TAKING WING
WORKING RAPTORS
AT THE AIRPORT

THE LIFE OF AN ANESTHESIA NERD
TRAUMATIC WOUND MANAGEMENT
REGENERATIVE MEDICINE OVERVIEW
SUPPORTING THE MARGINALIZED IN OUR COMMUNITIES

SEE INSIDE
FOR MEMBERS-ONLY TEAR-OUT POSTER
RECOGNIZING PAIN IN YOUR ANIMALS
SO STRONG SO SAFE

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Two things make me uneasy: flying and large birds. So I avoid both. Sure, I feed a plethora of winged creatures (Steller’s Jays, Ring-necked Doves, Anna’s Hummingbirds, finches, and both Pileated Woodpeckers and Northern Flickers) from our back deck. I’ve even mustered enough courage to gently wrap a towel around a few errant birds who find themselves flying again and again against our glass railings to assist them with ‘up and over.’

But learning about how people train and then work with raptors on a daily basis to keep travellers and communities safe was eye opening. I’m in awe of the skill and courage these people show as they go about their work. Veterinarians, too, daily deal with these birds who, I imagine, are more difficult to assess and treat than, say, my tiny new Chihuahua, Ella, a recently arrived rescue found wandering the streets of California.

So, I was very pleasantly surprised, as I awaited her first check-up at her veterinary clinic, to see two of the parrots rescued from Greyhaven Exotic Bird Sanctuary (see our story in the June 2017 issue of West Coast Veterinarian). I was able to get quite close, though I lacked the requisite courage to touch them. I was delighted to learn how well they were settling in at their new owner’s home, how much affection she has for them, and that each one has a distinct personality.

As you read the articles in these pages, please pay particular attention to those companies who advertise with us (as well as those who sponsor tables and CE sessions throughout the province). The advertisers in the pages of West Coast Veterinarian provide much needed revenue that allows us to pursue the stories you are reading today. Please support (and thank) those companies you see in our pages; and if a particular company you like is missing, maybe encourage them to support the Chapter through quarterly advertising. Or send me a contact name and number, and let us handle it here at the office.

Email: wcveditor@gmail.com

TO THE EDITOR
Letters from members are welcome. They may be edited for length and clarity. Email us at wcveditor@gmail.com.

ON THE COVER
Airport bird control. Photo courtesy of Ken Langelier

FROM THE EDITOR
CLARE TOMPKINS, BSc, DVM, graduated from UBC 1981. She is the past recipient of the Christofor Award in Animal Welfare and the CVMA’s Humane Award.

MARGA VON KESSLING, PhD, grew up on a cattle ranch in British Columbia. She joined UBC’s Animal Welfare Program in 2002, and was appointed as a NSERC Industrial Research Chair in 2008. She is recognized internationally for her research on the care and housing of dairy cows and calves.

DANIEL WEARY, D Phil, is a Professor and NSERC Industrial Research Chair at UBC. He studied biology at McGill and Oxford, and went on to co-found UBC’s Animal Welfare Program where he still works and co-directs this active research group. He was recently awarded UBC’s Killiam Research Prize.

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FROM THE CVMA-SBCV CHAPTER PRESIDENT

I love that veterinary medicine allows for continual learning opportunities. For me, this is the sticking power in my ability to be stimulated in my profession and stay in it. After years of working emergency medicine, I have recently changed over to the general practice side of things. Imagine my dismay at having to do the dreaded dentistry, after years of never wanting to touch a tooth with a ten-foot pole. I never thought I would enjoy this as much as I have. I have also signed on to a contract at a cats-only practice—something else I don’t think I would have previously fully appreciated. I have learned so much about our feline patients in such a short period of time, in particular that they really like to do things their own way. I wonder what else lies ahead of me in this endlessly rewarding profession.

Continual learning also happens for me in my role with the CVMA-SBCV Chapter. I have had great mentorship through our Board of Directors, many of whom have “been there and done that” before my time in veterinary practice. I can always look to them when I need advice on a particular Chapter topic or issue. Our Executive Director has a world of experience at her fingertips, so all of us on the Board of Directors learn from her as well. And on it goes.

Another way for me to continuously learn is through my duties as President of the Board. One of my favourite responsibilities is my attendance at the AGMs of other western provincial associations. There, I network and learn what the other veterinary medical associations are doing for their members. Topics and issues that they face are often very similar to our issues. Their solutions to problems are shared with our Board of Directors and in turn make us a better Chapter. I am going to Winnipeg in a few weeks to enjoy some cold weather and some wonderful veterinary company. Stay tuned.

In January, Al Longair, the CVMA-SBCV Chapter Vice President, went to Victoria to meet with the Lieutenant Governor about the recent West Coast Veterinarian story on Olive, the unofficial First Dog of BC, and the contribution of veterinarians to communities throughout the province. It is vital for the Chapter to continue to highlight the important role that veterinarians hold in protecting animal and human health.

The CVMA Annual Conference will be held in Vancouver, July 5-6, in the new JW Marriott Parq Vancouver hotel, next to BC Place. The Conference will offer many lectures, several wet labs, a trade show room, and plenty of social events. This event will welcome veterinarians from across Canada, so it will be a neat opportunity to learn and mingle at the same time.

The Chapter will also be hosting our 2018 Annual Conference in November. We have booked Dr. Marty Becker as our keynote speaker, which will undoubtedly be informative. Our Continuing Education Committee works hard year-round to secure speakers on topics of interest and relevance. If you have any recommendations for future speakers or topics, please let us know.

I hope you all received the Chapter’s Report on the recent CVBC General Meeting. The Chapter believes in transparency between the College and BC veterinarians. We also believe that, as an association, we can help bridge some of the communications between the College and our members. We wish to be a sounding board for our members and ask questions to the College for clarification on your behalf.

As always, please let us know if there is anything your Chapter can do for you, or give us suggestions for what we can improve on.

Sarah Armstrong, DVM, graduated from OVC in 2007. Following graduation, she worked full time in general practice and worked part time at a local emergency practice in Southern Ontario before moving to Vancouver, BC, where she currently works as a feline veterinarian.

ENDERBY VETERINARIAN DR. SUSI CIENCIALA WINS INAUGURAL DR. CAROL MORGAN MEMORIAL AWARD

Sarah Armstrong, DVM, graduated from OVC in 2007. Following graduation, she worked full time in general practice and worked full time at a local emergency practice in Southern Ontario before moving to Vancouver, BC, where she currently works as a feline veterinarian.

The winner of the inaugural Dr. Carol Morgan Memorial Award is Dr. Susi Cienciala. The award supports continuing education for veterinarians in Canada and is named in honor of former BCSPCA board member Dr. Morgan, a tireless advocate for animal welfare and ethical veterinary practice, who passed in 2015. Dr. Cienciala is an equine veterinarian at Deep Creek Veterinary Services in Enderby. Her goal is to bring the science of how horses learn to veterinary students in Canada, to both improve the welfare of their patients and to keep them safer as equine veterinary practitioners.

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he CVMA is part of the Coalition for Small Business Tax Fairness, which opposes the federal government’s tax proposals that would dramatically change the way incorporated small businesses are taxed in Canada. Veterinarians with businesses should work closely with accounting professionals to understand implications to your individual situation. Read the latest information at www.smallbiztaxfairness.ca.

