What a relief!

Meet longtime relief technician Liz Hughston, MEd, RVT, CVT, LVT, VTS (SAIM) (ECC)
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“It is possible to turn these untamable lions into purring little kittens.”

—Emily Shiver, CVPM, CCFP
According to data released by the ASPCA Animal Poison Control Center (APCC), its agents fielded more than 232,000 calls about animals exposed to potentially harmful toxins in 2019.1 This was an increase of nearly 10% from the previous year. Are you confident in your knowledge of common household items that may be toxic to companion animals? Do you know when inducing emesis might be dangerous?

Thankfully, Liz Hughston, MEd, RVT, CVT, LVT, VTS (SAIM) (ECC), is well versed in identifying and treating veterinary toxicity cases and recently shared her knowledge with attendees at the Fetch dvm360® virtual conference.

“Toxicities are among my favorite emergencies to treat,” Hughston, the founder of VetTechXpert, said at the beginning of the presentation. “I find them very fulfilling because often you will get immediate job satisfaction. You will know you have really helped the patient because you get to see the results pretty quickly.”
Top toxins
Chocolate remains the most reported toxin ingested by dogs, according to the Pet Poison Helpline, followed by rodenticides, anti-inflammatory medications, xylitol, and grapes/raisins. It is always an emergency if a dog eats raisins or grapes because of the unpredictable reaction, Hughston said. “We do not know the toxic principle behind it. Some dogs can eat many grapes and have no problem, but another dog might eat just 1 grape or raisin and immediately go into kidney failure.”

In cats, the Pet Poison Helpline pinpointed lilies as the most frequently reported toxin, followed by insecticides (primarily dog flea medication), household cleaners, antidepressant medications, essential oils, and anti-inflammatory medications. Although not listed by the Pet Poison Helpline, Hughston noted that tetrahydrocannabinol (THC, the main psychoactive component of marijuana) toxicity is becoming increasingly prevalent and requires immediate attention. “THC toxicity, coming from marijuana as opposed to hemp,” she clarified, “is usually a very dramatic toxicity. People are going to want their pets treated because it looks very scary, even though it is not necessarily dangerous in and of itself.”

Toxicity treatment basics
As in any emergency, it is crucial to ensure the patient remains stable. “We always want to make sure we are paying attention to the airway, breathing, and circulation,” Hughston said. “This part is really important because whether or not you have a toxicity you are trying to treat, if your patient is not alive your treatment is not going to be successful.” Treat what kills first.

While the patient is being stabilized, support staff should obtain as much information from the client as possible. “This is a really valuable role for veterinary technicians to play,” she explained. “You need to know exactly what the patient got into, when they were exposed, how much were they exposed to, and how they got into it.”

Call me!
Hughston stressed the importance of having pet poison hotline numbers posted throughout the hospital for veterinarians and support staff to reference as needed. In particular, she recommended the Pet Poison Helpline (855-764-7661) and ASPCA APCC (888-426-4435). Both groups accept calls 24/7 and are staffed by veterinary toxicologists and experienced technicians.

When the solution is dilution
Once the patient is stable, the toxicant has been identified, and the details of the exposure are known, measures should be taken to prevent further absorption. “As much of the toxin as we can remove or prevent from being absorbed, the better,” Hughston said. In most cases of toxicity, dilution is the most successful remedy.

External decontamination
Patients with topical exposure should be bathed in tepid water to remove as much of the contaminant from the skin or fur as possible. Rinse the affected area for a minimum of 10 minutes, and longer if signs persist. To avoid aspiration, take extra care when bathing patients that are recumbent or have reduced responsiveness or reflexes, she advised. Additionally, dry the patient thoroughly and check core body temperature frequently to avoid hypothermia.

Internal decontamination
When a patient has ingested a toxin, inducing emesis is generally

active ingredients and contents if the pet owner knows the brand name. In addition to information about the exposure, staff should record current medications and any significant ongoing health conditions, such as asthma or heart disease. Hughston suggested using the toxin exposure triage form (www.aspcapro.org/resource/apcc-toxin-exposure-triage-sheet) provided by the ASPCA APCC as a guide for ensuring all pertinent information is collected.
the first step in gastrointestinal (GI) decontamination. For dogs, Hughston prefers using a compounded apomorphine injectable, which causes vomiting within 2 to 3 minutes after administration.

In June 2020, the FDA approved the use of ropinirole ophthalmic solution (Clevor, Orion Corp) for the induction of vomiting in dogs. In a clinical field efficacy study in which Clevor was administered to 100 client-owned dogs to induce vomiting of their last meal (no toxins or harmful objects were given to the dogs), 95% vomited within 30 minutes. Emesis occurred after the first dose in 86% of the dogs.2 “This is a nice option if you have a canine patient who is constantly getting into things. It can be useful for the client to have these drops at home,” Hughston said.

Although very useful in dogs, apomorphine is not an effective emetic agent in cats because they do not have as many dopamine receptors, she said. Veterinary professionals often spin feline patients to make them dizzy and induce vomiting. “But there are more effective options,” Hughston said. α2 Agonists, including xylazine and dexmedetomidine, are better choices.

Hughston also highlighted a 2019 study published in the Journal of Veterinary Emergency and Critical Care that examined the efficacy of hydromorphone for inducing vomiting in cats. The researchers found that emesis was successful in 75% of cats treated with hydromorphone (0.1 mg/kg subcutaneously) and resulted in less sedation and smaller decrease in heart rate.3

Emesis is not always the answer

There are certain instances in which emesis could prove dangerous, Hughston warned. This is especially true if a patient is already vomiting, experiencing respiratory distress, or has ingested caustic or corrosive agents that may cause damage to the GI tract. Hughston offered various alternatives for removing or diluting the toxicity when emesis is not encouraged.

Adsorption

Activated charcoal can be administered in many toxicity cases to prevent absorption from the GI tract. The charcoal will adsorb certain toxic agents and facilitate excretion.

Cathartic agents

Sorbitol, lactulose, magnesium salts, or bulk fiber can be used to speed the transit of a toxicant through the GI tract. The increased speed decreases chances of absorption from both the large and small intestines.

Dilution

Induction of emesis is contraindicated when caustic or corrosive agents are ingested. Instead, dilution with milk or GI-coating agents (eg, Milk of Magnesia) is necessary. “Don’t forget the value of IV fluids both as a toxin diluter and as a patient supportive care measure,” she added.

Gastric lavage

Ingestions of hydrocarbons, caustic substances, or very lethal toxicants may require gastric lavage, Hughston said. Gastric lavage requires general anesthesia and must always proceed with a cuffed endotracheal tube in place to protect the airway from both lavage fluid and stomach contents.

