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Vet Tech Class of 2016

The NOVA Veterinary Technology program is designed to develop the latest techniques and skills in students pursuing a career as a licensed veterinary technician or related position in animal hospitals, diagnostic laboratories, research laboratories, institutional or pharmaceutical animal colonies, zoological parks and as federal or state livestock inspectors. The two year accredited program culminates with each student taking the Veterinary Technician National Exam.

The Class of 2016 is comprised of 35 uniquely talented individuals from many backgrounds. We would like to extend our thanks to the many doctors and technicians who have helped us achieve our goals, both at NVCC and in the workplace!

**Class of 2016:** Elizabeth Alexander, Olivia Armand, Stephanie Barbe, Maggie Burgwin, Baden Caspari, Holly Cooper, Kim Corcoran, Rachel Cramer, Megan Crisler, Jamie Czarny, Natalie Dubishar, Tori Fitzpatrick, Elizabeth Furr, Rebecca Givens, Josh Greif, Melissa Guy, Leslie Heffron, Jessican Jenkins Wille, Min Kim, Ashleigh Knee, Judith Lainer, Alex Leslie, Allison Lundquist, Jennifer Miller, John Nelson, Ricky Norton, Kristin Oland, Josh Patak, Stephanie Plourd, Adriana Romero, Christine Sabotta, Allison Silva, Jessica Triggs, Dave Vogt and Casey Wright.
The Role of Veterinary Behaviorists in Animal Care

Behavioral issues are a major concern among clients of veterinary practices, and one of the leading causes of people giving up their pets. There are many places pet owners can turn to for help, but with so many resources available, it can be confusing to pet owners who to trust, so often they come to the staff at their local veterinarian’s office for guidance.

When it comes to simple things like puppy house-training or teething, sometimes a little client education is all they need. More complex but common behaviors can be referred to credentialed trainers that your practice trusts. It is important that primary care providers are able to triage behavioral crises and can identify situations where there is danger to the pet, their owners or other people, and/or the owner is unable to tolerate the behaviors and is about to relinquish the pet. Sometimes owners have gone through all available resources, are in situations that are very serious or involve an exotic species whose behavior is less familiar. Other times one may think behavior is at the root of a medical issue, or vice versa. This is when it may be time to recommend a consult with a veterinary behaviorist.

Veterinary behaviorists undergo advanced training specifically in animal behavior. In the United States, board-certified veterinary behaviorists are designated as Diplomates of the American College of Veterinary Behaviorists (ACVB), a sub-organization of the American Veterinary Medical Association (AVMA). This designation is the culmination of many years of training; either in a specific residency program or individual mentorship, written case reports, published research and a two-day exam. As with humans, the behavioral and physical health of animals is often closely intertwined, and veterinary behaviorists are the professionals most equipped to untangle it. Examples of behavioral issues that tend to be particularly involved with medical conditions include aggression towards people or other animals, anxiety and inappropriate elimination. It is important to note that veterinary behaviorists are not just limited to treating dogs and cats. They also work with exotics and commonly consult with wildlife facilities, zoos and aquariums in order to improve animal wellbeing in captivity.

Environmental Enrichment for Pet Parrots
by Judith Lanier

The American Veterinary Medical Association (AVMA) reports that as of 2012, over 3% of US households have pet birds with over 8 million birds total making birds the third most common household pet after dogs and cats. Many of these birds are in the ‘psittacine’ family, which simply means that they are parrots. Unfortunately, many people do not understand parrots, and this can lead to a number of undesirable traits. Screaming, biting, throwing food, and feather plucking are just a few unsavory behaviors that can develop, and as a result, many parrots are given up to shelters, rescues, or other people because their owners cannot figure out how to stop it.

Parrots have emotional needs and can be susceptible to the chronic stress of not having appropriate nutrition, they perceive threats from humans and other species that we may not sense ourselves, and they need to have an outlet for their natural behaviors such as screaming. Realistically, humans are not going to meet the bird’s social and environmental enrichment needs, however, we can offer alternatives to make their lives more fulfilled.

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Common Exotic Animal Emergencies

By Baden Caspari

When working at an emergency practice, there will likely come a time that a client may call with questions regarding their exotic animal. Due to the specialized medicine, handling, and other variables of exotics, many veterinarians and staff may not be equipped to handle these emergencies, however, it can be useful to be able to advise a panicked client as to whether their situation is a true emergency. Below are a few common exotic animal emergency situations with suggestions on how to advise owners. If your practice is unable to see these pets, make sure that you have information on the nearest practice in the area that can.