Effective December 1, 2018, a veterinary prescription will be needed to use medically important antibiotics (MIAs) in animals. Health Canada is moving a number of MIAs approved for veterinary use before 2004 to the Prescription Drug List. Health Canada will establish the same level of oversight for those MIAs approved before 2004 as for those approved after. Visit the Responsible Use of Medically Important Antimicrobials in Animals section of the Government of Canada website for more information. In addition, as of November 13, 2017, these antimicrobials can no longer be imported for own use. MIAs are available with a veterinary prescription, from a veterinarian or pharmacist, or as a mixed medicated feed from a feed mill. The CVMA is engaged with the Veterinary Drugs Directorate through a sub-committee of the Canadian Animal Health Products Regulatory Advisory Committee. Visit www.canadianveterinarians.net/policy-advocacy/veterinary-oversight-of-antimicrobial-use-in-canada for more information.

The Emerging Leaders Program (ELP) offers an opportunity to explore approaches to personal and professional accomplishments and working relationships. The 2018 ELP takes place on July 5 and 6, during the annual convention in Vancouver. CVMA members who graduated within the last ten years (2007 or later) can apply for full sponsorship to participate (up to two sponsored participants per province will be selected). Visit the Emerging Leaders Program page under the Science & Knowledge section of our website for more information. Applications are due March 23, 2018.

The CVMA has moved its membership management system to a new platform. Access the new CVMA membership portal by visiting www.canadianveterinarians.net and clicking the Login link at the top of the home page. Please note that your CVMA login credentials have changed to email and password; you should have received an email with your personal login information. Log in to review and update your profile and reset your password. Please notify the CVMA if you experience any technical difficulties.

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Dr. John Brocklebank retired as Deputy Registrar of the College of Veterinarians of BC effective December 31st, 2017. John has been with the College since September 2004, and he has decided it is time to pursue new and resurrected interests. He expressed to Council and to the Registrar his gratitude for the privilege of having served the College and extended similar gratitude to all registrants; the public; and current (and former) staff, inspectors, and committee members who have assisted him over the years.

The wealth of his experience and institutional knowledge will be greatly missed. The CVBC thanks him for his years of dedicated service, as does the CVMA-SBCV Chapter, and we wish him all the best in the future.

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One of the greatest pieces of advice I have ever received is to always have something to look forward to. Here at veterinary school, that advice is particularly useful. Our days are filled with long hours of lectures to accommodate the breadth of our curriculum. While academic subjects remain our focus, it is often extra-curricular involvement that offers unique opportunities to learn outside the classroom. Inevitably, we jump at the chance to apply the theory we have learned in the lecture hall. These valuable experiences become some of our favourite parts of veterinary school.

“Studnets Motivated to Find Their Future Specialty Might Join the Radiology Club for Case Presentations and Lunch-Hour Demonstrations, or the Emergency and Critical Care Club for its CPR Labs.”

It is common for upper-year students to advise the incoming class to join every club. In doing so, first-year students are able to take part in a diverse array of activities, both in the area of veterinary medicine they are currently most interested in, and those they may never have considered. Students motivated to find their future specialty might join the Radiology Club for case presentations and lunch-hour demonstrations, or the Emergency and Critical Care Club for its CPR labs. Others may seek out the Pathology Club to shadow necropsies as part of ‘pathologist for a day’. We all come to veterinary school with our own strengths and passions, but perhaps more importantly, we come with an open mind. It is particularly motivating to see prospective small animal vets signing up for the Equine Club farrier labs, or production medicine hopefuls joining the Laboratory Animal Medicine Club’s handling workshops.

An important feature to recognize about the WCVM club offerings is the amount of hard work that students put into planning, and the generosity of our teachers and faculty demonstrated by participating. I am a member of the Small Animal Club, and taking part in case side rounds is one of my favourite experiences so far. Groups of students are invited to discuss current cases with specialists in our own Veterinary Medical Centre. Each time I finish lessons in mapping treatment in radiation oncology, problem-solving with the principles of neuro exams in action, and assessing hospitalized ICU patients with pain evaluation scales, I leave inspired and grateful for the clinicians’ dedication to helping us learn.

Aside from academically enriching experiences, several WCVM clubs provide the opportunity for students to take a study break. In a program as demanding as ours, we are frequently reminded that attention must be paid to striving for a healthy work-life balance. Clubs like the Wildlife Disease Association organize outdoor hikes and camping trips in addition to their panel discussions with experts in the wildlife field. The Production Animal Club holds lunchtime barbeques in between taking students out dehorning on the farm. For students missing their pets back home, club participation can provide the comfort of spending time with animals. The Equine Club hosts a ‘mare care’ program where teams of students volunteer to groom our teaching horses on a weekly basis. Animal Welfare and Behaviour Club members can take our teaching dogs out for walks. Clubs encourage classmates from a variety of backgrounds and comfort levels to join as a way to improve confidence and skill in dealing with a variety of veterinary species. The Wildlife and Exotic Animal Medicine Society (WEAMS) offers exotics handling labs, and student members are invited to closely shadow the treatment of wildlife patients in hospital. A subset of WEAMS members work with Judis, our rescued Red-tailed Hawk, helping with her care and participation in wildlife education events around Saskatoon. One of my classmates memorably mentioned to me that whenever this fast-paced program seems especially overwhelming, spending time in the wildlife ward is a consistent source of reassurance and belonging.

These positive experiences exemplify how important it is for us to keep our eyes focused forward. Veterinary school will be what we make of it, and our clubs prompt us to make a committed effort to keeping our learning fun. This is a lesson that I hope we carry with us beyond our school days and into our careers in the not too distant future. So, I ask you, readers, what are you looking forward to this year?
F

armers and others who work in agriculture sometimes seem to be under siege from critics regarding practices used in modern farming. But simply responding to criticism provides a poor basis in planning for the future. In recent work, UBC researchers have asked participants how they would describe an ideal farm. Our hope is that the results can help farmers and others develop a vision of what their farms and industry will look like in the decades to come.

We have conducted two studies probing participants’ views on what makes an ideal farm. The first focused on dairy farms and surveyed the views of almost 500 American citizens. We asked a single open-ended question: What do you consider to be an ideal dairy farm and why are these characteristics important to you? The text from these responses was then coded to identify major themes. Participants generally cited more than one characteristic with multiple reasons for each.

The most commented issues related to the “cow” herself, reflecting concerns about cow treatment. For example, people commented on the value of treating the animals with “respect,” “fairly,” “kindly,” “dignity,” and “with love.”

Participants also mentioned aspects related to the business operation, suggesting that the ideal dairy farm should also be profitable, productive, and efficient. Some participants also suggested that the farm should be small, organic, operated by family farmers, and committed to their community (e.g., offering tours or selling their products locally). Participants also said that the farms should be educated, loving, and competent.

Some participants also commented on the importance of the quality of production, stating that the ideal dairy farm must produce high-quality milk products, and that these products be clean and safe to consume. However, they rejected the use of hormones, antibiotics, or other chemicals for the purposes of increasing production, but did state that animals should: “Not be treated with synthetic hormones or antibiotics—unless absolutely necessary.” The respondents also suggested that the cow’s quality of life influences the quality of the milk she produces, which in turn influences human health.