Surgical removal

If the toxicant is solid (eg, intact batteries, pennies), endoscopic or surgical removal is the most effective method to prevent absorption.

Regardless of the toxicant, supportive care is essential to positive patient outcomes. “Veterinary professionals who are familiar with toxicology concepts and treatments are crucial to ensuring that patients recover with minimal long-lasting effects,” Hughston reminded attendees.

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When intentions don’t match results: 3 reasons why well-being plans fail

Figure out why your plan to improve personal well-being isn’t working, and learn how to tailor your strategy for success.

By Kristina Guldband, BS, CVT, CSP

1. You may have unrealistic expectations

It’s easy to visualize the end result of a well-being plan, but the choices, sacrifices, and willpower it takes to follow through don’t get nearly enough attention. At the beginning of my well-being journey, I was told I would have to make changes. My first impression was that it wouldn’t be too hard or take too long—but boy, I was mistaken.

I quickly realized that I was in a toxic friendship and needed to reevaluate my inner circle. After feeling inspired by the well-being lecture, I was finally ready to let this friend go. I tried weaning myself off the relationship by telling myself why it didn’t work. Then I asked myself what it would mean if I let her go. If she wasn’t around, I reasoned, I would be bored and lonely. Once I confronted these underlying assumptions, I was able to release my grip. I trusted that I could connect with more positive individuals in the future. This process took more than 6 months, but with practice the time frame for making change happen will get shorter.

2. You want a quick fix

Well-being workshops can help inspire change. They provide lots of useful information but no real-world practice. I can tell someone how to place a central line catheter and give tips for troubleshooting problems, but until someone tries it for themselves they won’t know how to overcome obstacles.

When coaching veterinary professionals, I spend a majority of my time troubleshooting. For example, one of my clients wanted more balance in her life. Although she loved her job and colleagues, she also valued her personal time and often felt guilty about leaving work on time. We found a way for her to uphold her boundaries and her work values. It took weeks to develop a successful strategy. In the end, the solution included a combination of letting go of what others thought about her, improving her time management skills, and communicating with her teammates. The bottom line? Well-being is not black-and-white—every situation comes with unique challenges.

It had been 28 days since I pondered wearing jeans—scrubs are so comfortable and don’t judge my waistline. After finally getting into my jeans, I was out of breath and feeling extremely uncomfortable. Then it hit me: I wasn’t myself. I was beyond stressed not just from weight gain but also from my high workload, late hours, and exhaustion.

I always thought I was good at managing stress, but my poor quality of life told a different story. So what did I do about it? Like many veterinary professionals, I attended a well-being lecture. Afterward, I was inspired and ready to tackle the world—or so I thought.

That Monday morning, I strolled into the clinic, prepared to take my life back. I was going to stay focused and positive and leave on time. But 4 hours into my shift, after several frustrated clients and emergencies, I felt like all the strategies I learned during the lecture went right out the door. My old habits began to take over, and I wondered why my new well-being plan didn’t work.
“Semper Gumby” is an unofficial US Marine Corps motto that means “always flexible.” Practice being strong and flexible during this well-being journey. You will try, fail, grow, and repeat. It’s all part of the process.

You are looking for comfort

When a dog has a fever but no other obvious signs of illness, we know there’s more going on than meets the eye. Feeling uncomfortable is similar because it can help us identify some trouble areas in our life.

For example, boundaries are especially hard for me. I still feel stressed when someone repeatedly pushes my boundaries. I once had a boss, Sally, who asked me to confront another coworker, Becky, about an opinion Becky expressed about me. I felt it would be death by communication if I started a conversation that sounded something like, “I was told that you thought I was mad at you 2 weeks ago.” The thought of having this conversation made me cringe.

I was aware that Becky and I did not get along, but I had a plan to help rebuild our relationship. When Sally pushed me for the third time, I was ready to blow. Instead of caving on my boundary, I sat with the problem and processed the situation. This helped me realize that I never told Sally what I planned to do about Becky.

I reassured Sally that I had already started a process of trying to improve my communication with Becky. Without taking the time to sit in my frustration, I might not have upheld my boundary and could have been resentful later.

The next time you feel like your only choices are to uphold your well-being or cave in, remember there is a third option. Sit with the discomfort and ask yourself: What am I supposed to learn?

The bottom line

Most people are doing their best to be happy. It is hard to play the long game when you can make decisions in the moment that will give you relief.

Expectations can sneak up on you in the form of feelings such as discomfort, disappointment, and self-criticism. If your well-being is low, the journey back to happiness will have moments of triumph alongside struggles.

Viewing your path to better well-being as a journey with twists and turns will help set realistic expectations and allow you to roll with the punches rather than giving up.

Let’s face it. Improving your well-being is hard, but it can help you live a healthier and happier life—one that you’re genuinely excited about.

Kristina Guldbrand, BS, CVT, CSP, worked as a certified veterinary technician for 12 years before becoming an account manager for Veterinary System Services, where she discovered her love of leadership and well-being. She has received training through the International Coaching Federation and provides workshops, leadership, and well-being coaching, as well as team building for practices.

Write it down

To help identify—and overcome—subconscious assumptions about your well-being plan, ask yourself these questions and write down your responses:

- What expectations do I have about this well-being plan?
- What will I need to give up or add to my life to make this plan work for me?
- What areas of my life will I have to reevaluate to improve my well-being?

Talking about or writing down your assumptions can help put your journey into perspective. We might think we make perfect sense, but when we share our thoughts with someone else or write them down, we might notice that some of our well-being goals are unreasonable.
Every veterinary team member is essential to building a thriving veterinary practice. Although you may love your job, it’s normal to yearn for more. Continued growth and development are crucial to personal and career satisfaction. If you’re a dedicated animal care professional looking to advance your career, here are a few ways to do it.

Continuing education (CE)

Many CE opportunities exist to advance your current know-how. Lectures and courses on ultrasonography, dentistry, low-stress handling, emergency medicine, and many other topics are available. Low-cost or free online CE webinars have increased since the start of the pandemic. Be sure to showcase your career development during your annual review by highlighting any CE courses you have completed.