GI Stasis

The biggest problem for our hind-gut fermenting herbivorous mammals (rabbits, chinchillas, and guinea pigs specifically) is GI Stasis. The causes of GI stasis can stem from tooth issues to gas build-up, stomach discomfort, parasites, pain, change in feed, stress, infection, or even cancer. If exotics stop eating for an extended period of time, the GI tract slows, body temperature drops, and unless corrected, the body can eventually systematically shut down resulting in the death of the animal. A common presentation is not eating its regular food, hiding and not wanting to move and not taking treats. Veterinary personnel should recognize the danger and inform the owner of their concerns. The animal should be seen by a veterinarian as soon as possible. Until that time, it should be kept in a comfortable cage with food, water and heat support.

Prolapse

For avian and reptile species, cloacal prolapse is a common emergency. In birds it can result from egg binding issues, disease processes, or over sexual stimulation. In reptiles it can be from parasites, egg laying issues, as well as other disease processes. The longer tissues are externally misplaced, the more serious the problem becomes. When internal tissues dry out, necrosis can occur, causing the situation to worsen and often require surgical intervention. The best advice is to bring the animal in as soon as possible. However, with reptiles there are several tips that the owner can try first. They should try soaking the prolapsed tissue in a warm sugar-water mixture for a few minutes. This can potentially shrink the tissues enough for them to be gently placed back inside the body. A whole body warm water soak for 15 minutes can help rehydrate the tissues and the animal. For both birds and reptiles, the tissues need to be prevented from drying out until a veterinarian can treat the animal. Sterile lubricant (KY jelly) can be applied liberally as often as possible to keep the tissues moist until getting to a veterinarian.

Avian Respiratory Distress

Birds are designed for flight. This design includes air sacs throughout the body to breathe and remain light enough for flight. Any bird in respiratory distress is a true emergency that needs to be seen as soon as possible. If the bird is visibly having to work to breathe; which includes rocking back and forth when breathing, tail-bobbing (the tail moving up and down while breathing), and open mouth breathing, then it is a true emergency. The best advice to give the owner is to get the bird into an incubator set-up; which can be accomplished by a flat bottomed cage (a small aquarium will work), provide food and water, set a heating pad to low and place it underneath the cage, and partially cover the cage with a towel.

Bleeding

Any bird that is having bleeding should be considered an emergency due to a lower blood volume than most animals because these animals are designed for flight. Reptiles and small mammals, as long as the bleeding can be stopped relatively quickly, should be watched closely for any further bleeding and brought to a veterinarian if any additional bleeding occurs.

These are only a few examples of some commonly seen exotic animal emergencies. Veterinary staff should be able to give advice to owners calling with questions. Remember, if you are uncomfortable advising an owner about their exotic pet then please get them to a staff member who does, or be able to direct them to another hospital or resource that may help them answer their questions.
Before referring a pet to a veterinary behaviorist, it is important that primary care veterinarians and technicians first make sure clients can get the most out of their appointments. A behavioral consultation, a complete medical history should be obtained to rule out as many medical problems as possible and make sure clients have given other options, such as training, evaluation and treatment, a fair chance. Baseline diagnostics and basic blood work should be acquired to rule out the more obvious potential medical factors that could be an underlying cause of the behavioral issues. It is best that primary care providers communicate with their client’s veterinary behaviorists in order to provide them a full picture of the pet’s situation. Additionally, after the initial consultation, the behaviorist designs a plan of action that is often carried out by the primary care veterinary staff and potentially trainers. Due to distance, time and cost it is often impossible for the veterinary behaviorist to be fully responsible for all follow-up, although they usually make themselves available via email or phone consults for a certain time period after an appointment (see Figure 1).

Figure 1 (from Martin et al. 2014)

Like medical care, there is also a preventative aspect to behavioral care in which veterinarians and technicians play a huge role. It can start before a client even brings a new pet into the home by advising them on how to select the right type of pet for them depending on whether there are children in the household, their work schedule and living environment. New pet parents should be advised in best training practices and given trusted resources and trainers to use. It is also important to incorporate general behavioral questions when obtaining a medical history to track the progress of individual patients. These practices, partnered with trained specialists like veterinary behaviorists, should improve the wellbeing of patients and clients while preventing more pets from winding up unwanted in shelters.

Low Level Lase Therapy and Chronic Pain Management
By Alex Leslie

Low-level laser therapy (LLLT or “cold” laser therapy) is a non-invasive alternative treatment for chronic and post-operative pain in animals.