Our second study focused on pig farms, and surveyed the views of approximately 200 American citizens. We again asked a single open-ended question: What do you consider to be an ideal pig farm and why are these characteristics important to you?

Again, participants generally cited more than one characteristic and multiple reasons. Animal welfare (e.g., space, freedom to move, and humane treatment) was the most mentioned theme: 74 per cent of the respondents referred to this theme when describing or justifying the features they considered important. Most of the respondents focused their concerns on issues such as providing sufficient space to move, proper feeding, allowing for contact with outdoors or nature, absence of pain and suffering, and no mistreatment. Participants also made references in relation to animal sentience, using positive terms such as “happiness” and “intelligence.” The reasons used to justify their views were largely based on ethics with many respondents using words such as “respect,” “decency,” “dignity,” and “humane” to refer to animal treatment.

The role of the business operation (e.g., profitability, compliance with sanitary and environmental rules and regulations, and workers rights) was the second most important characteristic of an ideal pig farm. Some respondents viewed the implementation of modern technology as an important feature of an ideal farm. For example, one respondent stated: “Another aspect of a perfect pig farm is the use of technology and automation. This will make the farm more efficient and more likely to keep the farm profitable.” However, participants also placed great importance on naturalness (e.g., natural feeding), in part because they believed that this would benefit both the pigs and the meat they produce.

As stated by one of the participants: “An ideal pig farm is a farm that has wide open space for pigs to roam and feed. This is important as I feel keeping pigs in cramped, enclosed space will help spread disease and infections. The pigs will also produce better meat as they are healthier and less stressed.” As in the case of the ideal dairy farm, participants rejected the use of hormones, antibiotics, and other chemicals for the purposes of increasing production. Thus, participants in both studies argued that the animal’s quality of life influences the quality of the product produced, which in turn may affect human health.

In summary, the findings of these studies point to a suite of practices that resonate with societal values. Both studies also illustrated the importance that respondents placed on the attitudes and values of the people responsible for the animals, and on an animal’s freedom to move and their ability to fulfill natural and highly motivated behaviours like grazing on pasture. The question now is how will the agricultural industries use such results to develop a vision for the future of farming, and what mechanisms can be put in place to see this vision achieved.

not all fats are created equal, and there is debate about the proportion of anti-inflammatory omega-3 to pro-inflammatory omega-6 fatty acids in farmed and wild fish. As the same time, fat is the repository of chemicals a fish receives either in feed or from its environment, a fact that raises understandable concern among laypersons and scientists alike.

Historically, Atlantic salmon were first introduced into Pacific waters for a leisurely rather than pragmatic purpose. Fertilized eggs of Atlantic salmon were put in the waters off the coast of California in 1874 to produce stock for sports angling. More eggs were introduced again and again after the repeated failure of adults to spawn and reproduce. Thus, Atlantic salmon in Pacific waters is a foreign species that has so far proven to be non-invasive. It has been known to escape sea pens but is incapable of interbreeding with Pacific species of salmon.6

One of the greatest concerns is the presence of viruses in farmed fish that may affect wild species. Piscine reovirus is a robust non-enveloped virus capable of surviving outside the host. Public attention was drawn to it during a recent release of blood from a fish farm. It is highly contagious but shows low virulence; a civilised virus that prefers to lie dormant rather than destroy its host. It is present in all farmed salmon who (are uniformly vaccinated for it), and has been associated with heart and skeletal muscle inflammation, a disease that would be fatal to wild fish who need to be athletes. Current research, much of it conducted by Dr. Kristi Miller, a scientist with the Department of Fisheries and Oceans, has not established direct or exclusive causation of clinical illness by this virus, although it may be one of the factors. A major challenge is that it is not easy to determine the cause of death of wild salmon: debilitating illness causes them to be predated or to drop to the ocean floor and become lost to follow-up, as we would say in clinical practice.4

Sea lice are crustaceans that are particularly destructive to young fish, both salmonids and herring (the latter is essential to nutrition and survival of sea lions). The use of pesticides on fish farms is controversial since, like any parasite, sea lice are capable of developing resistance. At the same time, not controlling sea lice might put passing wild fish at risk of infestation, a topic brought to public attention particularly through the efforts of Alexandra Morton.7

Many have argued against the practice of farming as such, but against keeping fish in sea pens rather than land-based reservoirs. Current research, although only a few such farms, but their operations are promising.8 If the transition from sea to land were to take place on a large scale, it would give the ocean back to native species of fish and mammals, while leaving behind any chemicals left over from farming and any organisms (viruses, sea lice) possibly modified by the presence of farmed fish. It would solve the issues of fluctuating oxygen levels and of algal and plankton blooms that affect open fish in open seas, and of shooting mammals such as sea lions and seals who try to raid the pens (some getting trapped in the pens and drowned when the tide comes in). It would not alleviate concerns about the welfare of farmed fish. Their reasoning may be less nuanced than that of mammals, but their senses are exquisite, and their lives in captivity are longer than those of mammalian production species. (Farmed salmon live three to five years until they are harvested.)

With nothing to do but eat and swim, do fish suffer from boredom and frustration? This fascinating and much-needed field of research leads to developing optimal and flexible patterns of feeding that minimise stress and aggression and provide an outlet for the animals’ inbuilt foraging behaviour.

What is the role of veterinarians in salmon farming? Many work in government-run as well as private laboratories, and in the “field” (i.e., on the water) to monitor the health of wild as well as penned fish, but we do not tend to hear much about them or from them except for an article by Dr. Sonja Sakula in the March 2011 issue of West Coast Veterinarian. Notably, the CVMA has no position statements on the health and welfare of farmed salmon. And yet these mute animals deserve some kind of voice. We do not all need to become experts in aquaculture and fish health and welfare, but we have to be prepared for impartial and critical evaluation of evidence. For me, studying the issues raised by fish farming has been an exercise in not throwing out the baby—hatching—with the bathwater. I have re-examined my own thinking about the effects of commercial fish farming. I have had to re-examine my own thinking about the effects of commercial fish farming. I have had to re-examine my own thinking about the effects of commercial fish farming.

**“SALMON FARMING DOES NOT CLAIM TO SOLVE ANY FOOD SHORTAGE.”**

Fish farming has been an exercise in not throwing out the baby—hatching—with the bathwater. I have re-examined my own thinking about the effects of commercial fish farming. I have had to re-examine my own thinking about the effects of commercial fish farming.

**“NOTABLY, THE CVMA HAS NO POSITION STATEMENTS ON THE HEALTH AND WELFARE OF FARMIN-ED SALMON, AND YET THESE MUTE ANIMALS DESERVE SOME KIND OF VOICE. WE DO NOT ALL NEED TO BECOME EXPERTS IN AQUACULTURE AND FISH HEALTH AND WELFARE, BUT WE HAVE TO BE PREPARED FOR IMPARTIAL AND CRITICAL EVALUATION OF EVIDENCE.”**

## References


## Other Resources

- **A FLUID SCIENCE**
- **BY VERONICA GVENTSADZE, MA, PhD, DVM**

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**WILDLIFE COLUMN**

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**Fish farming has been an exercise in not throwing out the baby—hatching—with the bathwater. I have re-examined my own thinking about the effects of commercial fish farming. I have had to re-examine my own thinking about the effects of commercial fish farming.**

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**“SALMON FARMING DOES NOT CLAIM TO SOLVE ANY FOOD SHORTAGE.”**

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Lipping through college program guides, several years out of high school and a young adult, I soon-to-be mature student, the Veterinary Technology Program caught my eye. “Sure!” I said to myself. “I love animals and am a bit of a math geek … let’s go for it.” That was 13 years ago, and little did I know that my original aspiration to graduate and work at a zoo would evolve into a decade-plus long adventure as an RVT with a specialty in anesthesia.