Specialization

For licensed technicians, specialization offers an avenue to expand your knowledge, skills, responsibilities, and opportunities. Some of the specialties described on the NAVTA website include the following:

- Emergency and critical care
- Dentistry
- Internal medicine (with subspecialties such as cardiology, neurology, oncology, equine internal medicine, and more)
- Anesthesia and analgesia
- Zoological medicine
- Laboratory animal medicine
- Animal behavior
- Clinical pathology
- Nutrition
- Surgery

Licensing and certification

Licensing and formal certification carry many benefits, including standardized education criteria and credentials that potential employers can easily pursue. Additional certifications might also open the door to new positions and increased compensation. Here are 3 examples of certifications you can pursue depending on your current position and career goals:

- Licensed/certified/registered veterinary technician (LVT/ CVT/RVT): This certification may go by different names depending on where you live, but in most states it involves attending a school of veterinary technology and passing a licensure exam.
- Approved veterinary assistant (AVA): Upon graduation from a National Association of Veterinary Technicians in America (NAVTA)—approved veterinary assistant program and successful completion of an exam, an individual is entitled to use the designation AVA and receives a documenting certificate.
- Certified veterinary practice manager (CVPM): Current practice managers can seek certification in their role through the Veterinary Hospital Managers Association program.

To pursue certification, research the requirements in your state and find a program near you (keep in mind that many programs are now online). Your certification may also include hands-on training in a veterinary practice.
Most specialties are practiced in specialty and emergency hospitals, but some specialty areas, such as dentistry and nutrition, are practiced commonly in general practices as well. Either way, your specialized knowledge will help you become more valuable to your practice while improving the quality of care you provide your patients.

Keep in mind that you don’t need to be certified to start exploring your options. Consider shadowing a technician at a specialty practice. Most practices are open to this option, which allows you to get an inside look at what it’s like working in that specialty and learn more about how to reach your goal.

Additionally, consider applying for a position in a specialty practice even if you haven’t specialized yet. Some are happy to take on a good veterinary technician who’s not a specialist. That goes for assistants, client service representatives, and other team members, too. Specialty practices may provide an exciting new career move for you.

Invest in your current workplace
If you love where you work but feel like you’re at a standstill, think of ways you can expand your current role. Depending on your interests and the nature of your workplace, consider the following.

Explore supervisory or management roles
Typically, these are operations positions that can give you the bump you need to try something new and gain additional skills in a veterinary clinic environment.

Ask about leadership positions
If management isn’t your thing, there are other leadership roles that still allow you to play a key role in decision-making. Think lead technician, head receptionist, or care coordinator positions. You may find that you enjoy training other team members. In addition to advancing your own professional development, you can help improve communication and cohesiveness among the whole team.

Make sure your skills are fully utilized
Underutilization of qualified veterinary personnel remains common and can lead to boredom and frustration at work. If you feel your skills are not being used, speak up. In addition to fueling your own career satisfaction, you might improve workflow and productivity by promoting appropriate delegation of tasks.

Ask for a raise or promotion
If you’ve been with your employer for 8 to 12 months, write down examples of the value you bring to the practice and ask practice leaders to discuss your compensation. If appropriate, suggest additional responsibilities you could take on, such as inventory management, to warrant a pay increase.

Ask about additional benefits
Inquire about your practice’s extra paid time off policy, CE allowances, and support as you seek specialty training.

Although asking for what you want may seem daunting, taking the initiative is usually better than feeling “stuck” or like you’re missing out. Improve your confidence and approach to these conversations by researching and practicing communication strategies, by writing down concrete ideas and examples to support your request, and by maintaining a kind, professional, nonconfrontational tone.

Set your goals and priorities
To get to where you want to be, think about your current priorities and ask yourself these questions: Which aspects of your career do you love? Do any of these inspire you to want to learn more? What aspects of your current employment would you like to change? By writing these things down, you’ll develop some clarity that will help guide you through the next chapter of your career.

As a skilled veterinary professional, the opportunities are endless. Don’t settle; explore, learn, and find the perfect role for you.

Zay Satchu, DVM, is co-founder and chief veterinary officer at Bond Vet, a veterinary practice group in New York, New York.

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CLIENT EDUCATION

TEACHING CLIENTS ABOUT

geriatric pet care

Older cats and dogs require special care both in and out of the clinic. Here are some important behaviors owners should monitor at home, plus some tips and tricks you can recommend for caring for senior pets.

By Heidi Lobprise, DVM, DAVDC

Let’s face it. Most people don’t want to admit they are getting old, and the idea of a beloved pet aging can be hard for veterinary clients to accept. But frequent examinations and professional care combined with appropriate care at home can help make pet aging a positive experience for both pets and their owners.

It starts with education

When it comes to caring for older pets, client education is crucial. Teach pet owners how to identify subtle changes, as these could be early signs of disease or dysfunction. Here are a few key pet changes that veterinary teams should discuss with clients.

Diet and hydration

Encourage clients to pay close attention to their pet’s eating habits. Have they noticed any changes, such as a preference for soft food or signs of pain while eating? If so, dental disease could be at play. Older pets that have trouble finding their food bowl, or pets that start eating and then wander away, could have cognitive issues. Additionally, some cats may need more liquid, making a canned diet preferable.

Most senior pets benefit from smaller, more frequent meals that are easily digested. Nutritional needs for geriatric pets may be affected by disease processes, so make sure clients come to you for appropriate recommendations. Inform them that the Association of American Feed Control Officials, which regulates pet food, offers no specific recommendations for senior diets, so a “senior” label on pet food packaging does not necessarily make it the best choice.

Hydration is another behavior owners can assess at home. Has the pet been drinking more or less than usual? Polydipsia or polyuria can be early an indicator of renal disease or diabetes, but in multiple-pet households it is often difficult to determine actual water intake for individual pets.

Sleep/wake cycles and elimination

Changes in sleep/wake cycles could indicate discomfort or pain, or they could be a sign of cognitive dysfunction, particularly in cats that yowl for no apparent reason at nighttime. Explain to clients that excessive sleeping may be attributed to old age, but chronic disease processes can cause lethargy, so a full medical assessment is warranted.

House soiling could be a sign of polyuria or polydipsia. Is discomfort or pain discouraging the dog from going through its doggy door or the cat from stepping into its high-sided litter box? If these medical issues are ruled out, cognition dysfunction could be playing a role in this behavior.

Activity levels, cognition, and sensory ability

People and pets naturally slow down as they age, but sometimes there is more to it. A pet could be lethargic due to disease or reluctant to move because of pain. Additionally, cognitive issues may cause an increase in nonpurposeful movement, with more wandering and pacing. It’s clear that many issues facing older pets have a cognitive dysfunction component, so when medical issues are ruled out or managed, further attention should be paid to cognition, because the pet’s quality of life can greatly suffer from cognitive problems, and the human-animal bond will likely suffer as well.
Eyesight and hearing acuity decrease as pets age, and the signs can be obvious or subtle. A dog with complete cataracts may bump into walls, whereas pets that are having trouble navigating due to declining sight may limit their movement to play it safe.

