen and water. This formulation allows GenTeal to be sold in multidose vials. Available as both a gel and liquid, the severe and PF formulations of GenTeal are preferred as they contain the highest concentration of hydroxypropylmethylcellulose (0.3%).

*Wendy M. Townsend, DVM, MS, DACVO
Emerald Coast Vet Conf, 07:17*

Poisoning myths

When **Febreze** first came out on the market in 1999 there was an extensive internet email rumor that implicated it in the deaths of many dogs. The email occasionally is sent around again. Febreze can cause respiratory issues in birds and allergic reactions in some dogs, but it has not been linked to any dog deaths. **Swiffer wet jet** kills pets; Another internet rumor started in May of 2004, which stated "Swiffer wet jet contains a compound which is 'one molecule away' from antifreeze and caused liver failure and death in a German shepherd dog." Nothing in the ingredients of the Swiffer liquid poses risk of hepatotoxicity. If antifreeze or a closely related glycol were involved, we would expect renal, not liver damage. Any molecule is 'one molecule away' from antifreeze. **Ultra Clorox bleach** kills pets; "Ultra Clorox bleach poses danger to pets and should not be used in households with pets because it contains sodium hydroxide, which is LYE, which is not present in 'regular' bleaches." The truth is that all bleaches contain lye (sodium hydroxide) and compared to other bleaches, Ultra Clorox does not pose additional hazard to pets when used as directed.

*Tina Wismer, DVM, MS, DABVT, DABT
NE VMA Conf, Jan 2019*

Pheromone use

Feliway is a synthetic analog of a feline facial pheromone that is thought to increase emotional stability. Its use in the reduction of inappropriate urination needs to be studied further. Studies done to date have shown a reduction in urine marking of less than three months duration of over 96%. In cats who had been marking for 4 months or longer, there was a reduction of marking in 91% of cats after 35 days of environmental treatment. A third study showed that while there was a significant reduction in all households in which Feliway was applied, 2/3 of the households still experienced some marking. The product

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is sprayed directly on places soiled by the cat and also any prominent vertical locations in the environment. A daily application is necessary **until the cat is noted to exhibit facial rubbing on the site**. If the cat does not exhibit facial rubbing, then daily application to the environment should be continued for one month. Plug-in diffusers provide a constant, slow release of pheromone covering an area of 500 -700 square feet, but must not be covered, placed behind a door or under furniture.

*Margie Scherk, DVM, DABVP
Music City Vet Conf, 02:17*

Otitis prevention with a steroid

To the author's knowledge there are no studies showing that ear cleaning has any impact on the treatment or prevention of otitis externa. However, there is a study that evaluated the efficacy of a dermocorticoid administered twice weekly in the ear canal as a long-term maintenance measure to prevent recurrence of otitis externa (OE) in dogs with atopic dermatitis. Twenty atopic dogs with relapsing (>3 episodes/year) bilateral OE were included in the study. After successful treatment of otitis externa with a topical antibiotic-antifungal-corticoid combination, dogs' left and right ears were each randomly allocated to either an ear cleansing maintenance regimen once weekly or the same regimen followed by application of three drops of 0.0584% hydrocortisone aceponate in the ear canal two consecutive days per week. The dogs were examined on day 30 then q 60 days. At the end of the 6-month study it was determined that the probability of remaining free of relapse was 95% in group B (cleaner plus 2 consecutive days/week of a dermocorticoid) compared to 50% in group A (median time to relapse: 90 days) after 6 months. The authors concluded that twice weekly hydrocortisone aceponate application in the ear canal provides an **effective maintenance regimen** to control canine allergic otitis. This author believes that cleaning was not effective when compared to cleaning PLUS the steroid, and if they only did the steroid the outcome would have been the same but this was not evaluated in this study.

*Paul B. Bloom, DVM, DACVD, DABV
New England Vet Conf, 09:18*

One take on the use of Apoquel

This author uses Apoquel at the dosing recommendations only after thorough work up for the underlying allergy. If a patient is not controlled at once daily dosing, the author has had some success dividing the once daily dose to twice daily. Additionally, sometimes changing the time that the Apoquel is given (in the morning instead of the evening for example) can be effective. Apoquel will not control pruritus in one-hundred percent of atopic patients. Just like steroids or cyclosporine, it will be effective in many, but not all patients. This author tends to use Apoquel for short term allergy or flea allergy flare ups in cases where the author would have previously used a short course of steroids, and does see excellent and rapid relief of pruritus. While Apoquel is effective at reducing inflammation on most areas of an allergic dog, it does not seem to greatly decrease inflammation associated

with allergic otitis when compared with glucocorticoids.

*Andrew Rosenberg, DVM, DACVD
North American Vet Conf, 02:17*

Vaccine-associated sarcomas

A primary role of an adjuvant in a killed virus vaccine is to induce chronic site inflammation to recruit the antigen presenting cells of the macrophage/monocyte system to the site of injection to process the killed vaccine antigen and present it to the lymphocytes of the immune surveillance system. Vaccine adjuvants can also cause tissue necrosis, granuloma formation, retention of antigen at the injection site, and fibrosis. Adjuvant material and the associated inflammatory response may persist at the site of administration for many months to many years post-injection. It is this tissue damage combined with the chronic injection site inflammation that is suspected to be the cause of neoplastic transformation at the site of vaccine administration. A recent review by Okada states: "Inflammation, especially chronic one, is the definite cause for tumor development and progression, and it is well referred to as [inflammation-related carcinogenesis]". The most recent epidemiologic review of injection-site sarcomas demonstrated a mean ten times higher risk of neoplasia in cats vaccinated with killed adjuvanted vaccines compared to recombinant (non-adjuvanted) vaccines. The range at a 95% confidence interval went from a 2.5 to an infinitely times greater risk for any individual cat. Because of this, this author personally recommends that inactivated, adjuvanted vaccines NEVER be used in cats.