Anesthesia can be an intimidating subject for most veterinary technologists, and I was certainly no different. I vividly recall the fear of going to class because none of the concepts made sense to me. But somewhere along the line, it started to click. My perspective changed, and I began to view practising techniques and learning about various anesthetic agents, while managing cases under the direction of an anesthesiologist, as a welcome challenge.

Soon thereafter, I learned what a Veterinary Technician Specialist (VTS) was. I attended my first International Veterinary Emergency and Critical Care Symposium in 2013, subsequently networking with VTS technologists who had cultivated successful, fulfilling careers, proving to be the inspiration I needed. I decided that this was a professional achievement that I wanted to work toward. The process of becoming a VTS is rigorous, to say the least. The first year of the two-year process is taken up with completing the initial application, writing up case logs and reports, while mastering the requisite skills. A successful applicant spends the second year studying for a one-year exam held in the fall of the year.

I’m not sure if my fondness for orthopedic cases stems from my initial experiences as a surgery tech or because regional anesthesia is one of my favourite things to include as part of a balanced anesthetic and analgesic plan. Cruciate repair is one of the more common operations in any given surgical service. I mostly have experience with Tibial Plateau Levelling Osteotomies. Performing epiduals was one of the first techniques that sparked my anesthesia interest. I was instantly sold on the fact that there were several advanced techniques that technologists could be trained in and trusted to perform. As time progressed, I became increasingly more proficient at epiduals and peripheral nerve blocks. Some of these require the use of a nerve stimulator such as the brachial plexus block, which provides analgesia distal to the elbow. Electro-location units are used to identify nerves using a short bevelled, insulated needle that allows the injection of local anesthetic around the nerve. Femoral and sciatic nerve blocks are relatively new techniques for me, but I now favour them over epiduals in most of the pelvic limb cases I anesthetize because of their efficacy, safety, and reduction in side effects. Combining these blocks provides analgesia for unilateral procedures distal to the coxofemoral joint, employing nerve electro-location in a similar fashion to the brachial plexus block.

Mechanical ventilation utilizing capnography is another favourite of mine when it comes to all things anesthetic. The majority of cases I manage are mechanically ventilated, not only because I find the anesthetic plane to be more consistent while reducing the percentage of inhalant used, but also because the case itself indicates control of respiration. Many of our neuro patients undergo advanced imaging such as MRI, as part of their diagnostic workup. Patients requiring magnetic imaging must be fully anesthetized, and all employees working with these patients need to be properly trained and screened for safety purposes before entering the MRI suite. I work with a high field 1.5 Tesla MRI and MRI-compatible monitoring equipment and ventilator. These patients are monitored from the control station, which is outside of the room. Mechanical control of respiration is paramount because the breathing apparatus is used for appropriate gas exchange during spontaneous ventilation. It is also impossible to give intermittent positive pressure ventilation by squeezing the reservoir bag during scanning. As with the neuro patients, ophthalmology patients who undergo phacoemulsification must also be ventilated, although for a different reason. These patients are not only anesthetized but are also paralysed using neuromuscular blocking agents, eliminating their ability to spontaneously ventilate. The same electro-location unit used for peripheral nerve blocks also acts as a nerve stimulator so that the degree of blockade may be qualitatively and quantitatively assessed via train of four stimulation.

Multi-parameter monitoring equipment is placed on all anesthetized patients at our facility. It’s crucial to be able to interpret readings on the capnogram, ECG, and blood oxygen saturation level while obtaining invasive or non-invasive blood pressure readings. This information helps to appropriately manage the patient’s anesthetic plane, analgesic requirements, ventilation, and fluid therapy. Our internal medicine and emergency departments often have unwell or critical patients who require sedation or anesthesia. These patients may need endoscopy, bronchoscopy, exploratory laparotomy, thoracic, or lifesaving surgical procedures. It’s important to closely monitor these dynamic cases, often well into the recovery period.

I believe that ongoing education is key to an effective anesthetic plan. Our team subscribes to a variety of continuing education courses, including those that relate to anesthesia. We conduct in-house training and have a resident VTS assist in expanding our knowledge. In the end, I believe that our clients and patients benefit the most from the ongoing education. This is important not only for our current patients but for the next decade has in store. I hope to continue to advocate for my patients and for RVTs in the profession, inspiring as many as possible to become anesthesia nerds. NERD

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Multi-parameter monitoring equipment is placed on all anesthetized patients at our facility. It’s crucial to be able to interpret readings on the capnogram, ECG, and blood oxygen saturation level while obtaining invasive or non-invasive blood pressure readings. This information helps to appropriately manage the patient’s anesthetic plane, analgesic requirements, ventilation, and fluid therapy. Our internal medicine and emergency departments often have unwell or critical patients who require sedation or anesthesia. These patients may need endoscopy, bronchoscopy, exploratory laparotomy, thoracic, or lifesaving surgical procedures. It’s important to closely monitor these dynamic cases, often well into the recovery period.
Case Report

Shelby, a five-year-old female Lab, partially tore her pectoral muscle during a fall in an agility tunnel. She received a combination of bone marrow aspirate concentrate (BMAC) and platelet-rich plasma (PRP). Eight weeks later, a repeat ultrasound showed substantial regrowth of tendon into the defect. Two years later, she has gone on to set two Canadian dock diving records, as well as earning multiple titles, including and returning the shoulder to full function.

Regenerative medicine (RM) offers a viable option for a range of musculoskeletal conditions. Its potential is so great that it is currently undergoing a plethora of research to determine which conditions do or do not respond to the therapy. In the case of tendon injuries, a treatment worthy of consideration is the use of mesenchymal stem cells (MSCs) harvested from adipose or bone marrow aspirate bone marrow concentrate (BMAC) and platelet-rich plasma (PRP) [1]. PRP is commonly defined as a 3–5-fold concentration of platelets in a small volume of plasma. Once activated, platelets release multiple growth factors that reduce inflammation and promote neovascularization and tissue repair. PRP is frequently used for its therapeutic effect, serum is incubated in the presence of glass beads to stimulate production of these platelets release multiple growth factors that reduce inflammation and promote neovascularization and tissue repair. ACS is similar to PRP, but with one main difference: instead of relying on increased platelet numbers for its therapeutic effect, serum is incubated in the presence of glass beads to stimulate production of anti-inflammatory cytokines, particularly IL-1 receptor antagonist protein. In dogs, more research has been done on PRP than on ACS. Research has consistently shown that PRP significantly reduces arthritic pain in most patients, with approximately 80 per cent showing improved comfort for nine months.