**Make it easy**

Provide a folder in which clients can keep results of lab work, care instructions, and other information, including photos. Encourage pet owners to keep a diary or records of pet health concerns. Recommend that they include the following types of information in the folder so it is easily accessible:

- **Tumor map:** Ask clients to take pictures of concerning lumps or bumps, with an object in the photo for size reference. These images can be compared with subsequent photos to help monitor progression.
- **Body and muscle condition scores:** Share charts that assess body condition to help clients understand the consequences of both overweight and underweight pets.
- **Resting respiratory rate:** Although not every pet will develop cardiac or respiratory issues, it’s never a bad idea to have a baseline for later comparison.
- **Questionnaires:** A variety of validated questionnaires are available for use in determining pet pain and comfort levels, cognition, and more.

**Discussing end-of-life care**

Prepare your clients for the dreaded “When is it time?” discussion. By now, you have likely already introduced them to several pain and cognition questionnaires, which essentially assess quality of life. The Pet Quality of Life Scale and Gray Muzzle Quality of Life Calendar, offered by Lap of Love, are designed specifically to assess quality of life by enabling owners to record whether their pet had a good day, a bad day, or a neutral day.

Finally, a growing number of hospice options are available to provide in-home care for geriatric patients, from services provided by veterinary practices to hospice-specific practices. Readers can learn more from the International Association for Animal Hospice and Palliative Care (iaahpc.org).

**Take-home message**

The best way to advocate for your geriatric patients is by properly educating their owners and working together to provide the best care possible. In the end, you will help enhance not only the pet’s life span but also its health span.

Heidi Lobprise, DVM, DAVDC, is a veterinary dental expert with Main Street Veterinary Hospital and Dental Clinic in Flower Mound, Texas.

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“My puppy is peeing all over the house!” We have all heard this distress call from panicked puppy owners, and we assure them that there is no reason for alarm. Housebreaking takes time. A puppy’s bladder muscles are not fully developed until aged 4 to 6 months; a 10-week-old pup can hold urine only for a couple of hours. Of course there are going to be accidents around the house.

Normal plumbing

The urinary tract is a complex blood filtration system. It rids the body of waste and excess water. Blood purification starts out in 2 richly vascular kidneys, which retain what the body needs and discard everything else as urine. The urine exits each kidney through the ureter, a long, slender tube that attaches to the bladder. Here, the urine is stored for later voluntary release into the piped urethra and then out into the world.

The dripping faucet

The ureters—vital conduits for normal urinary evacuation—can be wrongly positioned because of an embryologic glitch in a pup’s development. Instead of terminating at either side of the bladder’s midsection, 1 or both ureters open into a different spot, such as the urethra, vagina, or even uterus. Because the pump function of the balloonlike bladder is disrupted, urine trickles out constantly.

“It’s uncomfortable for a dog to be constantly leaking urine and wet all the time,” says Dana Clarke, VMD, DACVECC, assistant professor of interventional radiology at the University of Pennsylvania School of Veterinary Medicine in Philadelphia, “and it’s incredibly frustrating for the owner, especially when it’s a big dog.”

Ectopic ureters, often accompanied by other urinary tract abnormalities, are rare overall. However, they are the most common congenital (birth defect) cause of canine urinary incontinence.

Clinical presentation

Although ectopic ureter is a problem that exists at birth, the obscurity of housebreaking usually
delays diagnosis. Most affected pups do not land in the veterinarian’s office to address the issue until aged 6 to 12 months. Females compose 90% of cases and affected males typically present closer to 2 years old.

Ectopic ureter has been reported in littermates, but the mode of inheritance is not fully understood. The breeds most commonly affected are Labrador and golden retrievers, West Highland white and fox terriers, English bulldogs, Siberian huskies, and Newfoundlands. Ectopic ureter occurs rarely in cats and horses but has been reported in cattle, sheep, and pigs. Approximately 1 in 500 human babies are born with the condition.

Clinical signs in dogs include the following:
- Persistent wet hind end and bedding
- Regular urine dribbling, accompanied by episodes of normal urination
- Licking of the genital region, and urine scalding and rashes in the area
- Frequent bladder infections

Diagnosing ectopic ureter
Identifying ectopic ureter can be challenging because the condition is often mistaken for urinary tract infections or incomplete housebreaking. Routine testing, including blood work and urinalysis, is performed. Because urinary tract infections resulting from urine pooling in the urethra and vulva often accompany ectopic ureter, antibiotics are administered and sometimes provide mild resolution of signs. But for pups with ectopic ureter, the story just continues, as should the diagnostics.

Radiography and/or ultrasound can be performed to rule out bladder stones and anatomic abnormalities, but they do not display the thin ureters. To visualize these, an intravenous pyelogram—an x-ray that incorporates injected dye to visualize the ureters—or a CT scan is typically done.

These tests can be used not only to diagnose ectopic ureter but also to image damage secondary to the condition. Because the ectopic ureteral opening to the bladder or other organs is often blunt or partially blocked, like a twisted garden hose, urine can back up and swell the ureter (hydroureter) and the delicate kidney (hydronephrosis) that lies upstream.

Once ectopic ureter is confirmed via imaging and the chaos it has created within the urinary tract is clarified, the precise pathway of the ureters and their opening point(s) are identified with cystoscopy. Here, a scope is inserted to examine the lower urinary tract, trace the pathway of the terminal segment of the ureter, spot the location of the ureteral orifice, and assess urine flow through the opening.

Redirecting urine flow
The only way to close the puppy’s flood gates is through either traditional or laser surgery. The approach depends on the type of ectopic ureter present.

Most canine ectopic ureters are intramural. Rather than attach cleanly to the bladder, an intramural ureter tunnels through the bladder wall and opens into the wrong portion of the bladder; the opening may be choked.

An extramural ureter, on the other hand, may have a normal attachment but it hooks onto the wrong organ, such as the urethra.

For an intramural ureter, a neoureterostomy can be performed. Here, the bladder is opened surgically and a new opening is made at the appropriate point in the wall-entraped ureter. Any portion of ureter that extends beyond the bladder is excised.

For the preferred minimally invasive version of this procedure, a cystoscope-guided laser is inserted through the vagina or urethra and into the bladder to zap the ureter until its opening is well within the bladder and to destroy any overhanging ureter. “Endoscopy is the gold standard because it allows us to do both the diagnosis and the treatment in 1 procedure, with no restrictions for the dog afterward,” Clarke explains.

The extramural ureter is adjusted surgically by neoureterocystostomy. Here, the abdomen is opened and the ureter is detached from its abnormal location and reattached to the bladder.

Surgery does not make every dog completely continent, and success rates are lower in females. After surgery, some dogs need lifelong medications to stay dry, such as phenylpropanolamine, which improves urethral sphincter muscle tone.

