WEST COAST
VETERINARIAN
JUNE 2020 | Nº 39

BULLYING IN THE VETERINARY WORKPLACE

+

DOMESTIC VIOLENCE AND COVID-19

ILIOPSOAS INJURIES IN DOGS

OTITIS IN YOUNG ANIMALS

ORAL EXAMINATION OF THE PEDIATRIC AND JUVENILE PATIENT

LESSONS FROM THE TIGER KING

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1. Summerfield NJ, Boswood A, O'Grady MR, et al. Efficacy of pimobendan in the prevention of congestive heart failure or sudden death in Doberman Pinschers with preclinical dilated cardiomyopathy (the PROTECT study). J Vet Intern Med. 2012;26(1):1337–1349.

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COREY VAN'T HAAFF
EDITOR

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

Photo from page 29, courtesy of Angelica Bebel, DVM, Dipl. AVDC

By the time you read this summer message, the world may look a little like it did, a little like it became over the spring, or a little like a new reality. As different as life and work have become, there is, for me, some small comfort in knowing that we are all in the same situation. We are all connected in our desire to keep animals healthy and address animal welfare issues.

But this message is not about animals; it is about humans. It's about the individual veterinarians who contacted the Chapter expressing fear about the virus; concern over their employees' health and their employees' incomes; and genuine commitment to continuing to provide service to patients and clients. I was able to speak to so many of you to hear your fears, which were overcome by your desire to treat animals.

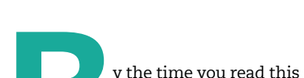
I've always been a fan of veterinarians, but watching you all alter your practices to continue to see animals, to develop safety protocols and distancing measures, and to continue to show up at work each and every day to do your jobs served to augment my already immense respect and gratitude.

I heard about this from many of you, and I got to see it myself more than once as my own dogs visited their veterinarian. I was impressed by the handling of some of my dogs as they went inside without their mommy for treatment, and I appreciated how informed I was kept each step of the way. I was so very proud of how the clinic staff and techs suddenly became mobile veterinary service providers, running animals to and from cars, delivering medicines in bags, and handling animals with such care and affection—things I would not have seen if I was sitting inside an examining room.

I watched my own veterinarian when one of my dogs, who cannot be handled by other people, became sick. Without missing a beat, my veterinarian made my car the examination room, with all of us sanitized, gloved, and masked. The veterinarian was in my car examining Ella, and the tech stood outside the car taking notes, recording vitals, and holding a soiled thermometer—all as if this was just another day. It doesn't sound like much, but to me, a worried mom of a sick, scared dog, it meant everything.

And that's why I get so frustrated at times, reading about the incredible work and recognition going to front-line health care workers, grocery clerks, gas station attendants, truckers delivering food and supplies, those government workers processing economic supports, and the clever teachers and business leaders finding ways to shoot videos so training and leadership continue on. I agree with all this recognition of course, but there is a void in recognizing the amazing, selfless, and important work being done daily, hourly, and sometimes even by the minute, by this province's veterinarians and practice staff. Every single day, you each deserve recognition, thanks, and applause, along with banging pots, sirens, and even some barking and meowing in appreciation. You may not get what you deserve, but I want you all to know, WE SEE YOU. We see exactly how deep your commitment, and how vast your knowledge, and how all-encompassing your commitment is to animal health and welfare.

Every day I see you all, and I say thank you. WCV



Email: wcveditor@gmail.com

JANGI BAJWA, BVSc & AH, Dipl. ACVD, is a board-certified veterinary dermatologist with the American College of Veterinary Dermatology. He works at the Veterinary Dermatology and Ear Referral Medical Clinic in Surrey, BC. He is also a consultant with the Veterinary Information Network and is a dermatology feature editor for the *Canadian Veterinary Journal*. His dermatology interests include otitis and its treatment, microbial resistance, canine and feline allergic disease, and continuing education of veterinary professionals and pet owners.

ANGELICA BEBEL, DVM, Dipl. AVDC, began her veterinary career as a Registered Animal Health Technician. In 2014, she graduated from the Western College of Veterinary Medicine program. Following graduation, she practised general medicine in Vancouver before starting a residency in veterinary dentistry at West Coast Veterinary Dental Services in Vancouver. She received her diplomate status in the American Veterinary Dental College in 2018 and has continued working locally at West Coast Veterinary Dental Services.

EMILIA GORDON, DVM, is the senior manager of animal health for the BCSPCA, providing animal health support, training, and oversight to all shelter branches province wide. Her areas of focus include infectious disease prevention and management, facility housing design, and sanitation. Dr. Gordon also works with veterinary students, participates in community partnerships and outreach, conducts shelter medicine research, and volunteers on the Chapter Animal Welfare Committee.

VERONICA GVENTSADZE, MA, PhD, DVM, graduated from Ontario Veterinary College in 2008. She moved to Squamish, BC, where she worked for two years as an associate veterinarian in a small animal practice. She currently travels across BC as a locum and enjoys learning something new from each practice.

ELAINE KLEMMENSEN, DVM, was once the love interest of a camel and learned she can outrun an ostrich when her life depends on it. After graduating from WCVM in 1991, Dr. Klemmensen's adventures in veterinary medicine have included associate, practice owner, locum, and volunteer with seven organizations in seven different countries. She is passionate about people as well as pets and is studying leadership at Royal Roads University to learn how to help veterinarians and their teams thrive. Her adventures these days are mostly from the seat of a bicycle, but she dreams of riding the Silk Road one day. On a bicycle . . . not a camel.

DAVID LANE, DVM, Dipl. ACVSMR, operates Points East West Veterinary Services, a sports medicine and rehabilitation medicine specialty practice in Squamish, BC. His caseload includes the diagnosis and treatment of lameness conditions in both working and pet dogs. Approximately one-third of his practice is devoted to the palliative treatment of geriatric animals for chronic pain conditions such as arthritis. His research interests include the use of regenerative medicine in tendon and ligament repair, and the link between lower back pain and urinary incontinence.

LOUISE LATHEY, BLES, completed her bachelor of law enforcement studies at the Justice Institute of British Columbia and uses her knowledge of the law in her work at the BCSPCA. Her passion for animals has led to cross-sector collaboration on helping vulnerable people and pets. Her master's research in criminal justice at the University of the Fraser Valley explores the rationale behind animal cruelty with a focus on how it relates to other types of crime.

DANIEL M. WEARY, DPhil, 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 Killam Research Prize.

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WEST COAST VETERINARIAN

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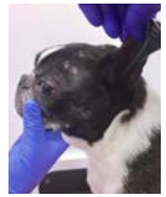
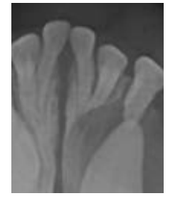
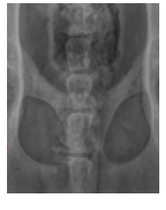
THE BAD AND THE UGLY
BULLYING IN THE VETERINARY WORKPLACE

JUNE







By the time this communication reaches your hands, I hope that we have started to return to a more normal way of life. As I write this, my head is buzzing with the R.E.M. song released in 1987, the anthemic tune called "It's the End of the World as We Know It (and I Feel Fine)." Music has always been an emotional refuge for me. I always studied with a variety of primarily rock and roll music on a turntable or reel-to-reel tape machine close to my workspace. At university I listened to Chicago, with their horn section making the sound full and strong. I was introduced to the incredible Carlos Santana and his band. Of course we can't forget the amazing dual lead guitars of Duane Allman and Dickey Betts of the Allman Brothers Band. The music of the 1980s and 1990s changed but still contained some amazing tunes! I could go on and on, but I won't bore you.

I am sharing this with you because I feel it is important at times of stress and fear that we reach for memories and activities that can soothe our injured souls. Our jobs are emotionally draining at the best of times, and the abrupt changes we have had to make in how and where we practise add extra pressure. We all need to reach out for our own ways of coping. Music helps me. Listening to Eric Clapton's song "Layla" with the pedal steel guitar of Duane Allman alongside of Clapton can always make me smile. I know many of you may not have a clue who I have been talking about, but I'm sure you can find the rhythms that will help you.

Other than my wife and family, my other stabilizer is sport. At university, I swam a lot, walking down the road at the University of Saskatchewan to the pool in the education building to swim half a mile at lunch as many days as I could. I was also involved with the intramural programs at the U. of S., playing soccer, basketball, volleyball, table tennis, hockey (though being a west coaster, I was dismal at skating compared to the prairie players!). Sports took me away from the confines of WCVM to take my mind off learning and blow off some steam. Now I've found another way to benefit from sports by coaching youth soccer two nights and most of a Saturday each week throughout the winter. I enjoy working with the two other coaches and the teenage boys.

So what about you? What have you been able to find that can take you physically and mentally away from the clinic, farm, stable, or lab? There are so many opportunities to play music or sing in choirs, or to be artistic with painting, pottery, sculpture, knitting, etc. Yoga and tai chi can be very good activities as well. Don't forget about trying different cooking or baking methods (of course we have to watch the baking, as we may need to increase our daily dog walking time!). Playing games with our kids can bring us back to reality very quickly as well. Video games may be a passion to try. There is so much out there that can help us relax and forget our worries for a while!

I want to leave you with some words from another famous (at least for us geriatric folks) R.E.M. song released in 1992 called "Everybody Hurts."

When the day is long
And the night is yours alone
When you're sure you've had enough of this life
Well hang on

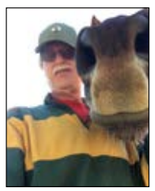
Don't let yourself go
'Cause everybody cries
And everybody hurts
Sometimes
Take comfort in your friends, everybody hurts
If you feel like you're alone
No, no, no, you're not alone!

If you are troubled, please reach out for help. It can be hard, but there is lots of help through friends, colleagues, relatives, and of course Homewood Health offers free consultation to direct you to expertise that can help. *You are not alone!* You are loved and appreciated.

PS: I must thank Corey and Adriana at our SBCV office for their tireless work to keep us all informed through the COVID-19 crisis. We are fortunate to have such dedicated people working for us. Also, Dr. Christiane Armstrong has worked tirelessly, attending conference calls, reviewing emails and blog posts to send to the office and the Board to make sure you are getting the best and most up-to-date information possible. We all owe Christiane our thanks.

Playlist of some of my favourite music:

- R.E.M.'s *Automatic for the People* 25th anniversary deluxe edition, which includes "Everybody Hurts" and "Losing My Religion."
- Santana's "Soul Sacrifice" from the 1970s, the 1999 resurgence with *Supernatural*, and the Allman Brothers Band *At Fillmore East*, recorded in 1971. Terrific if you like longer jamming-style music.
- Anything by Melissa Etheridge! WCV



Al Longair, BSc, DVM, graduated from the Western College of Veterinary Medicine in 1977. After graduation, he joined a mixed animal practice in Duncan, focusing on small animal practice from 1981 on. He has been involved with the BCSPCA for over 20 years, serving as the president of his local branch for 12 years and on the provincial management committee for 10 years, with four years as president. In the early 1990s, he served as chair of the CVMA Animal Welfare Committee. He lives on a small acreage with his wife, four horses, and four dogs and coaches youth soccer in his spare time.

As your CVMA president, it's my pleasure to provide you with updates on some of the CVMA's initiatives. We want you to know that the CVMA stands in solidarity with all CVMA members, veterinary professionals, human healthcare workers, and all Canadians during this difficult time.

WE'RE WITH YOU EVERY STEP OF THE WAY

We have entered an unprecedented time in our country's history due to various threats posed by COVID-19. The CVMA wants to reassure members that their national association, in coordination with provincial veterinary medical associations and regulatory bodies, is in continuous contact with federal agencies to bring veterinarians the most current information to protect their clients, teams, and families. Please visit the CVMA's dedicated COVID-19 web page at canadianveterinarians.net/coronavirus-covid-19 for up-to-date information and resources, including the recorded webinars discussed below.

IT'S TIME TO APPLAUD THIS COUNTRY'S VOLUNTEERS

Every April, National Volunteer Week honours the veterinary professionals who donate their time and expertise to various CVMA projects supporting Canada's veterinary profession. An article posted in the CVMA website's News and Events section, the CVMA's eNewsletter, and the April issue of the *Canadian Veterinary Journal* highlighted volunteers' contributions and discussed ways to get involved. I would also like to give special thanks to some of the volunteers who stepped up during this pandemic and made invaluable contributions to our profession.