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Products Derived from Adipose or Bone Marrow

Although many people associate stem cells with tissues derived from embryos or umbilical cords, such cells are less useful clinically when compared to MSCs. Embryonic stem cells are too mutagenic, with the potential to develop teratomas. Famously, in one research project, these cells were cultured from an adipose or marrow aspirate that has been submitted to a lab. The lab selects a line of stem cells, and then expands the number of cells into the tens of millions. In contrast, techniques that are more common include macerating the SVF, which includes a smaller number of stem cells, but also other helpful components such as T regulatory cells, endothelial precursor cells, and macrophages. Similarly, BMAC reflects a mix of many compounds, including MSCs, rather than a pure isolate of MSCs. So, which works better—cultured MSCs, SVF, or BMAC?

Cultured MSCs have a greater number of cells, but from only one cell line, with no other potentially beneficial components mixed in. Another consideration is that 24 hours of shipping is enough to negatively affect stem cell performance. In contrast, SVF and BMAC have smaller numbers of fresher cells in a milieu of other beneficial agents. At this point, we don’t know which is best—a high number of weaker homogenous MSCs, or a sample with fewer but fresher MSCs with additional beneficial molecules. Time and further research should eventually answer this question. One thing that early research is showing, though, is that whether you use cultured MSCs, SVF, or BMAC, results are better when BP is added to the mix. Until now, I have been talking about autogenous stem cells—stem cells harvested from a patient and returned to the same patient. In contrast, allogeneic stem cells are harvested from a donor and then implanted into the patient. MSCs have surface proteins that act like a Harry Potter invisibility cloak, allowing the MSCs to escape detection from the host’s immune system. Although allogeneic cells are not yet widely available, the time is coming when it will be possible to store vials of canine stem cells on-site, to be thawed, drawn up, and injected as needed.

The BM is being passed through a filter to remove fragments of trabecular bone.

The BM is being passed through a filter to remove fragments of trabecular bone.

MSC/PRP therapy is particularly effective in the repair of partially torn tendons or ligaments. A recent paper documented the regeneration of partially torn cruciate ligaments after injection of MSC/PRP. Two years following this treatment, 10 per cent of treated dogs progressed to needing surgery; we would expect 85 per cent of them to progress to surgery within three years if they had received no treatment. Patient selection is key, and surgery is still the most proven therapy, but MSC/PRP may provide an alternative to surgery in some cases.

Research on the utility of BM in treating supraspinatus tears found that 88 per cent of treated patients fully responded, and the remaining 12 per cent showed partial improvement. I’m in the early stages of compiling my own data on the use of MSC/PRP to treat partial tendon tears. Biceps and supraspinatus tendons are the ones I most commonly inject (51 tendons total), followed by the illopos, patellar (2), and a single episode of treating a pectoral, ulnar carpal flexor, and a teres minor tendon. I frequently inject the glenohumeral medial compartment, but often as a preoperative diagnosis of medial shoulder instability unconfirmed by imaging, and usually in combination with other biologic agents. Frequently, these cells have been cultured from an adipose or marrow aspirate that has been submitted to a lab. The lab selects a line of stem cells, and then expands the number of cells into the tens of millions. In contrast, techniques that are more common include macerating the SVF, which includes a smaller number of stem cells, but also other helpful components such as T regulatory cells, endothelial precursor cells, and macrophages. Similarly, BMAC reflects a mix of many compounds, including MSCs, rather than a pure isolate of MSCs. So, which works better—cultured MSCs, SVF, or BMAC?

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TAKING WING

WORKING RAPTORS AT THE AIRPORT

BY KEN LANGEIiER, OBC, DVM
Peregrine Falcons are the jet fighters of the avian world and can use their sharp talons to chase or strike birds in mid-air. Boeing, a six-year-old Northwest Raptors, also known as The Raptors, coordinates bird-strike the plane he normally protected. Radiographs revealed a fracture of the medial condyle of the left tibiotarsal bone. Following general anesthesia, the fracture was examined. The small piece of bone was too difficult to hold in place with Kirschner wires. Normally, bone screws don't have enough bone cortices to work on avian bones, but in Boeing's case, we were running out of options, so I was glad when a small bone screw slid nicely into place. We held our breath as we applied an external splint. We were relying on the fact that bird bones heal very quickly, and in Boeing's case, if we could immobilize the joint for two to four weeks with the bone fragment in that position, it should heal. If I was told in veterinary college that one day I would be working on the landing gear of a Boeing, I would not have believed it.

Birds have been designed to fly but not crash. With hollow bones and thin skin over their heavily muscled frame, collisions can be severe if not lethal and often very challenging to repair. On top of that, in falconry, raptors are considered to be working animals and must be able to chase, strike, or capture prey, so any impairment involving their eyes, legs, or ability to fly can be a cause of early retirement. Optimal health is needed along with a good flying weight so that the birds are fit, yet have an appetite to work for their dinner. Swooping birds, especially gulls at landfills, have proven to be a problem as they spread garbage away from the intended area, which can both result in damage to machinery, impeding operations, and pose a significant safety hazard. Off site, the gulls can damage neighbouring homes with garbage or their feces where they roost. Spreading of garbage can also affect other forms of wildlife (more rodents) and be a potential health risk. Falconers from The Raptors pay daily visits to landfills to move the gulls on to natural food sources instead.

On Vancouver Island, a non-migratory subspecies of Canada Goose was introduced, and the birds have become a nuisance with their droppings in public parks, schools, and cemeteries. Geese quickly learn to use alternative areas when a predatory raptor begins to visit. Veterinary care includes regular physical examinations, travel health certification, health care advice, and parasite control, as well as emergency medical and surgical care. Before a raptor is flown, the falconer must always assess the immediate environment for danger. This can be in the form of wires, fences, oil, or other dangers that the bird may strike while chasing prey—or in addition, it can be the presence of wild raptors that see the falconer's bird as competition or food. On several occasions, even the falconer was not able to spot a wild raptor in the area, resulting in the falconer's bird being attacked. One bird in particular, Ace, had the wing web of one wing shredded by an attacking falcon. After sorting out the pieces of skin, I was pleased to see the long thin propytagium ligament on the leading edge of the wing web (essential for flying) had not been severed. Fortunately, as well, the skin and severed muscles were not devitalized, and when they were all sorted and sutured together, we were pleased that the wing healed well and was fully functional for hunting again in a few months.

The film industry and commercial photography industry in Canada are doing well, and raptors are often needed on set but first must be given a veterinary health certificate. The Raptors have done many commercial shoots and filmings, including The Big Year, Air Buddies, and A Series of Unfortunate Events, along with many other films and commercials. Birds used for falconry are bred at the centre, and the breeding program is needed to meet the growing demand of non-toxic pest bird control—an environmentally friendly alternative. On the veterinary side, some birds are paired for breeding but may not like their chosen mate at first, and thus beak and talon injuries are occasionally seen at our hospital.
Did you know that falconry is one of the oldest relationships between humans and birds, dating back over 4,000 years? In 2016, “Falconry, a living human heritage,” was inscribed on UNESCO’s Representative List of the Intangible Cultural Heritage of Humanity.

Pediatrics in neonatal hatchlings can also be a difficult task, with each raptor species having its own special needs for housing, nutrition, and disease control.