Conclusion
The ectopic ureter can take the new owner down a path they never imagined when acquiring that cute puppy. But the good news is that therapeutic measures are available to turn a flaw into a manageable issue in the dog’s life.
Measuring blood pressure and managing hypotension in the surgical patient

During anesthesia, trends in blood pressure must be monitored to develop a protocol and manage hypotension.

By Tasha McNerney, BS, CVT, CVPP, VTS (Anesthesia)

Hypotension is one of the most common intraoperative complications seen in small animals under anesthesia. A variety of injectable and inhalant anesthetic drugs can cause varying degrees of hypotension triggered by numerous factors, including heart rate, preload, afterload, contractility, and systemic vascular resistance. Hypotension can lead to decreased perfusion in vital organs (eg, liver, kidneys, heart), which leads to reduced oxygen delivery. Veterinary technicians working with patients under anesthesia need to understand how to measure blood pressure, the factors that lead to hypotension, and how to properly address hypotension in these patients.

Measuring blood pressure

Palpating pulses in the anesthetized patient is essential. However, simply palpating a pulse is not a strong indicator of adequate blood pressure. When you are feeling pulse pressure, you are thought to be sensing the difference between systole and diastole. However, when anesthetic agents are on board, especially agents that cause vasoconstriction, you may feel a decreased pulse pressure despite normal blood pressure readings. Therefore, merely feeling a pulse should not be used as a barometer of your patients’ blood pressure.

There are 3 ways to measure blood pressure in patients that are under anesthesia.

Direct vs indirect measurement

Direct arterial blood pressure measurement involves placement of an arterial catheter and continuous readings via a pressure transducer. An appropriately sized catheter is inserted into an artery such as the dorsal pedal artery. Arterial cannulation can take a bit of skill because the tunica media in the arteries contains smooth muscle cells and elastic tissue and is thicker than that in veins. Once a catheter is secured properly into an artery, this measurement is easier to perform than you might think (Figures 1-3).

Critical patients undergoing surgery should be considered for this method, which is beneficial in the following scenarios:

- Patients that are hypovolemic due to trauma or hemoabdomen
- Patients with preexisting cardiovascular disease (eg, severe dilated cardiomyopathy)
- Patients undergoing procedures in which significant blood loss or large fluctuations in blood pressure are anticipated (eg, surgery in patients with pheochromocytoma)

Indirect methods of measuring blood pressure, such as Doppler ultrasonography and oscillometric measurement, are used more frequently in small animal practices than is direct arterial placement. Doppler ultrasonography blood pressure measurement (Figure 4) using a sphygmomanometer is preferred in cats and small dogs (<10 kg [~22 lb]). Oscillometric measurement involves use of equipment that automatically inflates and deflates a cuff to determine blood pressure continuously. This is probably the easiest of all the blood pressure monitoring options.

Some veterinary practices may be intimidated by the cost of equipment needed to measure blood pressure via direct arterial catheter placement. However, the equipment required to determine mean arterial pressure alone is inexpensive compared with equipment for indirect oscillometric measurement. In addition, arterial
catheters can be used to collect samples for blood gas analysis, which can provide valuable information, especially in patients with respiratory compromise.

**Blood pressure cuffs**

Regardless of which method you choose, keep in mind that a single reading is not used to determine treatment; instead, we look at trends in blood pressure readings. Also, remember that placement of the cuff is important. The most consistent cuff location in small patients is mid-forelimb.

For the purpose of this article, I will apply a mean arterial pressure of under 60 mm Hg to determine hypotension. If using a Doppler method, I will apply any readings of under 100 mm Hg systolic arterial pressure to describe hypotension.

Once a hypotensive trend has been identified, the next step is to work with the veterinarian to determine a course of action for correction.

**Treating hypotension**

There are several ways to treat hypotension once the underlying cause has been identified. First, it is important to record each patient’s preoperative heart rate to establish an average (base) resting rate for that individual. If your patient is bradycardic and hypotensive because of a decrease in heart rate, consider an intraoperative intravenous dose of glycopyrrolate (0.01 mg/kg) until the heart rate returns to an acceptable range. On the other hand, if your patient is bradycardic and hypotensive because of administration of an α₂-adrenergic receptor agonist (commonly called an α-agonist), such as dexmedetomidine, consider administering a reversal drug, such as atipamezole (0.10–0.30 mg/kg intramuscularly). If your patient is hypotensive due to the vasodilating effects of anesthetic inhalant agents, consider decreasing the dose of the agents.

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▲ Figure 1. Basic setup for placement and monitoring of arterial blood pressure. From left to right: pressure bag for sodium chloride (NaCl), heparinized NaCl bag, heparin 1000 U/mL, fluid bag spike and transducer appropriate for multiparameter monitor, appropriate-sized catheter, T set flushed with heparinized saline, extra heparinized saline flush, and medical tape to secure catheter.

▲ Figure 2. Placement of catheter into the dorsal pedal artery.

▲ Figure 3. Direct arterial pressure waveform shown during a surgical procedure.

▲ Figure 4. The noninvasive Doppler blood pressure method is a good way to monitor overall trends during anesthesia and treatment.
Norepinephrine acts on α- and β-receptors by increasing mean arterial pressure and peripheral vascular resistance. Coronary blood flow also increases. Norepinephrine may be beneficial in increasing mean arterial pressure in patients with sepsis or patients currently on β-blocking drugs such as atenolol.1

Often norepinephrine infusions are started at 0.10 to 0.20 µg/kg/min and can be increased by increments of 0.10 to 0.20 µg/kg/min as needed. It is important to note that norepinephrine is not usually the first choice for hypotensive patients that are otherwise healthy. It is often used in the treatment of vasodilatory shock and commonly administered with an inotrope (such as dobutamine) if myocardial depression is suspected.1

REFERENCES

Tasha McNerney, BS, CVT, VTS (anesthesia and analgesia), CVPP, is an author, lecturer, and administrator for Veterinary Anesthesia Nerds.

Dobutamine
Dobutamine is a synthetic catecholamine that acts on α- and β-adrenergic receptors, stimulating cardiac contractility, cardiac output, and coronary blood flow.