A big, heartfelt thank-you to the CVMA's COVID-19 Working Group:

- Dr. Christiane Armstrong, CVMA National Issues Committee council liaison
- Dr. Marc Cattet, registrar and CEO of the Saskatchewan Veterinary Medical Association
- Dr. Serge Chalhoub, CVMA National Issues Committee member
- Mr. Douglas Jack, partner at Borden Ladner Gervais
- Dr. Frank Richardson, registrar of the Nova Scotia Veterinary Medical Association
- Dr. Ian Sandler, CVMA National Issues Committee Member

Dr. Ian Sandler moderated a webinar titled "Navigating the Financial Implications of the COVID-19 Crisis on Veterinary Medicine in Canada," with presentations from Dr. John Tait and Mr. Dave Legault. This webinar was designed to aid veterinarians with various issues relating to the COVID-19 pandemic, including tax and human resources concerns, personal portfolio management, new norms for business valuation and transactions, the nature of supply-based recessions, and operational tips on the value of discounts now and approaching recovery.

Mr. Douglas Jack facilitated a question and answer session after the webinar titled "COVID-19 Legal Perspectives: Workplace Issue," presented by his law firm, BLG. The webinar explored topics such as temporary layoffs, constructive dismissal claims, work refusals for unsafe work, changes to employment insurance, and new statutory leave for quarantine.

Dr. Serge Chalhoub led a webinar on veterinary telemedicine, including a question and answer session on what it is and what you can do to get started.

Dr. Kathy Keil, member of the ABVMA and CVMA Member Wellness Committees and a technical services veterinarian with Merck Animal Health, led a mental health webinar titled "Staying Psychologically Safe in the Face of COVID-19," informing veterinarians about community and social resources for their psychological safety, practising evidence-based mindfulness techniques, and how to be together with kindness for ourselves and each other.

Please protect your own health and practise the COVID-19 prevention and containment directives as per the Public Health Agency of Canada. WCV

Melanie Hicks, BSc, DVM, obtained her BSc from the Nova Scotia Agricultural College before attending the Atlantic Veterinary College. Originally from Prince Edward Island, she moved with her family in 2003 after graduating to Moncton, New Brunswick, and began her career as a companion animal practitioner. After 10 years of practising, Dr. Hicks joined Abaxis Global Diagnostics as a professional services veterinarian. She has been involved with the New Brunswick Veterinary Medical Association as a council member since 2009 and was acting president from 2011 to 2012. She joined the CVMA as a council member in 2013, serving on numerous task forces including the Business Management Advisory Group, Veterinary Wellness Advisory Group, and an innovation and technology group. Dr. Hicks currently lives in Moncton with her husband and son on a small alpaca farm and is working on her MBA in her spare time.

DEAR EDITOR,

I was glad to see Dr. Scherk's article on feline zoonoses, which effectively provided many rational approaches for minimizing risk. It is important to mention, however, that new research demonstrates that cats will shed *Toxoplasma gondii* more than once in their lifetime.[1] As Dr. Scherk pointed out, the risk of *T. gondii* exposure does not come from simple cat ownership; it comes from environmental contamination or infected food. However, a critical point is that free-roaming cats significantly contribute to this contamination. Dr. Scherk mentioned preventing hunting, but this is not possible if cats (or dogs) are roaming unsupervised. Animals that free roam typically have higher parasite loads, and the most effective way that owners can reduce their risk and the risk to those around them is to restrict unsupervised access. Free-roaming cats pose the greatest risk not to owners, but to people who are unknowingly exposed in public areas such as playground sandboxes, community gardens, or private backyards. Veterinarians can refer to the primary scientific literature to obtain field data.

The current pandemic has demonstrated that the public expects individuals to be socially responsible and to do their part by not exposing fellow community members to infectious disease. *T. gondii* infections are thought to be lifelong, and although most infections remain latent, immunocompromised people, or children infected *in utero* can be severely impacted. Therefore, it is essential to be proactive and to limit unnecessary exposure from free-roaming pets. Everyone benefits from veterinary guidance on responsible, healthier choices that meet feline enrichment needs without defaulting to free roaming. Progressive alternatives such as harness-trained cats going on hikes with their families and lounging in catios leads to healthier cats and encourages cat owners to be engaged; cats deserve this.

Amy Wilson, DVM, Vancouver, BC

"WASH YOUR HANDS. DON'T EAT POOP."

DR. SCHERK RESPONDS

In response to Dr. Wilson's letter, I reached out to Dr. Michael Lappin as he is not only the chair of the American Association of Feline Practitioners (AAFP) Zoonoses Guidelines Committee and hence the best person to respond, but he is also still doing research on toxoplasmosis specifically, and of course also many other infectious diseases of cats. Additionally, he is the chair of the World Small Animal Veterinary Association One Health Committee. Here is his response:

> Thank you for reaching out concerning *Toxoplasma gondii* oocyst shedding in previously infected cats. We addressed this briefly in the updated AAFP Zoonoses Guidelines[2] on page 1011, column one, first paragraph. We only provided the one reference to save space, but I think the statement is accurate, and reference 31 is a good example paper. The gut immunity against *T. gondii* is not permanent or sterilizing and so repeat shedding is possible, but when it occurs, fewer oocysts (or none) are generally shed than with the primary infection. We also failed to induce repeat oocyst shedding in cats treated with cyclosporine as discussed in reference 32. I believe the body of work to date supports that the cat with primary infection is the most likely to contaminate the environment, but secondary infections may also play a role. However, there is limited information on whether continued exposures result in repeated shedding each time. Thankfully, since the oocysts require a sporulation period, *T. gondii* infections from ingestion of sporulated oocysts appear to be acquired more commonly from the environment than from touching cats. Thus, water filtration, washing/cooking of produce, and hand washing after gardening should lessen the risk of infection to people. Whether housing cats indoors lessens the overall risk of *T. gondii* infection in people is debatable for a number of reasons. For example, transport or intermediate hosts can come into the home. In addition, while we may be successful in having some cats housed indoors, there will always be some feral cats, and the life cycle can also be completed by other cat species. In addition, ingestion of the organism in undercooked meat products still accounts for many infections of people.

From my own perspective, I would also like to add a few thoughts. As Dr. Lappin states, the risks are minimal for becoming infected with *T. gondii*. If cats are healthy, being dewormed, and being administered flea and tick control, risks from any zoonotic agent are minimal. But the vast, vast majority of people remain safe.

Toxoplasmosis has always scared people. For those affected by it, it is horrific. Early in both of my pregnancies I was tested and was disappointed that despite working with cats and being a gardener, I remained negative. Protective immunity would have been welcome. We are justifiably hyperaware in the era of SARS-CoV-2, but need to remain vigilant and keep risks in perspective to avoid causing panic.

Or further harm . . . there is a growing body of information recognizing that keeping cats strictly indoors can be harmful to them. We now recognize that many of the chronic inflammatory diseases that cats are presented for as well as sickness behaviours in otherwise healthy cats are associated with lifestyle and housing. So, no, I do not support keeping cats inside . . . unless, and this is a big unless, we take the time to teach and clients are willing to implement an indoor lifestyle that allows cats to express all of their species-specific behaviours. The BBC recently published a story containing a statement about keeping cats indoors during the pandemic, after which the British Veterinary Association (BVA) immediately clarified their position. The BVA president said, "We are not advising that all cats are kept indoors. Only cats from infected households or where their owners are self-isolating, and only if the cat is happy to be kept indoors. Some cats cannot stay indoors due to stress-related medical reasons."[3] Further, on the same day, International Cat Care put out a strong statement to underscore that all cats should not be kept indoors due to the stress associated with indoor confinement.[4] Some outdoor cats can adapt, but not all: they haven't been domesticated to live in such an environment. We can find a best-of-both-worlds situation for some cats by providing catios, but not everyone is able to do that and that may not be sufficient for many cats. As to teaching people to invest the time and provide a species-appropriate environment indoors . . . well, we can't even seem to understand what staying two metres apart entails.

In 2016, the AAFP published a position statement titled: "Impact of Lifestyle Choice on the Companion Cat—Indoor vs. Outdoor"[5] about which Dr. Scott Weese wrote: "It's a complex situation and I know I'll get strongly opinionated comments in response to this topic. In my perfect world, all cats would be indoors, but not all cats fit into my perfect world. So, I think the default should be keeping cats indoors whenever possible, both for their health and the health of their families. That's particularly important when the people or cats are at increased risk of disease. But, some cats won't do well inside 24/7 and some allowances can be made for them as well, in the right situations. The indoor/outdoor decision needs to be made based on a large number of factors and there's no single approach that works for all cats, households and regions."[6] At that time, he had three cats, only one of whom was strictly indoors.

Ultimately it comes down to what Dr. Scott Weese tells us repeatedly: "Wash your hands. Don't eat poop." WCV

Margie Scherk, DVM, Dipl. ABVP (Feline)

[1] Dauton Luiz Zulpo, Ana Sue Sammi, Joeleni Rosados Santos, João Pedro Sasse, Thais Agostinho Martins, Ana Flávia Minutti, Sérgio Tosi Cardim, Luiz Daniel de Barros, Italmar Teodorico Navarro, and João Luis Garcia, "*Toxoplasma gondii*: A Study of Oocyst Re-shedding in Domestic Cats," *Veterinary Parasitology* 249 (January 2018): 17–20, https://doi.org/10.1016/j.vetpar.2017.10.021.

[2] See special article "2019 AAFP Feline Zoonoses Guidelines" in the *Journal of Feline Medicine and Surgery* 21 (2019), 1008–1021, https://journals.sagepub.com/doi/pdf/10.1177/1098612X19880436.

[3] "BVA Statement on Cats and Covid-19," BVA, April 8, 2020, https://www.bva.co.uk/news-and-blog/news-article/bva-statement-on-cats-and-covid-19.

[4] "Covid-19: Don't Start Keeping Your Cats Indoors," International Cat Care, April 8, 2020, https://icatcare.org/covid-19-dont-start-keeping-your-cats-indoors.news-and-blog/news-article/bva-statement-on-cats-and-covid-19.

[5] "https://catvets.com/guidelines/position-statements/lifestyle-choice-position-statement

[6] Scott Weese, "The Indoor/Outdoor Cat Debate," *Worms and Germs Blog*, September 26, 2016, https://www.wormsandgermsblog.com/2016/09/articles/animals/cats/the-indooroutdoor-cat-debate.

Twelve-year-old Reina with young Shadow.

A HORSE *AND HIS* GIRL

BY REINA GABRIEL FENNELL

"I suppose anyone can fall," said Shasta.
"I mean can you fall and get up again without crying and mount again and fall again and yet not be afraid of falling?"
— C. S. Lewis, *The Horse and His Boy*

I could hear the thundering of hooves. The woman beside me had just whistled, a signal her herd of 15 or so horses must associate with feeding time because they responded readily. They came streaming down the hill, out of the trees to our right, fanning out in the flatter, open section of the pasture that was probably many acres in total. Several of them bucked and kicked or nipped at each other, others slowed to graze the fall stubble, and a few approached the woman to see if she did indeed have food.

"That's him." She said, pointing at a horse on the outskirts of the group. He was rummaging under the edge of a log for whatever green stuff hadn't been discovered there yet. He shied away from another horse when it came near. We approached him and he raised his head to look inquisitively at the woman, probably also hoping she had treats, but he kept a wary ear on the horse closest to him. "One of the reasons we need to sell him is the other horses beat him up," said the woman, gesturing to his scruffy appearance and several obvious bite marks. "He's one of the youngest and smallest, and he's a gelding. Most of these others are mares. And he's also too fine-boned to be a logging horse, and that's why my husband bought the group he was in at auction." I reached toward him with a carrot the woman had given me, and he stretched his nose out to grab it. His whiskers and warm breath tickled my fingers and flattened palm. "His name is Shadow," added the woman. *Shadow*, I thought, *my Shadow*.

He was black and had big, wide-set brown eyes. His star was in the very middle of his forehead and was in the shape of an eagle in mid-glide, or at least that's what I thought. It was September 2007. We had driven all the way from the coast to Quesnel, and he was my 11th birthday present. I had received a picture and a bridle the month before on the actual day, and it had taken some convincing before I was able to believe that my parents had actually bought me a horse, my very own horse. Most young girls are drawn to horses, or "go through a horse phase," but I had decided I was a horse person before I could talk (according to my mum and based on my choice of stuffed toys) and stuck to it. All I wanted from then on was horse books, horse pictures, and horse models. It drove my parents a bit crazy I think, because in nearly any other place in BC, besides the middle of a city, it is relatively easy to have a horse or at least find other people's horses for your kid to spend time with. But we lived on a small acreage on a very small island an eight-hour ferry ride away from the mainland. Horses on Haida Gwaii are very few and far between because it is *not* an easy place to have a horse. But I wasn't to be distracted or deterred or satisfied by the many toy horses I was given or by our other family pets; my goal in life was to have a walking, whinnying, eating, breathing, real, live horse. And then one day, after ages and ages of waiting and hoping and educating my parents daily on all things I knew about horses that would make me a good horse owner, I met a gangly, beat-up four-year-old Arabian–quarter horse–thoroughbred gelding and learned that dreams can come true . . . but that dreams are a lot of work.