In a world where raptors and vultures are struggling to survive, another important mission of The Raptors is to educate on the anatomy, species variations, nutrition, and conservation needs of raptors. I have attended many of these demonstrations and never tire of watching the magic of birds performing when they have the choice of flying away (which every once and a while happens, staff rushed him to the hospital. In exotics, one often learns how to MacGyver items to aid in procedures not normally done in pets. Rather than explore through the abdomen to remove the radio transmitter, we elected to take a plastic caging off a urinary catheter holder and cut it to the length needed to reach the transmitter. After anesthetic induction, an otoscope light and long alligator forceps were used to remove the transmitter, his stomach acids had already begun to dissolve the casing around the transmitter exposing the corrosive battery acids.

This was not to be Elton’s only incident, and later I had to remove a large primary feather that he had rolled up, swallowed, and got stuck in the back of his throat. Elton is a very special owl at the centre as members of the public often use him when they take short courses on falconry at the centre. My daughter, Caitlin, learned about falconry as a teenager and, at the end of her internship, had to give a public demonstration and lecture on the Spectacled Owl, using Elton.

Additional hands-on public education is done on Hawk Walks where members of the public take a walk through nearby forests with a hawk following them and flying to their gloves at various times throughout the walk. Special fundraising events for helping wild raptors are often hosted at the centre. A popular event, International Vulture Awareness Week-end, highlights the plight of rapidly declining worldwide populations of vultures from poisonings. Owl-o-ween has a special focus on owls in the evenings near Halloween.

Furthertotheircommitmenttoraptors, thebiologistsandfalconers of The Raptors also volunteer their time and expertise to help with the nearby Raptor Rescue Society which captures and cares for sick and injured raptors on Vancouver Island in the hope that they can be released back into the wild. On one occasion, two Bald Eagles were brought in that were in a serious territorial battle with one another and had to be netted out of the water. One bird had only a few punctures so was dried up prey in water, pack hunting of Harris’s Hawks, and the fast stoop of a falcon striking a lure in mid-flight. During these tours and demonstrations, the public is educated on the anatomy, species variations, nutrition, and conservation needs of raptors. I have attended many of these demonstrations and never tire of watching the magic of birds performing when they have the choice of flying away (which every once and a while the odd bird chooses to do).

Birds are fitted with radio-transmitters in the event a bird sustains a severe injury from the fall; one such bird was a Bald Eagle nesting that fractured his humerus. The perfect oblique mid-shaft fracture lent itself to using cerclage wires only (no IM pins), so I named the eagle Cerclage. I chuckled when I saw that his name had been misinterpreted at the rehabilitation centre, and he was now Sir Claws.

Wild birds will often fall from nests, and tree climbers are available to return birds to their nests, make new nests if needed, or place the nestling in with new foster parents (as long as the nestling is of a similar size, they are readily accepted). Occasionally, the nestling bird sustains a severe injury from the fall; one such bird was a Bald Eagle nesting that fractured his humerus. The perfect oblique mid-shaft fracture lent itself to using cerclage wires only (no IM pins), so I named the eagle Cerclage. I chuckled when I saw that his name had been misinterpreted at the rehabilitation centre, and he was now Sir Claws.

Infectious disease is always a concern, especially with the raptors interacting with wild birds. Some species are especially susceptible to aspergillosis, and constant monitoring for this threat must be done. We have received birds with bumblefoot (pododermatitis) or deep infected wounds and have had success using antibiotic-impregnated polymethylmethacrylate beads placed in the infected site. Normal debriding and flushing with drainage, as done in mammals, does not work in birds. Another concern with birds with open wounds is that we must also be aware when flushing that birds have pneumatic bones that connect to airways. Even the femur in raptors (not psittacines) is pneumatic and requires special consideration when repairing or treating open fractures.

Raptor veterinary medicine will always remain very challenging with the fragility of the patients and limitations of information and instrumentation. Seeing a bird fly that was once grounded can be very rewarding. It has been two years since Boeing’s injury, and we are proud to say he is still flying, interacting with wild birds. Some species are especially susceptible to aspergillosis, and constant monitoring for this threat must be done. We have received birds with bumblefoot (pododermatitis) or deep infected wounds and have had success using antibiotic-impregnated polymethylmethacrylate beads placed in the infected site. Normal debriding and flushing with drainage, as done in mammals, does not work in birds. Another concern with birds with open wounds is that we must also be aware when flushing that birds have pneumatic bones that connect to airways. Even the femur in raptors (not psittacines) is pneumatic and requires special consideration when repairing or treating open fractures.

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MANAGEMENT OF TRAUMATIC WOUNDS
A BRIEF OVERVIEW
BY CHRIS JORDAN, Bsc (Hons), BVetMed, Dipl. ECVS, MRCVS

For the purpose of this article, we will consider that these two cases have the described wounds in isolation.

PERSONAL PROTECTIVE EQUIPMENT
All staff dealing with any case with a wound should wear appropriate PPE including disposable gloves to mitigate nosocomial infection and hospital contamination.

PATIENT ASSESSMENT AND STABILIZATION
All cases with wounds will have suffered trauma, so perform immediate triage of every trauma case to include a full-body-system evaluation to identify all lesions, place them in order of clinical urgency, and prioritize their management. A minimum database should be obtained to include packed cell volume and total solids, blood urea nitrogen, and glucose.

CASE 1 was a mildy tachycardic and had hyperdynamic peripheral pulses likely due to its having lost a significant amount of blood, so was given a 10ml/kg bolus of crysralloids followed which it became normocardiic and normotensive.

CASE 2 was dyspneic, so was placed in an oxygen cage. Opioids can cause respiratory depression, so hydromorphone was administered. Additional, a low dose of dexmedetomidine was administered to reduce respiratory depression. Neurological assessment of the affected limb was performed during immediate triage and prior to administration of any analgesics. The neurological assessment was within normal limits confirming that no significant nerve injuries had occurred, so hydromorphone was administered. Administration of NSAIDs was initially precluded by the suspicion of significant blood loss and associated hypovolemia and concern for an NSAID-associated coagulopathy. A femoral and sciatic local anesthetic block was performed pre-operatively. NSAIDs were only administered when the patient had fully recovered from anesthesia, was normotensive and euvolemic, and in-house biochemistry had confirmed normal renal and hepatic function.

CASE 1 had a deep laceration with concurrent transection of a tendon and blood vessels, so a local nerve could also have been transected. Additionally, a low dose of dexmedetomidine was administered to provide very mild sedation as well as analgesia.

WOUND FIRST AID
Initially, consider whether the wound could be life threatening either through the current extent of the lesion or sequelae to the lesion—any concerns should be immediately addressed.

All wounds should be covered, even with a light dressing, to mitigate nosocomial infection and hospital contamination. Should wound-induced local instability have the potential to lead to further trauma to local tissues, a supportive dressing should be placed.

CASE 1 had moderate active hemorrhage, so a pressure dressing was placed initially to provide temporary hemostasis. Once stabilized, the patient was anesthetized, the dressing was removed, and the lacerated vessels were found to be hemorrhaging so profusely that they were immediately ligated with the patient still in the induction area.

THE FIRST CASE
A four-year-old, neutered male Cane Corso, was presented shortly after having suffered a 30cm, full-thickness laceration of the craniolateral proximal crus to the dorsomedial aspect of the tarsus from which there was significant active hemorrhage and a transected tendon protruding.