Although laser therapy has primarily been used for wound healing in the past, in recent years it has proved to be effective in managing chronic pain for conditions like osteoarthritis, muscle pain, and injuries to tendons, ligaments, and muscles. Laser therapy is thought to have an anti-inflammatory effect similar to non-steroidal anti-inflammatory (NSAIDs) and is also considered to provide analgesia for joint pain by blocking transmission of pain receptors to the brain. Laser therapy is still a controversial topic in medicine and despite hundreds of studies and published papers on the use and efficacy of lasers, there are still skeptics. Recent studies do demonstrate a marked improvement in both healing and pain management with the use of laser therapy.

Although laser treatment is a useful rehabilitation tool, it doesn’t come without precautions. Lasers can cause irreparable retinal damage. Protective eyewear should always be used, and the patient’s eyes should be covered as well during their treatment. Laser therapy is contraindicated for ophthalmic use and over metal implants and screws, in pregnant animals, growth plates, any neoplasia or abnormal growth, and the thyroid glands.

Despite these avoidable risks, laser therapy has demonstrated its use in the management of chronic pain in veterinary patients. It is easy to use, non-invasive therapy that has multiple applications, and can add to the range of treatments offered at veterinary clinics.
Effective Pain Management

By Rachel Cramer

Veterinary technicians play a vital role in ensuring their patients have effective and adequate pain management before, during, and after surgical procedures. The most effective pain management approach includes multi-modal analgesia, which allows for a lower dose of each drug while providing adequate pain relief for the patient. This multi-modal approach helps mitigate the negative side effects from each drug by utilizing a lower dose while promoting the overall effect of pain management.

Pre-operative pain management includes epidurals and analgesic protocol in pre-induction medications. Unlike traditional pain relief, including analgesia in the pre-operative protocol anticipates the pain that the patient will feel intraoperatively and preemptively provides pain relief. Using an opioid in conjunction with a sedative provides analgesia in combination with sedation, adequately preparing the patient for surgery and helps manage pain during surgery. This allows the technician to use less anesthetic gas as the patient will feel less pain and will therefore be less responsive to surgical stimulation.

Epidurals and local blocks provide localized anesthesia/analgesia and in combination with pre-operative pain medications can provide pain control both intraoperatively and post-operatively. Since localized anesthesia/analgesia provides pain relief to a specific area of the body, they can be used in conjunction with system-wide pain relief. Localized blocks include topical and local infiltration, circumferential ring nerve blocks for feline declaws, dental nerve blocks for extractions and more invasive dental procedures and intra-articular nerve blocks for orthopedic surgeries involving incisions into the joint space. Epidurals affect the caudal body and provide effective pain relief for rear limb procedures and abdominal procedures. The range of localized anesthesia and analgesia options allow the veterinary technician to provide localized pain control for every procedure.

Since many pain relievers only last 6-8 hours, analgesia may also be required intraoperatively for more painful procedures. A TPLO surgery may only require an epidural and pre and post-operative pain medications whereas a limb amputation will require a more comprehensive and cohesive pain management protocol. An epidural and pre-operative analgesics can be combined with an opioid CRI during the procedure in order to provide consistent pain control to the patient during surgery. Providing a CRI during surgery also gives the patient some short-term post-operative pain control, which allows any post-operative pain medications to take effect.

Post-operative pain control can often prove even more important than pre or intraoperative pain control. Approximately 3-4 hours post-operatively (depending on the length of the procedure and whether or not an opioid CRI was given intraoperatively), the patient will experience the pain of their procedure. Many options exist to relieve this pain-CRIs, injectable medications, Fentanyl patches, and oral NSAIDS can all effectively manage post-operative pain. The post-operative pain management protocol will vary from patient to patient and procedure to procedure. The technician’s discretion can prove invaluable in assessing postoperative pain and reporting findings or concerns to the veterinarian.

One of the most important roles a veterinary technician can play is tailoring a pain management plan for each individual patient, taking into account the procedure, the patient’s individual needs, and the medical history of the patient. Effective pain control can make the difference between a smooth anesthetic event and one filled with pain and discomfort.
Ectoparasites in rabbits

By Maggie Burgwinn

Rabbits are a great pet, but as with any pet, they are prone to getting disease, infection, and parasites. Ectoparasites are found outside or on the body itself. When infested with ectoparasites, the average lifespan of a rabbit can be greatly reduced. Owners should be aware of the signs and symptoms to watch for so that their rabbit does not become ill from an infestation.