I had been very lucky as far as an animal-loving child goes, even before this. I had a solid bear of a dog from the SPCA as a fast friend and nanny (she was the same age as me) from the time I was two. A mixed flock of laying hens, their complementary pet roosters (we never kept meat birds because my folks didn't want to break my heart), and ducks since I was four. And guinea pigs (in multiples of two) from my fifth birthday onward. I had decided I would be a veterinarian shortly after deciding I would be a horse girl apparently, and my parents called me Dr. Dolittle because whenever one of the chickens seemed off, I would mash up grass with chicken feed and sit protectively beside it to keep all the other chickens away while it ate. I'm sure all of these things played a role in me actually pursuing veterinary medicine in the end, but my horse was without a doubt what kept me on the path to where I am now.

I travelled and worked for a year after high school. I really enjoyed that lifestyle and wondered if I should just keep doing it, but what brought me back to enter post-secondary education was that every time I interacted with horses, I was reminded that I had always wanted to be a veterinarian for a reason: to be a horse doctor. I wanted to help keep other peoples' horses happy and healthy so they could have the kind of relationship I had with my horse. That kept me going through my two years of undergrad too, and then, lo and behold, I got *the letter*. And I was brought back to being that 11-year-old again who realized that with hard work and persistence, despite all the obstacles along the way and things never working out as expected, you can do anything you set your mind to. But of course that mind-set would be challenged beyond anything I could have imagined in actually surviving the veterinary program.

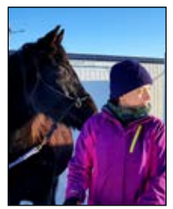
Shadow came to Saskatchewan with me for the first two years of my DVM, thanks to the help of my dad. Winter Saturdays at the barn, despite the average temperature being –30, were little glimpses of sunshine (or Shadow, haha) in what was otherwise a lot of dark months hunched over my books, worrying about being prepared for labs and exams. It blows my mind how our animals often look at us as if we're the best thing in the whole world just because we give them food—little do they know how much they do for us. I am loved and supported by a lot of good people, friends, and family, and that really helps too, but really what has gotten me through veterinary school so far is my horse.

PHOTOS COURTESY REINA GABRIEL FENNELL

"BUT REALLY WHAT HAS GOTTEN ME THROUGH VETERINARY SCHOOL SO FAR IS MY HORSE."

Reina in her teens riding Shadow in front of her family home on Haida Gwaii.

It's been a very challenging couple of months, for the world, for Canada, for students—everyone. The pandemic has scattered the students of WCVM back to their homes for the rest of term to finish our coursework online. Thanks to the university administration and our professors rapidly developing various remote delivery tactics, at least we are able to complete our degrees despite the stress of uncertainty and less-than-ideal circumstances. I am currently back on island time for a while. It's a bit of stolen time really, with my family, our animals, and the place I grew up while everything is paused, and although I wish it weren't due to the current situation, I am grateful for it just the same. I was in the barn last night, as I am every night and morning, like when I was growing up, with Shadow and his companion, Sam. Shadow is getting older: 19 already. There are grey hairs on his face and in his mane. He gets stiff when it's damp, and he's lost his devilish side and a good deal of the craziness he had when he was younger, but he still has big, inquisitive brown eyes. He's always happy to see me. And time and time again, although life has so many unexpected challenges, he makes me feel that everything is going to be okay. WCV



Reina Gabriel Fennell, WCVM class of 2021, grew up on an acreage on Haida Gwaii surrounded by marine and forested wilderness, which started her on her journey of getting as many experiences with different species as she could on the islands, in other parts of Canada, and abroad. She completed two years of a BSc in bioveterinary science at Dalhousie University's Faculty of Agriculture before being accepted into WCVM in 2017. After graduation, she would like to be a large animal veterinarian with a focus in equine medicine and surgery.

OTITIS IN *YOUNG* ANIMALS

BY JANGI BAJWA, BVSc & AH, DipI. ACVD

West Coast Veterinarian is pleased to introduce a new topic for "A Year in the Life." Each four-part column is written by one veterinary specialist about one topic that has four distinct life phases. Through the course of the year, each instalment highlights how this topic affects animals at a certain life stage and what veterinarians should know about how to treat it. This year's focus is dermatology.

FIGURE 1: Otoscopic examination is an important part of ear assessment in practice. Note the extension of the pinna to straighten the external ear canal for access to the entire ear canal.

PHOTOS COURTESY JANGI BAJWA, BVSc & AH, DipI. ACVD

Otitis is a common disease presentation in small animal practice. Often, pet owners are unaware of their pets' otitis until it is diagnosed during routine wellness examinations. This is especially true for early and acute cases. Otic assessment is an important part of physical examination of pets in veterinary practice, and as with most other examination techniques, the best time to start ear assessments on a patient is while they are young.

Otic assessment in pets includes various steps and may be undertaken throughout a patient visit, starting with distant observation of the ear pinna. The quality of the hair on the pinna and ear margins as well as evidence of head tilt, head shaking, and ear scratching can often be assessed during patient history collection. This is followed by palpation of the ear canals and closer visual inspection of the ear canal opening, pinna folds, and ear margins. During this part of the ear assessment, you may observe clinical signs associated with otitis, including erythema, scaling, crusting, alopecia, discomfort or pain on palpation of the auricular cartilage, otic discharge, and odour from the ear. Palpation of the ear canal or pinna may induce pruritus in some patients. Lesions may extend beyond the pinna and may include skin at the temples, head, and lateral or caudal aspect of the ear base.

"NEW VETERINARY GRADUATES AS WELL AS EXPERIENCED VETERINARIANS ARE ENCOURAGED TO TAKE EVERY OPPORTUNITY TO ASSESS HEALTHY EAR CANALS IN PATIENTS ANESTHETIZED FOR NON-DERMATOLOGICAL REASONS."

Otoscopic examination (see Figure 1) forms a vital part of ear examination. The health of deeper structures, including the vertical and horizontal ear canal, as well as the tympanic membrane, can be assessed with otoscopy. Pathological changes such as ear canal erythema, glandular hyperplasia, excessive otic cerumen, otic masses, otic foreign bodies, or stenosis of the ear canal may be evident. Increased opacity of the tympanic membrane or evidence of a ruptured tympanum may also be noted using otoscopy. If unilateral otitis is suspected, the unaffected ear is generally assessed first to help establish baselines for the diseased ear, as well as to help with patient compliance by handling the non-sensitive ear first. Making otoscopic examinations a part of all routine pet evaluations can help the clinician become comfortable with normal structures of the ear. New veterinary graduates as well as experienced veterinarians are encouraged to take every opportunity to assess healthy ear canals in patients anesthetized for non-dermatological reasons as well as pets presented for routine health evaluation.

As a brief overview of basic ear anatomy, the ear is made of the pinna (auricle), external ear canal (auditory canal), middle ear, and inner ear. Pinna carriage is breed specific in dogs, but the pinna is generally upright in cats. Based on the breed, few to numerous hairs may be present at the external ear canal opening as well as along the canal. The external ear canal of cats is devoid of hair. The ear canal itself consists of an initial vertical canal that runs ventrally and slightly rostrally, joining into the shorter horizontal canal that runs medially until it meets the tympanic membrane. Because the external ear is elastic, the ear canal can be straightened vertically without injury or discomfort to the patient, permitting detailed and deep otoscopic examination by the trained clinician. The ear canal is lined by skin containing sebaceous glands, ceruminous glands, and hair follicles. Glandular secretions form the earwax. The tympanic membrane is the final structure visualized using otoscopy in healthy ears. It separates the external ear from the middle ear and is located at a 45-degree angle to the central axis of the horizontal canal. Structures on the tympanum that can be visualized include the small upper opaque and vascular portion (pars flaccida), the larger lower membranous and translucent portion (pars tensa), and the manubrium of the malleus embedded in the tympanic membrane. Knowledge of these structures helps the clinician reliably confirm tympanum health or lack thereof.

In any diseased ear, the final part of otic assessment includes diagnostic sampling of the ear canal and/or pinna to check for secondary infection, using a cotton-tipped applicator. If excessive cerumen or debris is present in the ear canal, gentle ear flushing to remove excessive otic material is often done before starting otic therapy. For painful ears, sedation or anesthesia may be required to help complete otic examination and/or treatment.

Although these general guidelines for otic evaluation and treatment hold true at all life stages, regular otic evaluation and treatment are especially important in early life, as early intervention and correction of otitis and its cause are key in preventing chronicity of disease in the patient. Some common

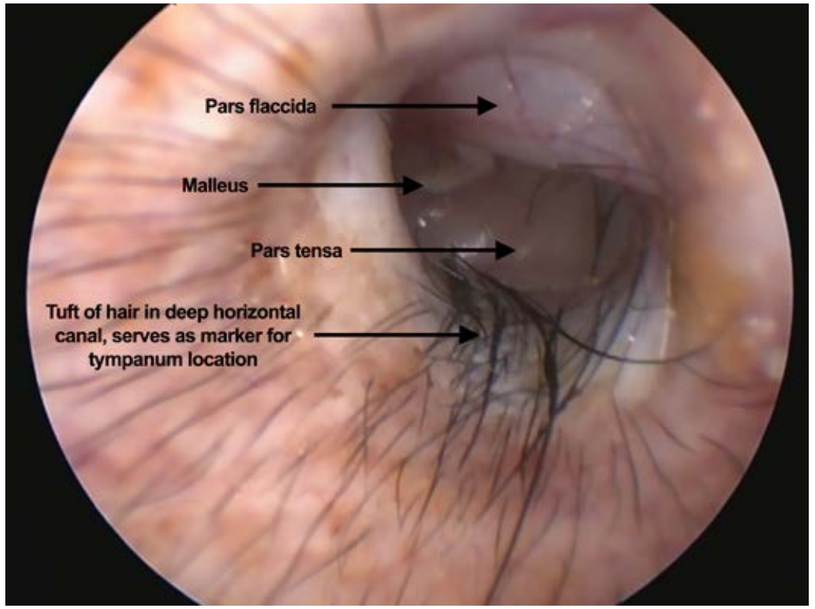


FIGURE 2: Healthy tympanic membrane in a young dog, demonstrating identifying structures of a healthy eardrum.

presentations of otic disease that usually manifest within the first few months of life include the following:

1. *Otodectes cynotis* (ear mite) infestation may affect any dog or cat, but its highest incidence is seen in kittens. Ear mites cause the typical dark-brown to black, waxy or crusty otic discharge, popularly described as causing a "coffee grounds" appearance of the earwax. Occasionally, ectopic mites may cause skin symptoms and may be difficult to find in the ear canal. Mites can be seen via otoscopy or microscopic examination of earwax. Presence of even a single mite or egg confirms the diagnosis.
2. Excessive ear cleaning can lead to excessive humidity in the ear canal, especially in dogs with hairy ear canals, and should be avoided in healthy puppies.
3. Hair plucking may lead to excessive inflammation in the ear canal. Dogs with hirsute ears do not need hair plucking if they do not show signs of otic disease.
4. Feline inflammatory polyps are non-neoplastic masses of the ear canal. Otoscopic evaluation helps visualize a smooth fleshy mass in the canal, and can be seen in cats between a few weeks to few months of age, although older cats can also be affected. These polyps may involve the middle ear, and symptoms may include chronic or recurrent otitis, pruritus, otic discharge, nystagmus, Horner's syndrome, and head tilt. Unilateral disease is more common, although bilateral polyps are also seen.
5. Environmental and/or food allergy is a common primary cause of otitis in dogs and cats of all ages. Historically, very young puppies and kittens affected with dermatological and otic conditions were considered to be more likely to have food allergies than environmental allergies, but this may not always be true, so it is important to do a proper allergy workup rather than assuming food allergy to be the cause in younger animals.
6. Juvenile cellulitis in puppies often involves the ear canal and may initially start with otitis externa and pinna disease, along with facial lesions and marked lymphadenopathy.
7. Secondary infection with bacteria and/or *Malassezia* yeast is common with all primary ear conditions and can become a perpetuating factor if left untreated. No matter the primary cause of otitis in a pet, cytological testing to help design antimicrobial treatments is essential for success in treating otitis patients. WCV

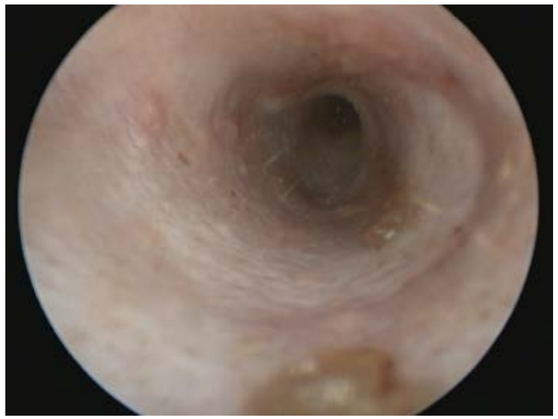


FIGURE 3: Ear canal of a young dog exhibiting mild erythema of the canal.