THE SECOND CASE
An eight-year, eleven-month-old neutered male West Highland white terrier, presented shortly after having been attacked by a dog. The case had puncture wounds to its ventral cervical region with significant local inflammation and was dyspneic.

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Case 2 had puncture wounds; subcutaneous damage associated with puncture wounds must be assessed through surgical exploration due to an unknown depth of penetration and the inherent mobility of cat and dog skin allowing anything puncturing the skin to have the potential to damage subcutaneous structures over an unknown area. This case was diagnostically challenging, thoracic radiography was performed which identified gas in the cervical facial planes, pneumomediastinum, and pneumothorax.

Clip all hair from around the wound. Fill the wound with sterile lubricant and clip all hair from around the wound at least far enough from the margins of the wound to prevent hairs from protruding in to the wound. If clipping of hair reveals more wounds or contusions, continue clipping until it is clear that normal skin has been exposed, to ensure the extent of the wound has been identified.

Decontaminate the wound. Decontamination should be performed as soon as possible but ideally within six hours of the wound occurring and definitely within twelve hours to remove the majority of bacteria. Wear sterile gloves to improve decontamination. Use a ‘three-way tap’ and allow deep exploration of larger wounds. Remove any gross debris. Lavage the wound with copious amounts of fluid. Sterile isotonic crystalloid is recommended because no benefit of antiseptic solutions for wound lavage has been demonstrated. Additionally, no contraindications of using tap water to lavage wounds have been demonstrated; in fact, for severely contaminated lesions, consider using a ‘tub table’ and associated hose to decontaminate a wound. A 35ml syringe and 18-gauge needle have been shown to generate an appropriate pressure for wound lavage through providing enough pressure to remove bacteria and debris from a wound but not too much pressure as to lead to further tissue damage. A ‘three-way tap’ and giving set can be attached to a 35ml syringe and 18-gauge needle to facilitate lavage. Alternatively, a crystalloid fluid bag in a pressure infusion bag with an 18-gauge needle on the end of a giving set can be used. Should a wound have subcutaneous ‘pockets’, consider swapping an 18-gauge needle for an 18-gauge intravenous catheter which can be introduced in to subcutaneous pockets to facilitate a more thorough lavage.

Chlorhexidine should not be used on wounds because it is cytotoxic. If a large amount of effusion is predicted, consider leaving the wound fully or partially open with closure planned by second intention or delayed primary closure, or consider placing a drain. If a drain is placed, it should always exit the surgical site through a separate incision through healthy skin. A patient’s drain (such as a Penrose drain) is placed, the external portion of the drain should always be covered by a dressing to mitigate nosocomial infection and hospital contamination. Drains should be removed when the effusion has significantly reduced, and/or the effusion cytology is only non-necrogenic neutrophils with no intracellular bacteria.

Case 1 had a transaction of the tibialis cranialis with the proximal aspect of the tendon protruding from the wound, but the distal aspect was not visible even when the (alloplastic) tarsus was manipulated through a normal range of motion. At surgery, the skin laceration was extended distally over the medial aspect of the tarsus for another 5cm, which enabled identification, and retrieval of the distal end of the lacerated tendon of the tibialis cranialis. Due to the laceration having occurred less than six hours prior to initial surgical management, the tendon of the tibialis cranialis was re-apposed, the crural extensor retinaculum was re-apposed and primary closure was performed. A splinted dressing was placed post-operatively to limit tarsal extension to protect the tenorrhaphy and retinacular repair.

"Should surgery be indicated, chlorhexidine should not be used to aseptically prepare the surgical site because it is cytotoxic; aseptic preparation for surgery should be performed with diluted povidone iodine."

Should there be a risk of septic arthritis, oral antibiotic therapy should be extended to four weeks. For cases with wounds that are left to heal by second intention (spontaneous healing through granulation tissue, then epithelialization) or for which third intention apposition (surgical apposition over a healthy granulation tissue bed) is planned, antibiotics should be continued until healthy granulation tissue covers the wound at which stage antibiotic therapy can be discontinued.

Initial Management Plan

It is not possible to fully assess the extent of subcutaneous damage associated with puncture wounds without surgical exploration due to an unknown depth of penetration and the inherent mobility of cat and dog skin allowing anything puncturing the skin to have the potential to damage subcutaneous structures over an unknown area.

Should surgery be indicated, chlorhexidine should not be used to aseptically prepare the surgical site because it is cytotoxic; aseptic preparation for surgery should be performed with diluted povidone iodine.

Prior to surgically exploring a wound, review the local anatomy to enable comprehensive identification of which structures have been damaged and associated compromise to tissues. Often it is preferable to explore a wound from a local surgical approach that you are familiar with or can obtain a reference source for, as this will mitigate iatrogenic damage to local structures. For example, for exploration of a cervical wound, ventral midline cervical exploratory surgery is the preferable surgical approach.

Should any structures be unequivocally devalitated, they should be excised to mitigate inflammatory mediators and infection; if you are unsure whether a structure is devalitated, re-assess five to seven days later. Following completion of surgical exploration, the surgical site should be thoroughly lavaged.

Wounds with severe contamination, wounds with equivocally viable tissue, wounds with any reason to suspect a crushing component, and bite wounds should not be primarily closed, as dehiscence is likely. Crushed and/or devitalized tissue may only manifest at up to seven days after injury. Any wounds satisfying one or more of the above criteria should be managed with dressings and staged debridement for five to seven days at which stage the management plan can be finalized.

Wounds that can be effectively decontaminated can be closed primarily, where possible.

If a large amount of effusion is predicted, consider leaving the wound fully or partially open with closure planned by second intention or delayed primary closure, or consider placing a drain. If a drain is placed, it should always exit the surgical site through a separate incision through healthy skin. A patient’s drain (such as a Penrose drain) is placed, the external portion of the drain should always be covered by a dressing to mitigate nosocomial infection and hospital contamination. Drains should be removed when the effusion has significantly reduced, and/or the effusion cytology is only non-necrogenic neutrophils with no intracellular bacteria.

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Ongoing Management Plan

If a wound has been primarily closed, a light dressing should be placed for at least 48 hours post-operatively. If a wound has not been primarily closed, ongoing dressing management will be indicated. The type of dressing used and frequency of dressing changes will depend on wound stage (inflammatory, debridement, proliferation, maturation/remodeling). All wounds left to heal by second intention should be covered with a dressing at least until healthy granulation tissue covers the wound; however, should there be a risk that the patient may traumatize the granulation tissue, the wound should remain covered with a light dressing until epithelialization is complete.

Importantly, should a wound be left to heal by secondary intention, to mitigate unwanted sequelae such as loss of local joint range of motion, physical therapy should be started as soon as the patient is comfortable. If you are not comfortable managing a case, contact a surgical specialist to discuss the case. DOI: 10.1016/j.atv.2023.03.002
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SUPPORTING THE MARGINALIZED IN OUR COMMUNITIES

BY SHAWN LLEWELLYN, DVM

It is a busy start to the morning at McLaren House in downtown Vancouver, as the schedule for appointments with veterinarians is fully booked and a wait list has already been started. The staff at McLaren Housing Society has organized appointments for pets of both residents and homeless guardians to be seen today. The team of volunteers for the no-cost animal health clinic includes veterinarians, registered veterinary technicians, and assistants, along with students from Douglas College’s veterinary technology and psychiatric nursing programs.