Ephedrine
Ephedrine is a noncatecholamine sympathomimetic agonist that stimulates α- and β-adrenergic receptors. Another benefit of ephedrine is improved oxygen delivery to tissues via increased hemoglobin. Ephedrine can also be administered as a single-bolus intravenous injection of 0.10 mg/kg.2

Low doses can cause an increase in cardiac output while simultaneously initiating a moderate increase in heart rate. The therapeutic dose ranges from 2 to 20 µg/kg/min.1

Dopamine
Dopamine is a short-acting norepinephrine precursor with α- and β-agonist properties (ie, binds to α₁-, α₂-, and β₂-receptors plus 2 dopamine receptors). The dosing schedule is important with this drug, as different doses can stimulate other receptors and thus trigger different effects. Medium doses (eg, 3-5 µg/kg/min) can stimulate β-adrenergic receptors that act as a positive inotrope and increase heart rate.1 Higher doses (6-10 µg/kg/min) stimulate α-adrenergic receptors that cause an increase in systemic vascular resistance. Doses higher than 10 µg/kg/min can trigger tachycardia and increased afterload, leading to decreased cardiac output.1

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ANESTHESIOLOGY

Inhalant anesthetic agents can also cause a decrease in cardiac output and, when combined with vasodilation, may lead to decreased organ perfusion. Increased circulating volume can be achieved by administering boluses (5-10 mL/kg) of intravenous crystalloid fluids, which will help if hypotension is secondary to hypovolemia and peripheral vasoconstriction. In some patients, reducing anesthetic depth and administering an increased volume of crystalloid fluids is not enough to correct hypotension. In these cases, the addition of colloids or inotropic agents should be considered. Colloidal solutions can be either natural (eg, albumin) or synthetic (eg, dextran, hydroxyethyl starch). Patients that do not respond to these treatments will need intervention with drugs to improve systemic vascular resistance and contractility. These drugs act on α- and β-adrenergic receptors. Stimulation of these receptors can have varying effects at varying doses.

Of course, before starting any therapy, talk with your clinician to verify both the drug and the dose.

Leak check!
Hover your phone’s camera over the smart code to learn how to check an anesthesia machine for leaks.
To have a successful career as a relief veterinary technician, you must realize your worth and relentlessly fight for what you deserve, according to Liz Hughston, MEd, RVT, CVT, LVT, VTS (SAIM) (ECC), a longtime relief veterinary technician in San Jose, California.

Data from the American Veterinary Medical Association show that more than 2300 relief veterinarians are practicing in hospitals across the United States. There are no statistics on the number of relief technicians currently working in the industry, but it certainly is a growing field, and Hughston was one of the pioneers. She transitioned to relief work in 2016—a decade into her career as a technician—because she no longer wanted to work in practice full time and wanted to use her background in education to consult, train, teach, and mentor other technicians. Four years ago, she created an online platform to promote her veterinary relief services and consulting work: VetTechXpert.

Relief work has given Hughston the ability not only to advocate for herself and other technicians but also to enjoy her second passion: traveling with her husband, Tom. So far, she is enjoying the experience but admits it has been tough to get jobs during the pandemic. In the meantime, she’s focusing on her advocacy work, mentorship, and consulting.

Hughston, who is also president of the National Veterinary Professionals Union (see “Hughston on unions”), a certified veterinary cannabis counselor, and credentialing committee chair for the Academy of Internal Medicine for Veterinary Technicians, shares her top tips for proving your value as a

Photography by Brian Klemm
As president of the National Veterinary Professionals Union, Hughston is in charge of forging and maintaining partnerships with other unions. “We’ve been incredibly fortunate to have large unions be interested in our industry,” she says. “They recognize that we are a mission-driven group of workers who care greatly for our patients, clients, and teammates. This unfortunately makes it easier for corporations to take advantage of us—which they’ve been doing for years and years.”

Hughston found that she was not alone in her frustration and joined the union. “I just felt like we had to do something to help make the support side of the veterinary profession sustainable,” she says. “For most technicians, this is not a stepping-stone job. It’s not a job a teenager does for a summer before they go to college. And there’s very little recognition of that, particularly in corporate leadership.”

Hughston says she is tired of seeing 20-year veterinary technicians and technician specialists leaving this field that they love for human nursing or something else where they can actually earn a living wage. “We need to find a way to make this a sustainable career for people so they can stay in it for the long haul,” she says, adding that the only way to truly generate change is by coming together and bargaining as a unit. “It’s all about creating solidarity with our peers and our coworkers and helping to fight for what we need,” she says.
that I work in the ICU [intensive care unit]. She could tell that was my passion, even though I didn’t realize it at the time. And so I started working in the ICU. I loved caring for the patients and learning both basic and advanced skills. I gravitated toward the emergency part in the ICU and loved critical care nursing.

**The nitty-gritty of relief work**

**What do you see as the pros and cons of relief work?**

Whenever someone tells me they want to work as a relief technician, I tell them there are a lot of opportunities. We truly are a hot commodity. Nearly every time I take my pet somewhere, once they find out that I am a relief technician, they ask me on the spot if I can work for them either on the phone or with curbside service. The trick is finding people who will pay you what you want. You have to show your value as a relief technician if you want to be able to make a living doing it. I’m fortunate in that I have a spouse, because it would be really difficult to make ends meet on my own. Relief work gives me the freedom to choose the shifts and the practices where I want to work. For me, that’s the best part of being a relief technician. You’re outside of the normal politics of the hospital.

**What is your advice to other technicians interested in relief work?**

Consult an accountant to make sure that you are covering your taxes, because that’s something a lot of people don’t think about when they go off on their own. As an independent contractor, you will be a 1099 worker as opposed to a W-2 worker, which is for permanent employees of a business. That means you’ll be paid directly by each practice with no taxes deducted, and you will need to file taxes differently than an employee. You also have to be really picky and create boundaries. Figure out what you’re willing to accept and sacrifice and what you’re not. That’s been a big lesson for me over the past 5 years. Doing relief work is a life change, but the independent relief contractors I know really love it. They say it’s the best thing they ever did, mostly because of the freedom.

**REFERENCE**


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Hughston and her husband Tom share their home with 4 fur babies, all of which are named after characters in Grateful Dead songs:

**Cherise** is a 15-year-old Pomeranian-terrier they adopted from a shelter when she was about 5 months old. The dog currently battles chronic kidney disease and inflammatory bowel disease, and lost an eye last year. “She’s our Velveteen Rabbit,” Hughston says.

**August West** (Augie for short) is an 8-year-old Chihuahua mix Hughston adopted from a client at her former workplace. “He is all Chihuahua—adorable but feisty!”

**Mister Charlie**, a 6-year-old tabby, recently had laser treatment for iris melanoma. “He’s got a super loud purr and loves to meet anyone who comes to the house,” Hughston says.

**Althea** the tortoiseshell is the baby of the clan. She will be 2 this summer and is a pistol. “She loves to chew on anything, especially paper and anything silicone (watch bands, pan handles, pot holders, etc),” says Hughston.
Our team at dvm360.com and Firstline® magazine asked Emily Shiver, CVPM, CCFP, to answer your questions about life in practice for managers, technicians, assistants, client service receptionists, and others. Got a question for her? Email us at firstline@mmhgroup.com. This month, Shiver shares tips for taming those angry clients.