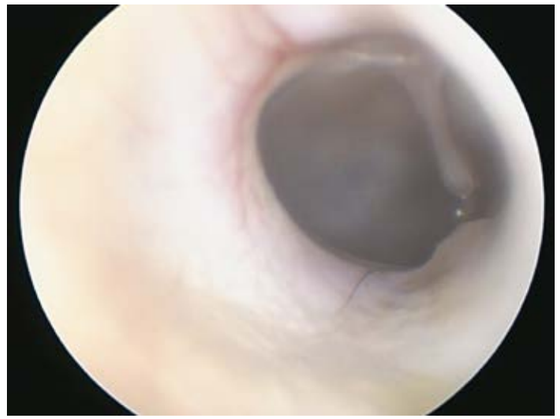


FIGURE 4: Healthy tympanic membrane in a cat.

DOMESTIC VIOLENCE AND ANIMAL ABUSE *DURING COVID-19:* **THE ROLE OF THE VETERINARIAN**

BY EMILIA GORDON, DVM, AND LOUISE LATHEY, BLES

The video was chilling. A couple and their dog enter a Florida veterinary clinic, and the man holds the dog on the leash while the woman goes into a back bathroom. When she exits, before she returns to her companion's line of vision, she slips a note to the receptionist. She quickly doffs her sunglasses so they can see her bruised eye. The note says: "Call the cops. My boyfriend is threatening me. He has a gun. Please don't let him know."

The staff read the note and exit the area and do everything correctly, calling the police without alerting the man. As the couple and their dog waited in an examination room, time must have almost stood still for the woman, who wouldn't have known exactly what was going on.

The police arrive and take control of the scene. The video inside the exam room clearly shows the man, thumbing his cell phone, when the exam room door opens, and police enter *en masse*. Lifting the man's T-shirt, the police remove his loaded handgun and arrest him. In a later interview, the woman explained her boyfriend had been assaulting her for two days and her dog had what she thought was an injury caused by a bullet grazing its ear.

Not all cases of domestic violence present in such an obvious fashion. There are many other signs, some so subtle that they might go unnoticed. The veterinarian as "the other family doctor" may be the first person to pick up on signs of violence in the home. Veterinarians are trained to treat animal patients. We rely on the guardian for information about the primary concern and history—all the things the animal cannot tell us. We rely on our clinical skills to diagnose and treat the animal. And although animals cannot speak, they may be able to tell us they live in a home where there is domestic violence or animal abuse.

It has been noted by anti-violence workers that the risk of domestic violence drastically increases during a natural disaster, and this has proven to be accurate during the COVID-19 pandemic. A crisis hotline in Vancouver reports that their call volume has increased by 300 per cent during the pandemic. Some of the first countries

"THE VETERINARIAN AS '*THE OTHER FAMILY DOCTOR*' MAY BE THE FIRST PERSON TO PICK UP ON SIGNS OF VIOLENCE IN THE HOME."

heavily affected by COVID-19, including China, Spain, and the United States, report national or regional increases in domestic violence cases, including child abuse.[1] This is due to more people witnessing abuse in the home and more people with fewer options looking for assistance.[2] Loss of income and jobs, heightened anxiety and other mental health challenges, families under stress confined in close quarters, and lack of access to professionals such as teachers and doctors who often recognize and report abuse may all contribute to increased incidence of domestic violence.

Due to COVID-19 physical distancing precautions in veterinary facilities, many veterinarians are now not able to speak with animal guardians directly. This can complicate efforts to understand the history and identify risk factors. Survivors of domestic violence may go to great lengths to hide their injuries or deflect any attention brought to the topic. It is important to ask questions in a respectful and tactful manner. Sometimes the answers are in what's not being said. Critical listening is required. Of course, none of us want to believe that injuries in our patients are due to abuse; however, listening to that voice in the back of your head could save an animal's life and potentially even their owner's. Look for unusual or recurrent injuries and stories that don't add up.

In the province of British Columbia, under the Prevention of Cruelty to Animals Act, Section 22.1, a registered veterinarian has a duty to report distress. This does not mean that the veterinarian has to provide forensic evidence or irrefutable proof. It means simply that, if a veterinarian on reasonable grounds believes that an animal is being caused distress, they must report it and the case may be investigated by trained investigators. In BC, cruelty cases are investigated by BCSPCA investigators, who have received training on the link between domestic violence and animal abuse and how to cross-report to law enforcement and social services if a victim or family needs help. Veterinarians should familiarize themselves with signs of physical abuse and neglect and basic evidence handling and collection techniques required to document cruelty cases. If the veterinarian is concerned for the animal owner's immediate safety, they should contact local police.

Although many women will ask for help, there are still a large portion who won't. This is often for fear of their own life or the life of their pets. In a study conducted by the University of Windsor, it was found that 56 per cent of women delayed leaving because they didn't have anywhere to take their pet—and that 89 per cent of women who were abused reported that their pets were also abused by their partner.[3] Abusers may hurt animals in an effort to control or harm women or children in the home. If a veterinarian suspects animal abuse, they may also be suspecting family violence.

Domestic violence in Canada accounts for approximately one-third of police-reported violent crimes, and 6 out of 10 domestic homicides were preceded by a known history of violence.[4] It is important now, more than ever, to be vigilant and aware. A veterinarian's instincts and experience can identify red flags for violence in the home; reporting these can save both human and animal lives. WCV

[1] Brittany Hill, Phil Arkow, and Andrew Campbell, "The Hidden Dangers of Lockdown Orders for Domestic Violence Victims and Companion Animals," Animal Legal Defense Fund, April 10, 2020, https://aldf.org/article/the-hidden-dangers-of-lockdown-orders-for-domestic-violence-victims-and-companion-animals.

[2] Rumina Daya and Jon Azpiri, "Calls to Vancouver Domestic-Violence Crisis Line Spike 300% amid COVID-19 Pandemic," *Global News*, April 7, 2020, https://globalnews.ca/news/6789403/domestic-violence-coronavirus.

[3] B. J. Barrett, A. Fitzgerald, R. Stevenson, and C. H. Cheung, "Animal Maltreatment as a Risk Marker of More Frequent and Severe Forms of Intimate Partner Violence," *Journal of Interpersonal Violence*, https://doi.org/10.1177%2F0886260517719542.

[4] Statistics Canada, Family Violence in Canada: A Statistical Profile, 2018. Retrieved from https://www150.statcan.gc.ca/n1/en/pub/85-002-x/2019001/article/00018-eng.pdf?st=Y9yhapw7.

RESOURCES

THE VETERINARIAN'S ROLE IN HANDLING ANIMAL ABUSE CASES:
www.canadianveterinarians.net/policy-advocacy/recognizing-abuse-veterinarians-role

PREVENTION OF CRUELTY TO ANIMALS ACT:
www.bclaws.ca/civix/document/id/complete/statreg/96372_01

VICTIMLINKBC:
www2.gov.bc.ca/gov/content/justice/criminal-justice/victims-of-crime/victimlinkbc

ENDING VIOLENCE ASSOCIATION OF BC:
endingviolence.org

BC 211:
www.bc211.ca

PHOTO BY KAMIRA/SHUTTERSTOCK.COM

PHOTO BY VOLUNTARYIST/PIXABAY.COM

LESSONS LEARNED FROM THE TIGER KING

BY DANIEL M. WEARY, DPhil

"IF THE WAY THESE TIGERS ARE USED AND KEPT IS UNACCEPTABLE, THEN WHAT OTHER TYPES OF USE AND CARE SHOULD ALSO BE QUESTIONED?"

For those of you who have not yet had the chance to meet Joe Exotic, Doc Antle, Carole Baskin, and the other challenging characters in the popular Netflix documentary *Tiger King*, I encourage you to do so. Yes, the show is profane and disturbing, but it shines a powerful light upon issues relevant to all of us who are interested in animals and their role in our society. In media coverage of the documentary, commentators have called for a number of changes, including the obvious (for example, legal changes that prevent or restrict keeping exotic animals, such as British Columbia's Controlled Alien Species Regulation that restrict individuals from keeping tigers and some 1,200 other species). The skeptic may see this simply as a case where notoriety provides a soapbox from which pre-established positions can be advocated, but I suggest that *Tiger King* also provides an opportunity for viewers to reflect upon the broader issues related to animals. In particular, from this wreckage surrounding the private ownership of large cats there are at least three lessons about the human-animal relationship.

LESSON 1—VULNERABLE PEOPLE ARE DRAWN TO ANIMALS

The employees working with the tigers are often social outsiders, sometimes dealing with drug abuse and poverty, suggesting that the more vulnerable in our society are perhaps especially drawn to the tigers. Despite their failings in adequately meeting the needs of the animals, the workers give much of their life (and—spoiler alert—sometimes limb) trying to care for the animals. Throughout the documentary, the workers attest to their desire to care for what they view as creatures in need, even when this makes them complicit in exploiting the animals. A related question, stemming from the wild popularity of this show as the world suffers the collective anxiety brought on by the COVID-19 pandemic, is whether the draw of contact with animals is even greater when we experience social stress. In Vancouver at least, shelters for companion animals have experienced increased demand from adopters during the crisis. Thus lesson 1 is that even (and perhaps especially) when socially or emotionally vulnerable, humans have a great desire for some connection with animals. Acknowledging this, we are left with the question: how can we do a better job (for both animals and people) of responding to this need?

LESSON 2—HUMANS DRAW POWER FROM ANIMALS

At least in part because of the great draw of these animals, those who control access to the tigers seem to be able to exert great power over those who wish to work with them. In all three of the animal facilities featured, the staff is portrayed as either underpaid or unpaid, and in some cases the owners are portrayed as controlling and verbally and perhaps otherwise abusive. In this way we see a very dark side of the ways in which humans use animals—initially as a lure to attract others, and then as a tool to extend the reach of their control. Thus lesson 2 is that people sometimes use access to animals to exert control over others, opening the door to abusive or perhaps otherwise inappropriate relationships. Acknowledging this, we are left with the question: how can we put safeguards in place to reduce these risks?

LESSON 3—HUMAN AND ANIMAL WELFARE ARE INTERTWINED

In recent years, the idea of "one health" (that is, that human health is connected to animal and environmental health) has been extended to "one welfare" (that is, that the quality of life of animals is related with the welfare of the people who care for them). In the documentary, the workers' living conditions are portrayed as being dirty, barren, and neglected, much like the conditions seemingly provided for the animals. As I write this, the news feeds are full of stories about the high rates of COVID-19 infections among slaughterhouse workers in the US, suggesting that the often-marginalized workers whose job it is to kill and process animals for our consumption are themselves working in conditions dangerous to their health. Indeed, once you are primed to look for it, the evidence for lesson 3, that the well-being of animals and their caregivers is intertwined, seems present all around us. The good news is that acknowledging this relationship provides another powerful rationale in advocating for improved standards of animal care.

Tigers, like the humans portrayed in *Tiger King*, are so incredible we can scarcely believe they exist. The exotic nature of the characters helps to draw us into the story, but like all good storytelling, the specifics serve to reveal more universal truths. Yes, there are powerful messages specific to tigers kept for display and as companions, and more broadly concerning the care, breeding, and trade of exotic animals. But perhaps our collective viewing of *Tiger King* can also trigger broader reflection on our relationship with animals. If the way these tigers are used and kept is unacceptable, then what other types of use and care should also be questioned? Other instances of keeping exotics, keeping animals for display, keeping animals in poor living conditions, breeding animals simply so we can use the offspring for our pleasure? And what about the marginalized and vulnerable people who care for animals—what support can be provided to improve their lives and the lives of animals in their care? If you've watched this show, you've suffered the evil. Now use it for good. Talk to others about these questions, and let's see what collective lessons can be drawn from this experience. WCV

THE *BAD* AND THE UGLY:

BULLYING IN THE VETERINARY WORKPLACE

BY VERONICA GVENTSADZE, MA, PhD, DVM

The most valuable compliment I received in my professional life is a group compliment paid to our OVC graduating class of 2008 by one of our professors, whom I quote from memory. "You take your work seriously, but you don't take yourselves too seriously." This sums up what I love about my profession and my colleagues.

One of the reasons for my career change in my mid-thirties was the desire to leave the petty intrigues of academia for what I perceived to be the collegiality if not outright camaraderie of veterinary medicine. For the most part, I found exactly what I expected: a community of professionals whose highest goal is serving others in what are often life-and-death situations. Veterinary clinical work attracts people who are at least capable of putting the ego aside, if not used to doing so.