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

Fluids in the anemic patient

Intravenous fluids are sometimes used excessively in the anemic patient when the decrease in red blood cell mass is **misinterpreted as total blood volume depletion**, when in fact the plasma volume might even be expanded. To compensate for decreased tissue oxygen delivery, the heart rate increases, and if these patients are subjected to large fluid volumes over a short period of time, congestive heart failure and pulmonary edema can occur. Anemic cats in particular are susceptible to intravenous overload from crystalloid infusions. The dehydration deficit and maintenance fluid volumes should be gradually replaced over a 24-hour period with an isotonic crystalloid solution, while fresh whole blood is used to replace the red blood cells. The volume of whole blood infused should be considered when calculating the volume of crystalloid for infusion.

*Michael Schaer, DVM
88th FL VMA Conf, 04:17*

Acral lick granuloma.

A localized form of Staph furunculosis in dogs is acral lick granuloma. These granulomas are triggered by a pruritic disease (common causes are flea allergy or atopic dermatitis) and then are complicated by the presence of Staphylococcus in the dermis. This is an **important thing to remember** as much effort is typically placed on

controlling the itch (e.g. use of steroids) and not equal amount of effort is placed in controlling the infection which significantly contributes to the itch and prevents the clinical resolution of the disease. The vast majority of dogs with acral lick granuloma have a medical underlying disease and not simply a behavioral problem. Failure to identify and correct the underlying disease leads to treatment failure.

*Rosanna Marsella, DVM, DACVD
4th Gulf-Atlantic Vet Conf, 10:17*

Boxers and acepromazine

A breed sensitivity that is less well documented is the sensitivity of Boxers to acepromazine. This dates back to early publications from well-respected anesthesiologists in the United Kingdom. It has been suggested that this has a genetic basis and is limited to lines of Boxers from England. It is also believed to be more likely when higher drug doses are given intravenously which was commonly done in the past. Many Boxers have been administered doses in the range of 0.01 - 0.04 mg/kg (or higher), SQ and while they may experience hypotension as with other breeds there doesn't appear to be a notable difference in the side effect profile. Animals that do respond negatively tend to collapse and are non-responsive within minutes of drug administration. Blood pressure and heart rate decrease, mucus membrane color is pale and capillary refill time slow. Intravenous fluid therapy, anticholinergic administration and oxygen (intubation and breathing support if necessary) have worked to reverse these effects. Supportive care should be maintained until the dog is cardiovascularly stable and breathing regularly.

*Khurshed Mama, DVM, DACVAA
VMX, Jan 2019*

Behavior and trainers

Critically assess any behavior professional to whom you refer your clients and beware of the unregulated nature of the dog training industry. There is no licensing, and "certification" terminology is often provided by for-profit entities whose programs do not undergo the scrutiny to the extent of veterinary certification program. Unfortunately, terms like "behaviorist" and "specialist" are usually self-labeled. Attending a seminar does not make an expert. Likewise, high-levels of success in dog sports, police, protection, search and rescue do not automatically indicate this individual has the knowledge base to identify emotion-based behavior problems. Although most trainers are ethical and many effective, you cannot know that from a brief conversation, marketing material, or even personal testimonials. Ask about continuing education attendance, your role in your patient's care, and client safety for trainers that employ aversive tools (shock collars, chains, prong collars). Do not take specific medication recommendations from a trainer. All veterinary clinics should strongly consider providing additional behavioral education to a veterinary staff member, particularly a technician who can become

specialized through Academy of Veterinary Technicians, as the behavior resource for clients. This allows information and revenue to stay within the practice. It's YOUR license and reputation too.

*Julia Albright, DVM, DACVB
Fetch San Diego, 12:17*

Behavior problems

Many pharmaceutical and non-pharmaceutical agents are available today for dealing with pet behavior problems. In order to use them most effectively you need to have basic understanding of how they work both separately and in combination with other products. Pet owners also need to be encouraged to document frequency and severity of their pets' clinical signs and symptoms so as to help them evaluate their pet's response. The **placebo effect** is very powerful in some cases so objective data is really needed in order to be certain that you are improving the pet's symptoms. Otherwise, many pets may continue to be treated with interventions that may not be truly helping. This can only increase the length of time that it takes to achieve significant lasting improvement for the pet, thus increasing the chance that the owner will become frustrated and begin to give up on the pet. Once this happens, the bond between the owner and the pet can be irreversibly damaged or broken completely and euthanasia or relinquishment become more likely. Appropriate use of pharmaceutical and non-pharmaceutical agents can help prevent suffering and keep pets in their home, something all veterinarians should be very interested in doing.

*Valarie V. Tynes, DVM, DABVP
NE VMA Conf, Jan 2019*

Feline interstitial cystitis (FIC)

This author does not recommend amitriptyline for acute FIC; however, it may help prevent FIC with long-term use, so it's a possibility in cases that are refractory to multimodal environmental modification and nutritional management. If you do use it, make sure to counsel your client on the potential adverse effects. When it comes to pain management, it's important to provide analgesia for cats with acute flare-ups of FIC, especially those with obstructive idiopathic cystitis. Buprenorphine is one good choice because sublingual administration of small volumes is less stressful for most cats than giving oral tablets or liquids. Another option is gabapentin, which has broad application for management of neurogenic pain (which plays a big role in FIC), though there are no specific data supporting its use here. What about prednisone? No dice. Prednisone has been shown to be equal to placebo in a study. **Don't give steroids for FIC.**

*Julie Fischer, DVM, DACVIM
Vetted, 113:3*

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