“I’ve been waiting for 10 minutes. This is insane! I’m not going to tolerate this. I’m leaving and telling all of my friends, posting on every social media outlet, and leaving you a 1-star Google and Yelp review!”

Unfortunately, this exact scenario played out at my former clinic. The client walked in midmorning on a busy Friday. He had been written off 2 years earlier and demanded to be seen right away. My client service representatives were kind and warm, but he would not let up. The lobby was crowded with people and pets and he put on quite a show. After he exited the building screaming colorful language, the representatives approached me immediately to discuss how they could have handled that situation differently. So, what is the best way to deal with angry clients?

There are a handful of reasons why clients get angry. They love their pets but cannot afford the best care or they have unrealistic expectations or are under the influence. Sometimes emotions are high because, after all, pets are members of the family. No matter what has set off your client, here are some tactics to help defuse the situation.

When it goes too far

When dealing with an angry client, the first thing I do is ask whether we can move to a private area. Try not to come off as forceful. Remember, they want an audience. You can say something like “I can see how frustrating this is for you. I want to help you; come with me.” If they are really stubborn, they might not budge. At this point, I tell them that I am happy to help them but that we need to step into an examination room or even go outside. If the result is still no movement or a higher volume, I ask them to leave the premises.

Listening is key

One of the best ways to calm an angry client involves good

More Ask Emily
For more practice management insight, hover your phone’s camera over this smart code.
listening skills. Be warned: You might hear things you do not want to hear about your practice, your teammates, or even yourself, but try not to take anything personally. The client probably has not read *Emotional Intelligence 2.0* or taken the test, so practice social awareness and maybe they will eventually apologize.

**Be empathetic**

Some of my go-to empathy expressions include the following:

- “I completely understand. I would be frustrated, too.”
- “Thank you so much for sharing this with me. We cannot improve without feedback.”
- “I am upset as well. It is certainly not our goal to provide anything but a good experience.”

Sometimes the conversation takes a turn for the worst. The client might say, “There is no way you understand what I am experiencing right now” or “You aren’t upset, you just care about money and are going to let my dog die.” If the conversation goes in this direction, I typically let them know they are not in a place to discuss this. Then I excuse myself, letting them know I will return in about 10 minutes. Nine times out of 10, this works great, and when I return, they are ready to chat or have replaced themselves with someone more level-headed.

**Tell them your practice values**

Share your practice’s mission and core values with angry clients. For example: “Our goal is to care for your pet as if they were a member of our family.”

They may tell you that you have clearly missed the mark on your mission. Take the feedback with poise and grace and respond, “I am truly sorry we have not met your expectations. I do hope we can regain your trust and continue to provide care for your pet.”

Once clients become less emotional, they usually can explain what would make their experience better. Then you can work on a reasonable solution or compromise.

**The takeaway**

There are untamable clients in every industry. The goal is to make sure your team is prepared to handle them. I do not tolerate blatantly rude or disruptive behavior from clients despite our efforts and will ask them to leave the premises. You can do this.

The good news? With empathy, emotional intelligence, and effort, it is possible to turn these untamable lions into purring little kittens.
Insulinomas are a neuroendocrine tumor of the pancreatic beta islet cells, which compose a large portion of the islets of Langerhans and are responsible for insulin production. Insulinomas lead to overproduction of insulin and disrupt normal glucose homeostasis, leading to chronic hypoglycemia. Insulinoma is the most common pancreatic tumor in dogs, although the overall incidence is low. The tumor is rarely seen in cats.

Patients presenting with insulinomas often show clinical signs associated with severe hypoglycemia, including trembling, weakness, seizures, collapse, stupor, and/or ataxia. These signs are exacerbated by events that trigger a drop in blood glucose (BG), such as fasting, stress, exercise, or excitement. Blood work in these patients often shows severe hypoglycemia (30-50 mg/dL; normal range, 70-143 mm Hg) and high levels of insulin if a glucose:insulin ratio panel is performed. Because of the chronicity of hypoglycemia in these patients, they often have a higher tolerance for severe hypoglycemia and need less supplementation than acutely hypoglycemic patients. These tumors are usually malignant in dogs, and surgical resection is often necessary for therapeutic management.

Anesthesia challenges

Anesthetic management of these patients can be tricky. Careful assessment of BG changes should be paramount during the perioperative period for insulinoma removal. To avoid insulin surges, BG management during anesthesia should be aimed at keeping changes within 20 to 30 mg/dL of starting values.

Intraoperative insulin surges can predispose patients to developing hyperglycemia or diabetes in the recovery period. Severe hypoglycemia must be addressed because anesthesia can mask the signs associated with hypoglycemia (seizure, abnormal mentation, coma). Dextrose solutions are a treatment option, but they must be administered slowly and at low concentrations to avoid overcorrection. Glucagon may be administered to raise circulating BG concentrations by increasing the rates of both glycogenolysis and gluconeogenesis in the liver, but it is generally not a cost-effective treatment and results may be variable. Prednisone therapy can be initiated prior to surgery to increase BG by stimulating glucagon secretion, decreasing insulin sensitivity, and increasing gluconeogenesis.

According to correspondence with James A. Perry, DVM, PhD, from the University of Pennsylvania College of Veterinary Medicine in Philadelphia, results of a 2015 retrospective study showed that animals receiving prednisone prior to surgery were significantly less likely to develop diabetes following insulinoma removal.

Goals of anesthesia should aim to minimize stress and the associated sympathomimetic increases in circulating blood glucose to prevent an insulin surge that may worsen hypoglycemia. Anesthetic drugs that have similar effects, such as ketamine, may also need to be avoided. This can pose a difficult challenge in otherwise healthy patients that require more than an

Sweet dreams:

Use of low-dose dexmedetomidine for perioperative management of canine insulinoma

Judicious use of dexmedetomidine can be a useful adjunct in the management of dogs undergoing surgery to remove this pancreatic tumor.

By Nicole Shuey, BS, CVT, VTS (Anesthesia & Analgesia)
opioid or midazolam to facilitate catheterization and safe induction.

So, what other safe options are available? A 2013 study investigated the effect of medetomidine on plasma glucose and insulin levels in dogs with insulinomas and healthy dogs. The study showed that preanesthetic administration of medetomidine significantly suppressed insulin secretion and increased plasma glucose concentration in dogs with insulinomas.