Nonetheless, people are people everywhere, and the pressures of veterinary work, combined with human flaws, can and do result in ugly behaviour. Until recently I did not realize how prevalent harassment and bullying were, possibly because I've spent the last 10 years working as a locum and not a permanent associate. In speaking to the Chapter office, I learned that they occasionally get phone calls from veterinarians who are frustrated, angry, and emotional because a member of their staff has become a bully. These calls, I am told, do not centre on the veterinarian being concerned for themselves but more so on the fear and harm the office bully causes other workers, some of whom quit or go on stress leave or who simply suffer horrendously. One veterinarian called because their entire staff issued an ultimatum: either the bully be fired, or the entire staff would quit. In another situation, a bully had caused so much turmoil that even the veterinarian was afraid to confront them.

According to WorkSafeBC, bullying and harassment include "any inappropriate conduct or comment by a person towards a worker that the person knew or reasonably ought to have known would cause that worker to be humiliated or intimidated." Bullying is often more subtle and sneaky than outright harassment, which is why a "reasonable person" is invoked as a judge. In reality such a person is a member of the workplace (unless external resources are called in as a last resort), with their own likes and dislikes, their friends as well as people they don't much care for. A reasonable person is not an entirely logical, unfeeling Dr. Spock, but rather is someone capable of putting aside their emotions and preferences when necessary and capable of empathy to the extent that they can imagine how a bullied person would feel. It is the hope and assumption that everyone in the workplace, including a bully and a person whose first reaction is to feel bullied, is capable of being a reasonable person.

It's necessary to qualify what bullying and harassment are not. WorkSafeBC's Occupational Health and Safety policies specify that the term "bullying and harassment" "excludes any reasonable action taken by an employer or supervisor relating to the management and direction of workers or the place of employment." WorkSafeBC's document on how to recognize bullying and harassment explains, "When it's provided in a respectful manner, appropriate feedback to help staff improve performance or behaviour is not bullying and harassment. However, managers and supervisors should ensure performance problems are identified and addressed in a constructive, objective way that does not humiliate or intimidate."[1]

BACKGROUND PHOTO BY TIKO ARAMYAN/SHUTTERSTOCK.COM

It needn't be a chronic and systemic bullying issue; WorkSafeBC takes even a single harmful act or comment seriously enough to warrant addressing before it causes serious harm or becomes a pattern. Whether a single event or a recurring behaviour, bullying and harassment aim for a response from the target. The bully's goal could be to change the target's behaviour, perhaps even to motivate them in a harsh or passive-aggressive way, or, at worst, to achieve nothing constructive but to simply keep the target humiliated and afraid.

Why does this behaviour occur among well-educated people whose work is to relieve suffering? An outlet for stress would seem like the most obvious explanation, with bullying aimed at a person who is just plain annoying to the bully. A more rational reason could be frustration with a co-worker who is perceived to be wrong about something that affects the outcome of a clinical case or the smooth running of the practice, or is not pulling their weight, or is otherwise letting the bully or the entire team down. Much of our youthful perfectionism falls by the wayside as we progress through veterinary school and the first years of practice, but much still remains and serves to fuel our demands of others as well as of ourselves. A more malignant reason for ugly behaviour would be to create a so-called rite of passage whereby we expect people to "toughen up" in the same way we ourselves were forced to. In essence, this is taking out our own suffering on those below us in the pecking order.

In any case of harassment or bullying, there is an imbalance of power. Rebecca Murray, CVT, MA, LCPC, with the National Association of Veterinary Technicians in America, writes: "When incivility involves an imbalance of power, and is targeted at a specific person, it becomes bullying or harassment. It is much easier to behave badly toward someone who is lower on the ladder of authority, who is unsure of themselves or new, or who is extremely passive."[2] Usually ugly behaviour is indeed directed at someone lower in the workplace hierarchy, but not always. Sometimes the bully is of equal or even lower rank than their target, yet they perceive themselves to have a clear advantage in something else: being more popular, more street-smart, more efficient, etc.

Then there is ugly behaviour, such as outbursts of anger or profanity, directed at no one in particular, or at an inanimate object. Such behaviour can have a devastating and paralyzing effect on those who witness it. It could be said that the team's collective dignity is under attack. If the rational person inside the culprit doesn't step up and offer an apology, such behaviour should be taken as seriously as actual bullying and harassment.

None of these behaviour patterns is unique to the veterinary workplace. I think we can draw relief and optimism from realizing that when it comes to bullying, we as veterinarians are no more than human, and not all that different from other professions. But in the veterinary field, this behaviour can have particularly devastating consequences. An article from 2013 titled "A cross-sectional study of mental health in UK veterinary undergraduates" revealed that more than half of veterinary students had experienced mental health problems (mostly before attending veterinary school), and their well-being was judged to be significantly poorer than that of the general population, although similar to that of qualified veterinarians.[3] While the study was conducted in the UK, I believe our veterinary culture on this side of the pond is similar enough that we should pay attention. It's possible that many veterinarians start off with overall poor psychological health and don't get any healthier throughout their careers.

"WHEN INCIVILITY INVOLVES AN IMBALANCE OF POWER, AND IS TARGETED AT A SPECIFIC PERSON, IT BECOMES BULLYING OR HARASSMENT."

Few studies of harassment and bullying have been conducted specifically in the veterinary workplace; much information is extrapolated from the human medicine workplace, where bullying and harassment are sadly quite prevalent. In 2016, a study was conducted among New Zealand's practising veterinarians by Massey University.[4] Besides confirming the expected detrimental effects of bullying (such as increased stress, negative effects on health and job performance, absenteeism, and intentions and plans to quit), the study brought to light some less obvious findings. Women were found to be bullied significantly more often than men. Four factors were found to buffer the negative effects of bullying on the target: self-efficacy (confidence in one's professional competence), hope of achieving professional growth, optimism, and resilience. Optimists were less likely to blame themselves when bullied. However, the following came as a revelation to me: "Expecting targets to build their personal resources in order to better cope with the bullying is ultimately an ineffective strategy. . . . Over time bullying wears out the target." In a bullying environment, psychologically strong people were still prone to physical problems and intentions to quit. This is immensely important, because it puts a limit to how much personal strength a person should be expected to cultivate to shield themselves from the negative effects of bullying. Many veterinarians have a tendency to take responsibility for faults and failures that are not their own, and this tendency is not only counterproductive but can perpetuate the culture of bullying by letting the culprit off the hook.

Leaders often perceive themselves very differently from how employees see them. A 2014 survey conducted by the Workplace Bullying Institute in the US discovered that 27 per cent of workers (not specifically in the veterinary field) experienced abusive conduct at work, with supervisors serving as the main source of bullying behaviors. Moreover, 72 per cent of employers were found to "deny, discount, encourage, rationalize and/or defend bullying."[5] The Massey University study made extensive use of the terms "destructive leadership" and "team conflict," two phenomena that go hand in hand to create a toxic work environment that perpetuates bullying. Examples of destructive leadership are a leader or supervisor playing favourites, brushing off reports of bullying, ignoring or upholding the bully's actions instead of defending the victim (for example, saying things like "Can't you take a joke?" "Toughen up." "Learn to fight back."). Once a pattern of behaviour is established, no amount of personal strength and resilience will help, and the bullying cannot be stopped without changing the entire workplace environment.

"INTERESTINGLY ENOUGH, BULLYING DID NOT CORRELATE WITH GENERATIONAL, GENDER, OR CULTURAL GAPS; BULLYING APPEARS TO BE AN ALL-INCLUSIVE BEHAVIOUR."

Another study, conducted in the UK in 2017 in response to anecdotal reports of bullying, is summarized in the report *Behaviour in Veterinary Practice*.[6] Data came from a survey that asked participants, both veterinarians and veterinary techs, about repeated incidents of certain behaviours, instigated by the perpetrator, which seemed solely designed to cause physical or emotional hurt. The most frequently reported behaviours overall were: being belittled in front of other staff (73 per cent of respondents); being criticized minutely, in a way that makes you think you can get nothing right (65 per cent); being aware of management or senior staff talking negatively about you behind your back (51 per cent); having your authority undermined to others in the practice, for example by having your instructions countermanded commonly and without consultation (50 per cent). The following prevalent behaviour trends were identified: lack of inclusion in events and decision-making, lack of respect for a person and their knowledge, lack of support (mentorship), unfairness, and favouritism. The experience of unfairness included being the target of unfair accusations without being able to present one's own side of the story.

The survey also invited participants to describe the effects bullying had on them; many of these testimonials are heart-rending. A veterinary surgeon: "Terrible for me and specially for my family. Made me feel small; not able to sleep at night. Made me aggressive towards my husband and small children when I got home from work." A veterinary tech: "Severe depression and anxiety. Suicidal thoughts. Complete loss of confidence even though I have worked for 15 years in this profession. It has thoroughly broken me." A veterinary surgeon: "It destroyed my confidence, and resulted in me taking several weeks sick leave before eventually resigning. I felt like a failure and considered leaving the profession." Another veterinary surgeon: "Misery. It makes the working environment strained, makes people afraid about their clinical decisions and probably affects the level of clinical care as a result. Results in avoidance tactics by staff and a 'head down' approach rather than openness and support." An important finding of this survey was that veterinary techs were not only the most common victims of bullying, but were being bullied mostly by other techs. The most common responses to bullying were: to move practice (195 out of 680 respondents), to take up the issue with management (164 respondents), or to suffer in silence (109 respondents). Notably, only 28 per cent of respondents knew there was a practice policy for dealing with bullying. The study found that the mere fact of a practice having a policy was associated with lower reports of unpleasant behaviour.

Such a policy is thereby not only desirable but, according to WorkSafeBC, a legal requirement for any BC employer. Moreover, one of the responsibilities of workers is to report unsafe behaviour. WorkSafeBC is our go-to resource for dealing with bullying and harassment. WorkSafeBC is neither a mediator nor a resolution service, and does not provide referrals; organizations like the Canadian Centre for Occupational Health and Safety that offer training, or any legal counsel, are to be approached directly. WorkSafeBC does have a prevention information line that workers are encouraged to use in case of need: 1.888.621.7233. Also, WorkSafeBC can, on request, send an officer to conduct a training session at the workplace. Following a practice's policy on reporting bullying is the first line of defence, and a required step. If the employer or other responsible person specified in the policy fails to respond appropriately, the employee's last resort is to fill out a detailed questionnaire that is submitted to WorkSafeBC.

What is found when a complaint of bullying is made to WorkSafe BC? Numbers shared by Kira Berntson, manager of prevention field services, apply to the BC workplace as a whole and not specifically to the veterinary industry. In an estimated 40 per cent of reported cases, bullying was indeed established. In another estimated 40 per cent, the bullying was found to have been reciprocal. In some cases, the person reporting was in fact the bully, either without realizing it, or when the action of reporting constituted bullying. Sometimes, there was no bullying at all, but a huge misunderstanding. People can be sensitized by previous emotional trauma and can react in a way that the above-defined reasonable person would not. A difference of communication styles can lead to misinterpreting the intent behind a person's words. Interestingly enough, bullying did not correlate with generational, gender, or cultural gaps; bullying appears to be an all-inclusive behaviour. An encouraging fact is that wrongdoers (as determined by an investigation) sent for workplace training are often (80 per cent of the time, according to one training company) not aware that their actions had constituted bullying, and are willing to change.

The culture of pressure, if not of bullying and harassment, begins in many places. In some cases, it begins in veterinary school. There are cliques. There is gossip. Unwittingly, professors can hold up examples of students' confident behaviour as the only way to success after graduation, leaving the quieter and more skeptical ones among us to wonder if we'll ever make it. There are instances of unhealthy rivalry among students that can go unchecked by peers and supervisors.

Obviously, bullying in the workplace does not just happen to or by or between veterinarians. It can also occur at any level of staff interaction. The bullying can be rooted in perceptions of being better than others and can be directed against one person or everyone. Ignoring or dismissing bullying implicitly encourages bullying.

In my veterinary training 12 years ago, we spent hours and hours learning to be sensitive to clients. Why not to each other? There is an increasing emphasis on self-care in the veterinary profession, and that is a positive development, yet no person is an island. There must be matching emphasis on developing interpersonal skills, communication skills, conflict resolution skills, and a return to the basics of respect for everybody's contribution to the workplace. Just as we take time to learn to be sensitive to clients, we must also take the time to learn how to respectfully and clearly interact with each other in the veterinary workplace. WCV

WHAT ARE EXAMPLES OF BULLYING?

(From the Canadian Centre for Occupational Health and Safety.)[7]

While bullying is a form of aggression, the actions can be both obvious and subtle. It is important to note that the following is not a checklist, nor does it mention all forms of bullying. This list is included as a way of showing some of the ways bullying may happen in a workplace. Also remember that bullying is usually considered to be a pattern of behaviour where one or more incidents will help show that bullying is taking place.