Over the course of the clinic, veterinary professionals will examine and vaccinate pets as well as educate guardians on their pets’ health and wellness. Deworming, pet food, supplies, grooming services, and free spay/neuter referrals will be provided, and minor medical conditions treated. Any complex conditions identified requiring a more thorough workup are referred to neighbouring veterinary clinics where they will receive care.

In this morning’s clinic, Teddy, a five-year-old Chihuahua cross, was brought to the clinic by his guardian, Jeremy. Jeremy recently adopted him from a friend he came to know during his time living on the streets. Teddy’s original guardian was unable to keep him when he moved into community housing that was not pet friendly. Luckily, he trusted Jeremy, and Jeremy was able—and more than willing—to adopt Teddy.

Jeremy was concerned that Teddy seemed to be taking longer to eat than usual. On Teddy’s examination, it was determined he had stage four periodontal disease and would require multiple extractions. Teddy was referred for further workup including blood work in preparation for dental surgery. Jeremy was grateful for the support he was given to get his closest friend and companion healthy and happy again. In the end, Teddy had ten teeth extracted, but will be healthier because of it. Jeremy was educated on the importance of oral care and has committed to working on maintaining Teddy’s dental health through regular teeth brushing.

Animal health clinics for the marginalized began in the notion that providing care to the pets of those in need supports not only the animals but also the more marginalized in our society. Strengthening the bond between animal and human guardian fosters a connection that runs deep and builds on the support network people have in their community.

Pets of the homeless and those most vulnerable provide necessary companionship and a structure to daily life that has proven to be life-altering in numerous instances. From the stories we are told as we build relationships with people and their pets, we learn of the lives that have been saved because of a pet coming into the care of a previous drug user or someone who was contemplating suicide. The human-animal bond is known to enhance psychological and emotional wellbeing and, in many circumstances, can be critical to people seeking further community support and ultimately gaining a foothold back to some form of stability in society.

Some people may believe that pets of the homeless are not well cared for; however, this is a misconception. The volunteers at the numerous clinics throughout the province can attest to the care and wellbeing provided by these pet guardians. Data shows that homeless pet guardians have significantly higher mean scores on attachment to their pets compared to the population as a whole, and that their pets are important for their mental and physical health. One barrier to pet ownership that is often raised is housing. Many homeless pet guardians choose to remain on the streets due to inadequate housing options that allow pets. They choose their pet, often their sole companion, over affordable housing or a shelter environment. More pet-friendly housing options are becoming available, but there is still a lack. The site of today’s clinic, McLaren House, is one of those pet-friendly affordable housing organizations. McLaren Housing Society believe in the human-animal bond, as staff have witnessed time and again how a pet can help combat isolation, depression, and other mental health issues.

Research shows that animal companions help street-involved youth cope with loneliness and improve their sense of wellbeing through unconditional love. It also shows how pets motivate positive change, such as decreasing drug and alcohol use. While pet guardianship provides many liabilities, companionship animals offer both physical and psychological benefits that youth otherwise have difficulty attaining.

Veterinarians can build upon the bond that exists between pet and guardian. Opportunities for veterinarians include volunteering for an animal health clinic or running one in the community, partnering with an organization to provide support to those in need, donating supplies or preventive medications such as parasite control, fundraising for a community program, support and/or sharing stories of the work being done through social media networks. Many BC organizations and programs support the homeless and marginalized, including The Canadian Animal Assistance Team, Charlie’s Food Bank, Paws for Hope Animal Foundation, Vets for Pets Victoria, and One Health Clinic.

Pets serve as a meaningful source of constant companionship and support for the homeless and marginalized. This companionship has thwarted the worst effects of depression and helps those contemplating suicide regain an element of mental wellbeing and purpose. In line with that, veterinarians can, and do, play a leading role in the support and recognition of this influential human-animal relationship. Veterinary professionals help promote the health and wellbeing of both the animals and people involved, further strengthening an everlasting bond.

The Canadian Animal Assistance Team

Additional mental health and wellness resources are listed at: www.canadianveterinarians.net/documents/mental-health-support-resources

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1.888.384.1152 (TTY)
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Additional mental health and wellness resources are listed at: www.canadianveterinarians.net/documents/mental-health-support-resources

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WCV
Each case must be handled diplomatically, and most accidents are truly accidents. Some situations that are initially perceived as abuse may instead be a result of miseducation, and clients may require assistance with finding an appropriate way to treat the issue. Indications that an animal may be a victim of intentional abuse are similar to those of domestic abuse and include injuries inconsistent with the history, recurrent traumatic injuries, and vague explanations for injuries. Veterinarians are legally obligated to report animal abuse, cruelty, and distress. As citizens, we are also legally obligated to report child abuse and, if we suspect an adult person is being victimized, we can reach out and discreetly provide contact information for support services in the community. We might assume that such things do not occur in one’s practice due to a favourable area and clientele, but interpersonal violence and animal abuse are not restricted to a particular socioeconomic class. Non-academic injury should be added to our diagnostic differential list so that we are open to the idea when it does occur. There are other ways we can support victims of violence. Simple things such as displaying pamphlets for social services or local women’s shelters in the clinic waiting room might provide information to someone who is otherwise unable to access it. We can also take steps to get to know individuals in our community from other fields, such as social workers, police officers, and SPCCA constables, so that if a questionable case arises, there is already an existing network and familiar faces.

Veterinarians, RAHTs, and clinic staff are in an ideal position to join forces with local women’s shelters and set up fostering systems to take in the pets of families in need of shelter. According to Amy Fitzgerald, PhD, a criminologist professor at the University of Windsor, 56 per cent of women entering a shelter delayed leaving home because they were concerned for their pet’s safety, and 47 per cent would have left their abuser sooner if their pet could accompany them to the shelter. One third considered returning to their abuser because they had their pet. Pets can be threatened or harmed as coercion or revenge. Women’s shelters are aware of this need, but often cannot accommodate pets due to space restrictions, safety concerns, and allergies. An animal foster system involves recruiting foster homes, training foster families, responding to short-notice pickup of animals, and fundraising to feed and care for the animals. Veterinarians often provide complimentary examinations, routine care such as vaccinations and dewormings as well as spays and neuters, as those overlooked procedures encourage responsible pet care. Emergency housing of farm animals and horses might also be required.

Another survey showed 66 per cent of children admitted to shelters had witnessed abuse of their pets. Half had tried to protect their pets. And delivers the recognized benefits of INTRANASAL vaccination1 with a single, one-norist administration. Introducing Nobivac® Intra-Trac® Oral Bb

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VCA Canada Vancouver Animal Emergency & Referral Centre is excited to highlight Dr. Marco Cervi, DACVS.

Dr. Cervi is an experienced specialty surgeon who has practiced across Ontario, Michigan and California before joining our team. As a Diplomate of the American College of Veterinary Surgeons, Dr. Cervi is a key member of our specialty departments. His areas of interest include orthopedic, oncologic, and reconstructive surgery, and minimally invasive surgical techniques including laparoscopy, thoracoscopy, and arthroscopy.

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