One of the most important ectoparasites in the rabbit is the mite. There are many different mites including the ear mite, the fur mite and mange, a mite of the skin. *Psoroptidae*, commonly known as the Rabbit ear mite or Rabbit ear canker mite, live in the ear canal of rabbits. They are transferred by direct contact from host to host. Patients that are diagnosed with ear mites will have inflamed and sensitive ears and may also present with head shaking and possibly ear drooping. The mites are usually accompanied by a crusty appearance, as well as an ear infection.

The fur mite, or *Cheyletiella parasitivorax*, is often referred to as ‘walking dandruff’ because of its small white appearance and because it is found throughout the fur. The fur mite is spread by direct host to host contact and can be diagnosed with a skin scraping. The treatment of choice is Ivermectin.

The flea, *Odontopsylla multispinosus* (the giant eastern rabbit flea) and *Cediopsylla simplex* (the eastern rabbit flea), is an ectoparasite common to rabbits. These two fleas are similar but prefer different parts of the body. *O. multispinosus* are most commonly found around the head and neck, whereas *C. simplex* are usually found at the base of the tail. Rabbits with fleas will present itchy and you may find small red spots or flea bites upon examination. When treating a patient for fleas, it is important to remember to treat all life stages (egg, larva, pupa and adult) to insure that the eggs do not hatch and cause another life cycle. The rabbit’s environment should be treated as well.

Lastly, there are lice. Rabbit louse is known to the medical field as *Hemodipsus venticosus*. It is not a zoonotic parasite. *H. venticosus* is found within the hair coat of the patient and transferred from direct host to host contact. The parasite is not commonly found in domestic rabbits but if one does become infested it has a great impact on its host. Physical exam findings can include anemia, hair loss, and an unthrifty hair coat.

Each ectoparasite found in rabbits has its own treatment. Owners need to be aware of the responsibilities that come with owning a rabbit and should be aware that rabbits can contract many infections and parasites, some of which are zoonotic. One must know the clinical signs to watch for when a parasite is suspected and should not hesitate to bring the rabbit in to see the veterinarian if they are concerned. Infestations of these parasites can lead to infection and even death if not treated properly. If a rabbit is found to have one of these parasites the owner and veterinarian should work together to agree on a treatment plan.
Veterinary Technicians in the 21st Century

By Casey Wright

Veterinary Technicians are an integral part of the running of any animal hospital or practice. The role of technicians has expanded from performing basic animal restraint and cleaning kennels to being a critical, highly trained and skilled members of the veterinary healthcare team. The education required for veterinary technicians has evolved alongside the growth and advancements in veterinary medicine. In 1973 the American Veterinary Medicine Association, or AVMA, accredited the first two animal technician degree programs. Forty years later in 2013, there were over 200 accredited veterinary technology degree programs in the United States and more than 80,000 veterinary technicians actively working in veterinary facilities. Technician education has evolved even further with The National Association of Veterinary Technicians in America or NAVTA creating the Committee on Veterinary Technician Specialties (CVTS) in 1994 to allow technicians the opportunity to "attain a higher level of recognition for advanced knowledge and skills in specific disciplines." These fields of study include anesthesia and analgesia, clinical pathology, clinical practices, dentistry, dermatology, behavior, emergency and critical care, surgery, internal medicine and equine medicine. Because of the specialized education now available for veterinary technicians, we also have the opportunity to work in a variety of settings from general practice to specialty practice or corporate practice, to zoos, aquariums, educational facilities and in research.

With the expansion of responsibilities and the available education, veterinary technicians are currently held to a higher standard than previously. The technician must be able to perform equally well as a radiology technician, pharmacy technician, surgery technician or dental hygienist. One of the more important roles technicians perform is that of an educator. Technicians work directly with clients to provide healthcare education on disease prevention, proper medicating techniques and all the needs of the animal.

Technicians must also keep up with new technology used in veterinary medicine. Modern technology has made testing, treating, diagnosing and communicating easier, more efficient and effective in improving the health of pets. Digital X-ray machines and laser therapy to promote healing in surgical and orthopedic cases, have been gaining favor in veterinary medicine and the technician is frequently responsible for its administration.

Veterinary medicine is seeing a rise in importance of specialized and dedicated technicians. The Veterinary Technicians of the 21st Century have grown in number; increased their responsibilities in practice and hospital environments, and continue to expand their knowledge in new technology while maintaining the bond with clients and their pets. The Veterinary Technician is an integral part of today’s veterinary practice and the possibilities for growth as a technician continue to expand.