Examples include:

- Spreading malicious rumours, gossip, or innuendo.
- Excluding or isolating someone socially.
- Intimidating a person.
- Undermining or deliberately impeding a person's work.
- Physically abusing or threatening abuse.
- Removing areas of responsibilities without cause.
- Constantly changing work guidelines.
- Establishing impossible deadlines that will set up the individual to fail.
- Withholding necessary information or purposefully giving the wrong information.
- Making jokes that are "obviously offensive" by spoken word or e-mail.
- Intruding on a person's privacy by pestering, spying or stalking.
- Assigning unreasonable duties or workload which are unfavourable to one person (in a way that creates unnecessary pressure).
- Underwork—creating a feeling of uselessness.
- Yelling or using profanity.
- Criticising a person persistently or constantly.
- Belittling a person's opinions.
- Unwarranted (or undeserved) punishment.
- Blocking applications for training, leave or promotion.
- Tampering with a person's personal belongings or work equipment.

If you are not sure an action or statement could be considered bullying, you can use the "reasonable person" test. Would most people consider the action unacceptable?

HOW CAN BULLYING AFFECT THE WORKPLACE?

(From the Canadian Centre for Occupational Health and Safety.)[8]

Bullying affects the overall "health" of an organization. An "unhealthy" workplace can have many effects. In general these include:

- Increased absenteeism.
- Increased turnover.
- Increased stress.
- Increased costs for employee assistance programs (EAPs), recruitment, etc.
- Increased risk for accidents/incidents.
- Decreased productivity and motivation.
- Decreased morale.
- Reduced corporate image and customer confidence.
- Poor customer service.

[1] WorkSafeBC, "How to Recognize Workplace Bullying and Harassment," accessed April 23, 2020, https://www.worksafebc.com/en/resources/health-safety/information-sheets/how-to-recognize?lang=en. Part of WorkSafeBC's bullying and harassment resource toolkit at https://www.worksafebc.com/en/health-safety/hazards-exposures/bullying-harassment.
[2] https://www.navta.net/page/Harassment
[3] https://veterinaryrecord.bmj.com/content/173/11/266
[4] https://mro.massey.ac.nz/bitstream/handle/10179/11190/02_whole.pdf?sequence=2&isAllowed=y
[5] https://workplacebullying.org/multi/pdf/2014-Survey-Flyer-A.pdf
[6] http://www.bvu.org.uk/docs/behaviourreport.pdf
[7] "OSH Answers Fact Sheets: Bullying in the Workplace," Canadian Centre for Occupational Health and Safety, accessed April 28, 2020, https://www.ccohs.ca/oshanswers/psychosocial/bullying.html.
[8] "OSH Answers Fact Sheets: Bullying in the Workplace," Canadian Centre for Occupational Health and Safety, accessed April 28, 2020, https://www.ccohs.ca/oshanswers/psychosocial/bullying.html.

This issue's specialist column on dental care of young patients is broken into two parts. This instalment discusses the transition from deciduous to permanent dentition, and the second, which will appear in the fall 2020 issue, focuses on malocclusions and developmental oral abnormalities.

ORAL EXAMINATION OF THE PEDIATRIC AND JUVENILE PATIENT

BY ANGELICA BEBEL, DVM, Dipl. AVDC

It is often assumed that dental problems are limited to older or senior patients but, while the incidence of periodontal disease and other oral problems increases with age, young animals can also suffer from a number of dental disorders.

BACKGROUND PHOTO COURTESY ANGELICA BEBEL, DVM, Dipl. AVDC

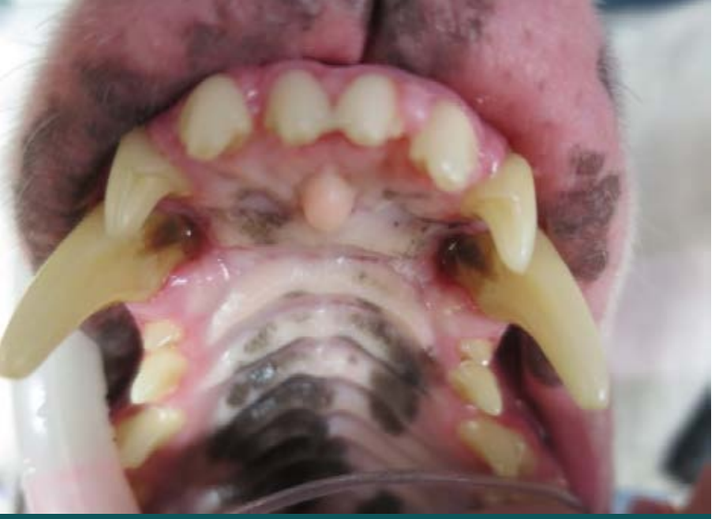


FIGURE 1: This 12-year-old patient presented with bilateral palatal trauma from linguoverted left and right mandibular canines (304, 404). Note that there is also significant attrition with dentin exposure along the palatal surfaces of the left and right maxillary canines (104, 204). Early recognition and treatment of this malocclusion could have prevented the soft tissue and dental trauma and the pain associated with the trauma.

FIGURE 2: The (A) left maxillary and (B) left mandibular deciduous teeth in a 10-week-old patient. Note that there are no deciduous precursors for the mandibular and maxillary first premolar or molar teeth. (A) The deciduous left maxillary third premolar, 607 (black star) resembles the permanent left maxillary fourth premolar (208) that will erupt distal to it. (B) The deciduous left mandibular fourth premolar, 708 (yellow star) resembles the permanent left mandibular first molar (309) that will erupt distal to it.

From the very first visit, a thorough oral examination is a vital part of the physical examination every time a puppy or kitten comes in. Early recognition and treatment of these problems can prevent more serious complications later in life, and waiting until a young patient presents for a spay or neuter surgery often leaves it too late. Furthermore, many dental conditions are painful and require immediate treatment to alleviate suffering (Figure 1). This article will review some of the more common dental problems that can occur in the first year of life.

NORMAL DECIDUOUS AND PERMANENT DENTITION

By eight weeks of age, the deciduous dentition of a dog or cat should be fully erupted. These deciduous teeth are smaller, finer, and sharper than their permanent successors. The canine pediatric patient should have three deciduous incisors, one deciduous canine tooth, and three deciduous premolar teeth in each quadrant (for a total of 28 deciduous teeth) (Figure 2).

Feline pediatric patients should have three deciduous incisors, one deciduous canine tooth, and three deciduous premolar teeth in the maxillary quadrants. The mandibular quadrants should also have three deciduous incisors, one deciduous canine, but only two premolar teeth, for a total of 26 teeth in the feline pediatric patient.

In canine patients, there are no deciduous precursors for the mandibular and maxillary first premolar or molar teeth (Figures 2a and b). Feline patients do not have a deciduous precursor for the molar teeth. In addition, cats do not have permanent maxillary first premolar teeth and permanent mandibular first and second premolar teeth. Therefore, there are no deciduous counterparts for these teeth. In both cats and dogs, the deciduous premolar teeth appear as smaller versions of the permanent teeth that erupt behind them (Figure 2, Figure 3).

By 12 weeks of age, a mixed dentition is often present, where both permanent and deciduous teeth have erupted. If a deciduous tooth is congenitally absent, then the successional permanent tooth will also be absent. This should be confirmed with intraoral radiographs.

Eruption of the permanent dentition of both dogs and cats follows a specific pattern. However, eruption times in dogs can be quite varied depending on the size of the breed and characteristics within that breed. In dogs, the permanent incisor teeth erupt before the canine teeth. The permanent maxillary and mandibular incisor teeth erupt palatally and lingually to the deciduous predecessors. The permanent maxillary canine teeth erupt mesially to the deciduous canine teeth, and the permanent mandibular canine teeth erupt lingually (Figure 3). While all of the mandibular permanent premolar teeth erupt lingually to the deciduous predecessors, the permanent maxillary second and third premolar teeth erupt palatally, and the permanent maxillary fourth premolar erupts mesiobuccally (Figure 3).

The eruption pattern of the rostral teeth (incisors and canines) in cats follows a similar pattern, with the permanent molar teeth usually erupting before the premolar teeth. In both dogs and cats, eruption of the permanent dentition is usually completed at six to seven months.

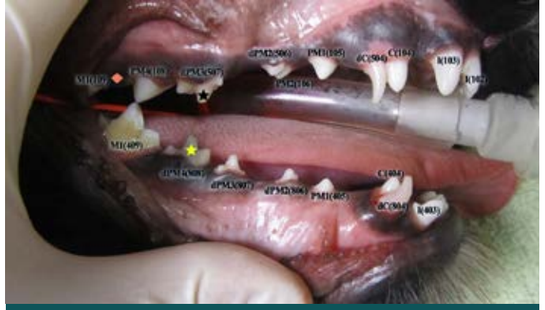


FIGURE 3: The right mandible and maxilla with deciduous and permanent teeth (mixed dentition) present. Permanent maxillary canine teeth [C(104)] erupt mesially to the deciduous canine teeth [dC(504)] while permanent mandibular canine teeth [C(404)] erupt lingually to the deciduous canine teeth [dC(804)]. The permanent right maxillary second premolar [PM2(106)] is erupting palatally to the deciduous right maxillary second premolar [dPM2(506)]. Note that the deciduous right maxillary third premolar [dPM3(507)] (black star) resembles the permanent right maxillary fourth premolar [PM4(108)] that is starting to erupt distal to it. The deciduous right mandibular fourth premolar [dPM4(808)] (yellow star) resembles the permanent right mandibular first molar [M1(409)]. The deciduous maxillary fourth premolar [dPM4(508)] has exfoliated in this patient and is absent (orange diamond).

DELAYED ERUPTION OF TEETH

Since the dentition and anatomy of the mouth is constantly changing, a thorough oral examination during every puppy and kitten visit is necessary to make sure the oral and dental development is following a normal path. By eight weeks of age, all deciduous teeth should be erupted and in their correct position. By six to seven months of age, all permanent teeth should be erupted. In some cases, deciduous and permanent teeth may fail to erupt. If a tooth is absent during an oral examination, dental radiographs should be obtained to confirm its absence. If there is an impacted tooth that is lying in an abnormal position or that has a physical impedance to its eruption, the tooth should be extracted. The early detection of impacted or embedded teeth is important to prevent a dentigerous cyst from forming (Figure 4).

"SINCE THE DENTITION AND ANATOMY OF THE MOUTH IS CONSTANTLY CHANGING, A THOROUGH ORAL EXAMINATION DURING EVERY PUPPY AND KITTEN VISIT IS NECESSARY TO MAKE SURE THE ORAL AND DENTAL DEVELOPMENT IS FOLLOWING A NORMAL PATH."

PERSISTENT DECIDUOUS TEETH

A deciduous tooth still present in the mouth at the time of eruption of the succeeding permanent tooth is defined as "persistent" and is likely to interfere with the normal eruption pathway of the permanent tooth. As a general rule, there should never be two of the same tooth type occupying the same spot at the same time. If the permanent tooth crown is visible above the gingival margin, then the deciduous tooth should be gone.

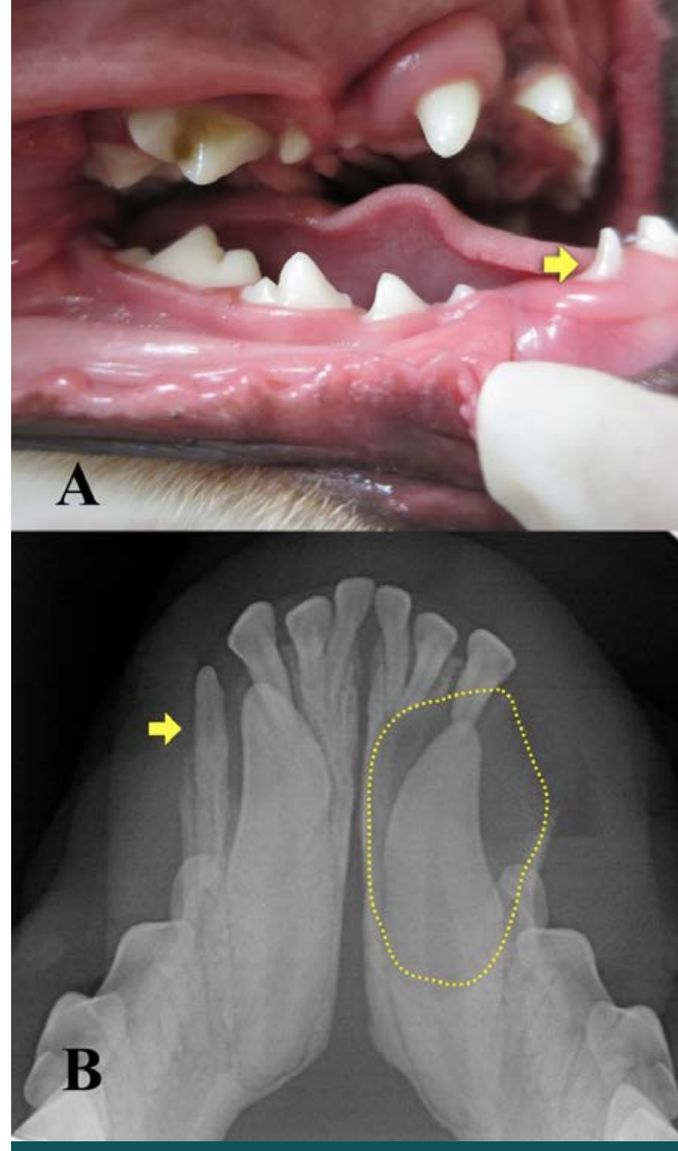


FIGURE 4: (A) Photograph of a one-year-old patient that presented for evaluation of a persistent deciduous right mandibular canine (804)(yellow arrow) and missing permanent left and right mandibular canines (304, 404). (B) Radiograph of the same patient. Both 304 and 404 are unerupted with formation of a dentigerous cyst around 304 (dotted yellow outline). The left mandibular second and third incisors (302, 303) are displaced due to the expanding cyst.