Case report

Enter Biscuit, a 13-year-old, neutered terrier mix. This feisty dog was diagnosed with an insulinoma in December 2019 but, because of owner finances and COVID-19, was unable to have a partial pancreatectomy until July 2020. Biscuit presented to his primary care veterinarian for routine dental care and on preoperative blood work was noted to have a BG of 41 mg/dL. His preoperative diagnostics were otherwise unremarkable, and he had no clinical signs of hypoglycemia at the time of the appointment. The dental procedure was postponed after verifying the results throughout the day and confirming persistent hypoglycemia. A glucose:insulin panel was submitted with results suggestive of insulinoma (Figure 1). An abdominal ultrasound a few months later confirmed the presence of a pancreatic tumor, and surgery was scheduled.

Biscuit was a finicky eater, so feeding several small meals a day was difficult for the owner. Ideal fasting times for patients with insulinoma are 6 to 8 hours. The owner was also unable to give a small meal after midnight, so the fasting time for this patient was longer than ideal. On presentation the morning of surgery, Biscuit’s blood work showed a BG of 38 mg/dL and lactate level of 4.3 mmol/L, but no other abnormalities or clinical signs of hypoglycemia were noted. With a severely low glucose level, it is reasonable to think that dextrose should be administered prior to anesthesia to provide a higher starting glucose level. However, this may prove deleterious because a bolus or high dose of dextrose intravenously (IV) may precipitate an insulin surge and worsen hypoglycemia.

Gastrointestinal (GI) issues and pancreatitis are also common postoperative complications of partial pancreatectomy, so premedications should aim to minimize GI adverse effects and ease return to spontaneous feeding. Biscuit was a nervous dog, and premedication with an opioid, either alone or with a benzodiazepine, was unlikely to facilitate low-stress catheter placement and induction. Therefore, Biscuit was premedicated with 1 mg/kg maropitant subcutaneously (SC), 1 µg/kg of dexmedetomidine intramuscularly (IM), and 0.3 mg/kg butorphanol IM. This allowed stress-free placement of an IV catheter, connection to monitors, and easy preoxygenation.

The anesthetic protocol

Biscuit was induced with a midazolam and propofol to reduce sympathomimetic increases in BG, decrease cerebral metabolic oxygen consumption, and reduce glucose utilization. He was maintained on isoflurane in 100% oxygen. BG measured immediately after induction showed only a slight increase to 69 mg/dL. Loading doses of lidocaine and fentanyl at 1 mg/kg and 5 µg/kg, respectively, were administered, and a constant-rate infusion (CRI) with fentanyl (7.5 µg/kg/hr), lidocaine (25 µg/kg/min), and dexmedetomidine (0.5 µg/kg/hr) was initiated.

At higher doses, dexmedetomidine causes significant vasoconstriction and bradycardia in most patients. However, at lower rates (0.5-1 µg/kg/hr), hypotension and reflex bradycardia are often minimized, as occurred with Biscuit (Figure 2). An arterial catheter was placed to allow invasive blood pressure monitoring and serial BG sampling. BG measurements were obtained every 30 minutes during surgery and every hour postoperatively via glucometer (Figure 3). Changes in BG were as follows:

Figure 1. Results of Biscuit’s glucose:insulin panel were suggestive of insulinoma.
Surgical outcome and recovery

Surgery and anesthesia were uneventful. Biscuit was placed on a ventilator due to hypercapnia (end-tidal carbon dioxide, 52 mm Hg) and had mild hypothermia intraoperatively (lowest temperature 95.3 °F). The tumor was visualized and extended to the head of the pancreas (Figure 4). A partial pancreatectomy and abdominal exploratory procedure were performed. The dexmedetomidine/fentanyl/lidocaine CRI was decreased while the surgeon was closing the abdomen and discontinued postoperatively, after which Biscuit received 0.03 mg/kg buprenorphine IV and was maintained on a lidocaine CRI for continued analgesia. For prophylactic GI support, 0.4 mg/kg metoclopramide SC and 1 mg/kg pantoprazole IV were administered in recovery. The goal was to minimize GI adverse effects and prevent breakthrough pain that may cause stress-related increases in BG.

Postoperative nursing care in these patients is crucial, because some patients may have refractory hyperglycemia or even become transiently diabetic after insulinoma removal, necessitating exogenous insulin supplementation. In this case, the use of low-dose dexmedetomidine may have prevented the need for hypoglycemia treatment with a dextrose CRI, as well as the resulting insulin surge and refractory hypoglycemia. Decreasing plasma insulin level with dexmedetomidine kept Biscuit’s blood glucose levels within an ideal therapeutic range in the peri- and postoperative periods. Biscuit’s stress level and pain were well controlled throughout the process and, with the help of a single dose of capromorelin oral solution (Entyce; Elanco), he returned to spontaneous feeding the next day and was able to go home on oral medications. Since surgery, Biscuit’s recovery has been uneventful with no signs of hypoglycemia, hyperglycemia, or pancreatitis. Recent blood work showed a return to normal glucose (BG 89 mg/dL), with no other abnormalities noted at his recheck exam. He will continue to be monitored every 2 to 3 months for signs of metastatic disease.

Conclusion

Insulinoma cases present unique challenges in anesthesia management and glucose homeostasis. Biscuit was one of several cases in which the use of low-dose dexmedetomidine has proved to be a useful tool in the perioperative management of canine insulinomas. More research is needed to discover all the effects of dexmedetomidine as an adjunct in the management of insulinoma cases, but so far it has a promising start.

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What was that?

Top 10 client mispronunciations

Can you guess the true meanings of these head-scratching terms you might hear from pet owners?

By Michael Nappier, DVM

For most of us, mastering the language of veterinary medicine was no easy task. So it should be no surprise that our clients sometimes have trouble communicating their pets’ needs. It is our job to do our best to understand what they are trying to say and to provide what their pets need. Although our first instinct may be to burst out laughing at the alphabet soup, that’s never a good idea. Instead, kindly correct them when they get it wrong. The goal is to help them stay informed, not to humiliate or undermine them.

Test your deciphering abilities (and share a giggle with your colleagues) by taking this short quiz, then check your answers below to see how well you scored.

Michael Nappier, DVM, is assistant associate professor of community practice in the Department of Small Animal Clinical Sciences at the Virginia-Maryland College of Veterinary Medicine in Blacksburg, Virginia.

1. Heatworms: Shall we say “flamethrowers.”
2. Roundworm/ringworm: Not really sure, but at least it’s round?
3. Bordello or Portobello vaccine: I don’t think that’s the right “cathouse,” but I do like those mushrooms.
4. Spade-ed/Newtered: What do you need a small shovel and an amphibian for?
5. Prostrate problems: Probably don’t want to take those lying down...
6. Pyrometra: Burn, baby, burn?
7. Gabakitten: OK, this one is kind of true.
8. Distemperament shot: Shouldn’t you want the goodtemperament shot?
9. Rimadrill: Is that a new type of power tool?
10. Bruce Willis testing: If you’re positive, do you Die Hard?

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