ALL PHOTOS COURTESY ANGELICA BEBEL, DVM, Dipl. AVDC

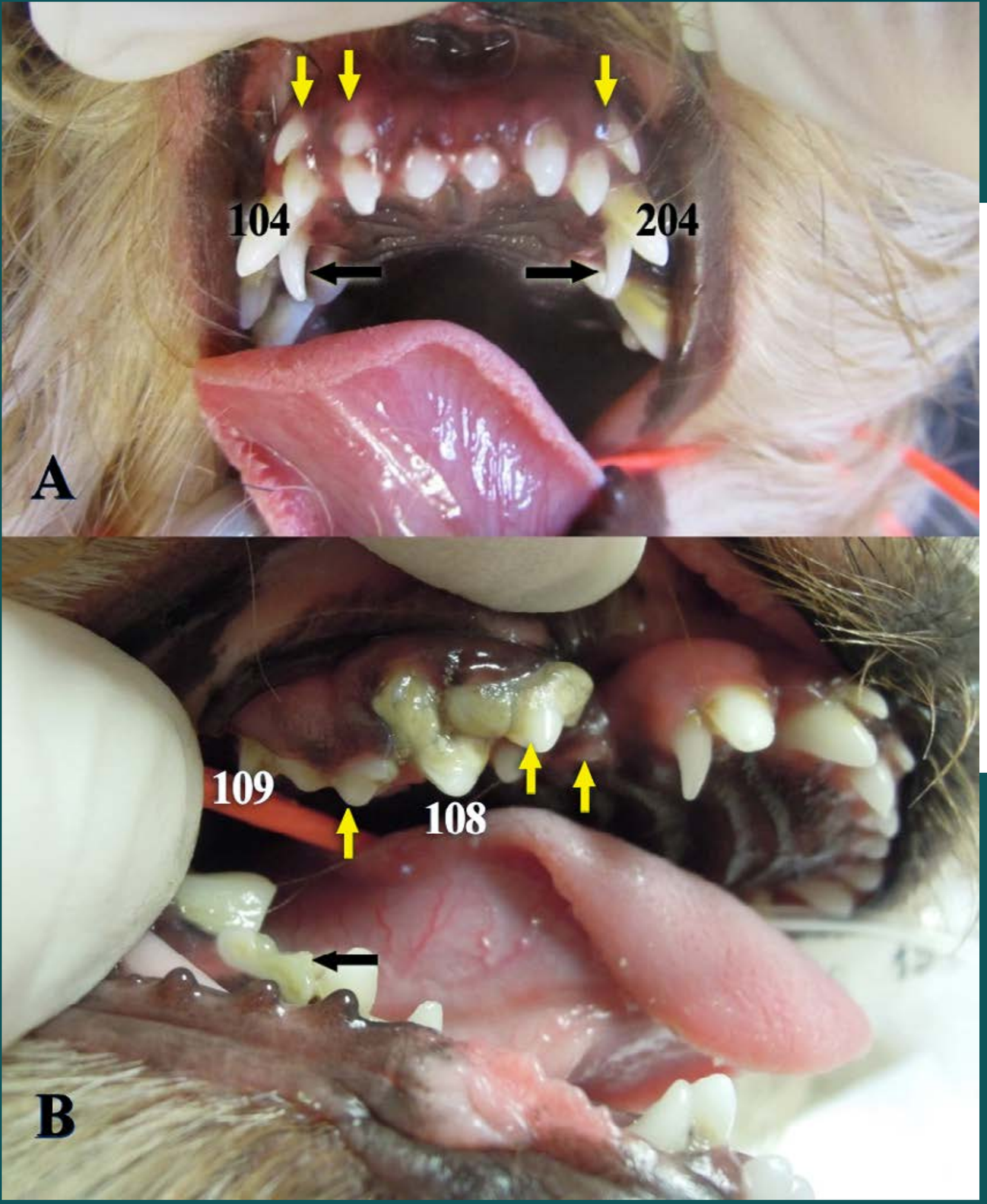


FIGURE 5 (FACING PAGE): An 18-month-old patient with numerous persistent deciduous teeth. (A) Persistent right and left maxillary incisor (yellow arrows) and canine (black arrows) teeth. The permanent right and left maxillary canines (104, 204) are displaced labially. (B) Persistent deciduous right maxillary second, third, and fourth premolars (yellow arrows) and right mandibular third premolar (black arrow). Note the marked accumulation of plaque and tartar along the right maxillary arcade due to the persistent deciduous teeth resulting in crowding. This predisposes the permanent teeth to premature periodontitis.

FIGURE 6 (BELOW): (A) A fractured deciduous right mandibular canine (804) with a necrotic pulp (black arrow). There is marked gingival inflammation and a focal draining tract with purulent material (yellow arrow) along the buccal attached mucosa. Note that the permanent left mandibular canine is not present. The length of time 804 has been fractured with pulp chamber exposure was unknown.

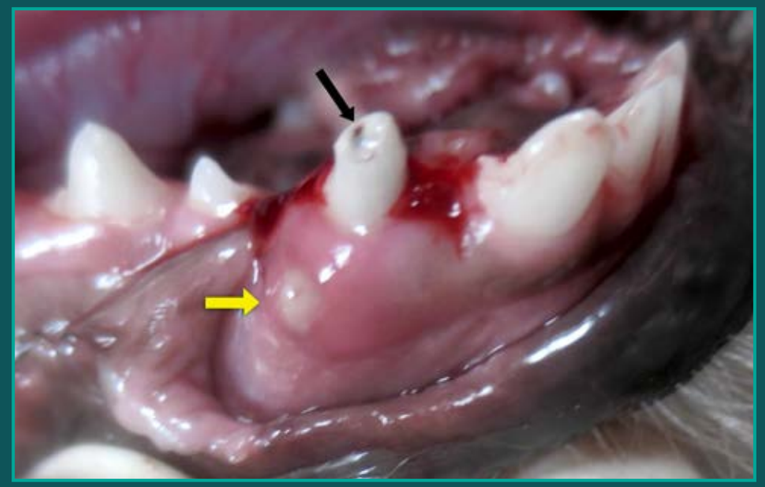
Persistent deciduous teeth are more common in small-breed dogs but are also seen in cats and larger dogs. This is most commonly seen with canine teeth, but can be seen with other teeth including incisors and premolars (Figure 5).

If a deciduous tooth is still in place, it should be removed as soon as possible. Persistent deciduous teeth can force the permanent tooth to erupt in an abnormal location, causing a malocclusion. In addition, they can lead to crowding and encourage the rapid accumulation of plaque and debris, predisposing the area to periodontal disease (Figure 5). Leaving a persistent deciduous tooth in place until the time of spay or neuter surgery is inappropriate. In some cases it may be possible to combine the procedures by moving the spay or neuter to an earlier date, but if this is not possible, then the persistent deciduous teeth should be extracted as soon as they are recognized. In patients that have had deciduous teeth extracted, the adult teeth may still continue to erupt in an abnormal position. Therefore, these patients should have follow-up examinations to monitor the eruption of the permanent dentition in case additional treatments are required.

FRACTURED TEETH

Deciduous teeth are generally thinner and more fragile than their permanent counterparts. In addition, deciduous canine teeth are long and narrow. As a result, these factors make deciduous teeth, particularly canine teeth, more susceptible to fractures that expose the pulp chamber to the oral bacteria. This results in inflammation, infection, and ultimately death of the pulp tissue. Any fractured deciduous teeth should be extracted immediately rather than postponing the extraction until the time of a spay or neuter surgery. Delaying removal of these injured teeth will result in unnecessary pain as the infection in the tooth reaches the tooth apex and extends into the surrounding bone. This increases the risk of osteomyelitis, fistula formation, and damage to the developing permanent teeth (Figure 6).

Extreme care should be taken during the extraction of any deciduous tooth to avoid fracturing the root and to avoid trauma to the developing permanent tooth. Instruments should be small and should fit the shape of the deciduous tooth. Radiographs should be obtained before to help determine the position and presence of the permanent tooth bud if the permanent tooth crown has not begun to erupt. This will help guide safe placement of extraction instruments, reducing the risk of trauma. For example, the permanent buds of the maxillary canine teeth are located mesially to the deciduous teeth, and the permanent buds of the mandibular canine are located distolingually to the deciduous teeth (Figure 3). Therefore, it is best to place extraction instruments along the distal surface of the deciduous maxillary canine and along the mesiobuccal surface of the deciduous mandibular canine. Radiographs should be obtained after every extraction to confirm complete removal of the deciduous tooth. No root remnants should be left behind, as this can result in infection, pain, and complications with the developing permanent teeth. WCV



ILIOPSOAS INJURIES *IN DOGS*

BY DAVID LANE, DVM, Dipl. ACVSMR

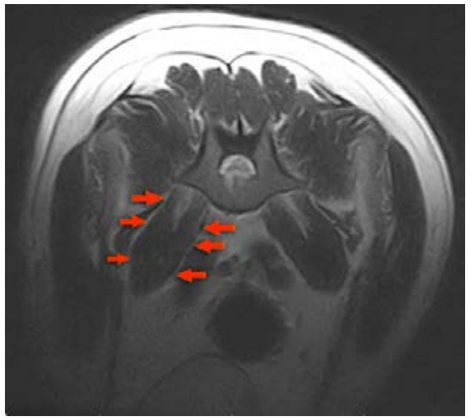


FIGURE 1: Transverse MRI image of the lumbar spine highlighting the right iliopsoas muscle (red arrows).

FIGURE 2: Severe "rooftop" spinal kyphosis that sometimes accompanies moderate to marked iliopsoas pain.

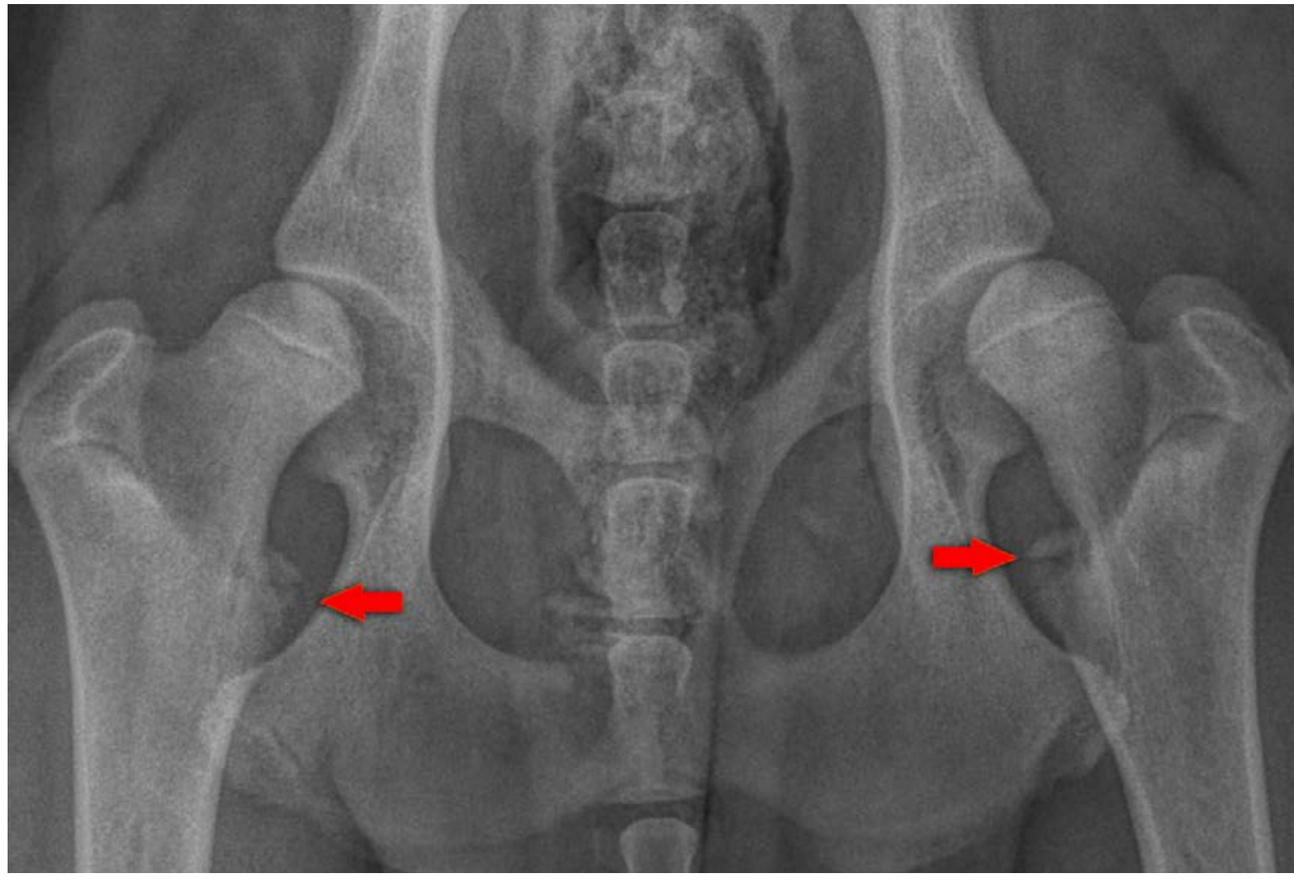


FIGURE 3: VD hip radiograph showing enthesophytic mineralization of the iliopsoas tendon on the lesser trochanter.

PHOTOS COURTESY DAVID LANE, DVM, Dipl. ACVSMR

"MORE TYPICALLY THOUGH, ILIOPSOAS TENDON INJURIES PRESENT AS CHRONIC CONDITIONS: THE RESULT OF REPETITIVE STRESS OR REPEATED INSULT WITH INSUFFICIENT OPPORTUNITY TO HEAL BETWEEN INSULTS."

Iliopsoas muscle or tendon injuries are a common cause of hind end pain and dysfunction in dogs. Presentation of such injuries varies from barely discernible discomfort to debilitating lameness. Although iliopsoas pain can be a primary cause of lameness, more commonly it represents a secondary complication stemming from another hind end lesion. Subjectively, I would argue that iliopsoas pain is the leading reason why dogs that have received successful cruciate surgery do not return to a fully athletic lifestyle.

The psoas major muscle runs bilaterally lengthwise along the ventral face of the lumbar spine in approximately the five and seven o'clock positions (Figure 1). It then merges with the iliacus muscle to form the common iliopsoas tendon that inserts on the lesser trochanter of each femur. The primary function of the muscle is as a hip flexor, but it also acts as a lumbar stabilizer.

Because of the intimate relationship between the psoas major muscle and the lumbar spine, psoas pain results in back pain, and back pain gives rise to psoas pain. This means that both conditions often exist concurrently, and it can be tricky to determine which of the two is the ringleader and which is the henchman. Comorbidities that frequently accompany psoas pain include intervertebral and lumbosacral disc disease, lower back pain (LBP), and hindlimb arthritic conditions such as hip dysplasia or cruciate ligament disease.

Primary iliopsoas-induced hindlimb lameness frequently involves partial disruption of the tendon itself, and/or tearing of the adjacent musculature. It tends to be a condition of athletic dogs, often acutely occurring during high-speed activity on slippery ground: situations in which the hind limb unexpectedly slips backward, suddenly lengthening the iliopsoas at a time when the muscle was actively contracting. More typically though, iliopsoas tendon injuries present as chronic conditions: the result of repetitive stress or repeated insult with insufficient opportunity to heal between insults. Such chronic cases reflect tendinopathy (versus acute injuries that usually reflect tendinitis). Treating tendinitis requires a reduction of the inflammatory process through vasoconstriction, whereas tendinopathy treatment requires the opposite: vasodilation to increase regional blood flow and facilitate healing.

The spectrum of clinical presentations of iliopsoas cases varies widely, in part because there may be multiple morbidities occurring simultaneously. Some iliopsoas cases are subclinical, only revealing themselves during palpation. Others cause minor decreases in athletic performance, such as hesitating before jumping in the car, or failing to turn as sharply at high speed. Many cases present with nonspecific LBP. The owner may report a kyphotic spine (Figure 2), reduced ability to negotiate stairs, difficulty rising from a lying position, or reduced activity. Some dogs abruptly stop in the middle of exercise, refusing to walk further until they have had an opportunity to rest. Others present with a skipping gait, similar to that seen in dogs with luxating patellae. Still others are profoundly lame, either unilaterally or bilaterally.

The cornerstone to diagnosing iliopsoas pain is palpation. The entire muscle should be examined from the cranial lumbar spine as far forward as the dog's anatomy will allow, along the mid-lumbar region, and over the tendon proper as it inserts on the femur. Low- to medium-grade, but clinically significant, discomfort can only be diagnosed by palpation.

To locate the muscle, think of the lumbar spine as a clock face, and gently probe as close to the six o'clock position as possible, rolling the pads of your fingers lightly over the muscle mass felt just lateral to the midline. Follow that muscle as far cranially as possible, and then caudally to the femur. Show your patient the same consideration that you would expect your doctor to show you when performing a deep groin palpation—move slowly and don't suddenly increase pressure. Look for subtle signs of discomfort, such as flinching or head turning, rather than eliciting screams of pain.

Most iliopsoas cases will resist hip extension, but a small subset will only show pain on hip extension combined with internal rotation of the hindlimb. If the patient allows full hip extension, but then reacts when internal rotation is introduced on top of extension, iliopsoas injury near the tendon becomes the primary diagnostic rule-out. (See the video links on page 37 for a demonstration.)

Radiography cannot be used to diagnose iliopsoas injury, but enthesophytic change of the lesser trochanter is suggestive of chronic injury that may or may not be currently active (Figure 3).

Ultrasound or MRI imaging provides the necessary soft tissue detail required for a diagnosis. Ultrasound (Figure 4) is less expensive and requires less anesthetic than MRI, but MRI can rule out the existence of concurrent intervertebral or lumbosacral disc disease. The combination of CT and ultrasound also provides good sensitivity for both conditions.

Treatment options for iliopsoas injuries vary as widely as the initial presenting symptoms, and there is a lack of peer-reviewed research contrasting the effectiveness of these treatment methods. Access to necessary equipment also varies between veterinary hospitals, as does the proximity to a referral practice, which further complicates the decision-making process for general practitioners. What follows is a summary of how I personally approach the diagnosis and treatment of iliopsoas injury. Others may choose a different path, depending on the resources available to them.

INITIAL EXAMINATION

Using palpation, identify as accurately as possible the source and severity of the iliopsoas pain. Is it unilateral or bilateral? How severe is it? Is it located on the tendon itself or further cranially? Is there evidence of any of the comorbidities mentioned earlier in this article, and if so, how painful is the psoas pain relative to the comorbidity pain?

IMAGING

I will proceed immediately to imaging for dogs with severe pain, or if the suspicion is high that we will find macroscopic damage of the muscle or tendon. Typically, radiographic images of the lumbar spine, hip, and stifle joints, and ultrasound imaging of the iliopsoas are sufficient to confirm the diagnosis. If I am concerned about concurrent disc disease, then I may combine the ultrasound with a CT or use an MRI as the sole imaging technique.

TREATMENT

When confronted with significant concurrent LBP and iliopsoas pain, I typically respond by treating the LBP first, using a combination of acupuncture and manual therapy, plus therapeutic laser. If the iliopsoas pain has not completely resolved following two treatments of the above combined modalities, then imaging is recommended. Close to 90 per cent of mild to moderate cases will fully resolve just by treating the LBP.

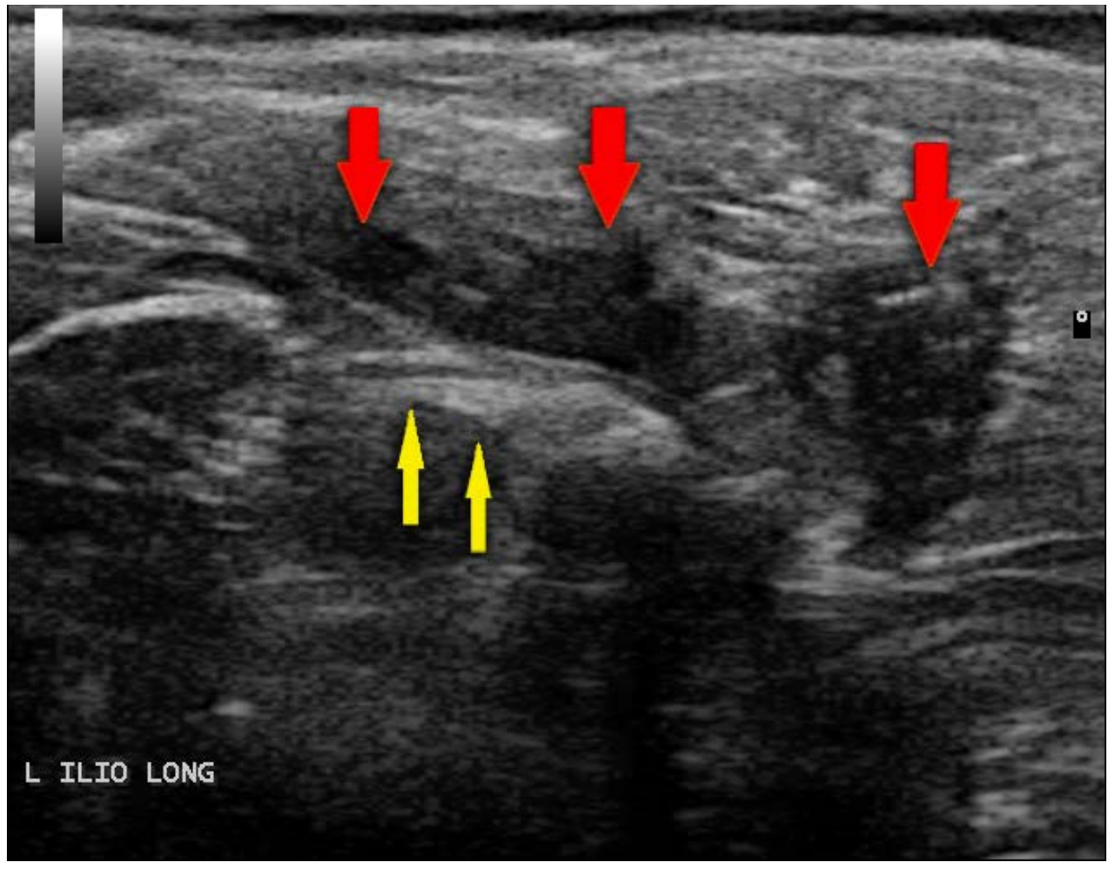


FIGURE 4: Ultrasound image of a normal iliopsoas tendon (yellow arrows), but macroscopic tearing of the surrounding musculature (red arrows).

"TREATMENT OPTIONS FOR ILIOPSOAS INJURIES VARY AS WIDELY AS THE INITIAL PRESENTING SYMPTOMS, AND THERE IS A LACK OF PEER-REVIEWED RESEARCH CONTRASTING THE EFFECTIVENESS OF THESE TREATMENT METHODS."

In general, bilateral mild to moderate iliopsoas pain is secondary to LBP, but moderate to marked unilateral iliopsoas pain more likely reflects a primary injury. Pain localized cranially along the muscle belly, away from the tendon, is more likely to reflect a minor, secondary focus of discomfort. If there is underlying hip dysplasia and/or cruciate disease, then I consider any treatment of the iliopsoas to be temporary and palliative only, until such time as the underlying condition has been properly addressed. Since there is substantial overlap in the treatment options for both iliopsoas and coxofemoral osteoarthritis pain, simultaneous treatment of both conditions is easily accomplished.

Targeted treatment of the iliopsoas itself, for mild to moderately painful cases, or those with no macroscopic changes evident on imaging, typically consists of laser, acupuncture, pharmaceutic pain control, exercise modification, and therapeutic exercise. Therapeutic ultrasound may have utility as well. NSAID use should be of short duration only, as chronic use may delay healing. Muscle relaxants such as methocarbamol 20 mg/kg three times daily may be more helpful for pain control.

When using a laser, it is important to direct the beam from a ventral direction, dorsally, toward the ventral aspect of the lumbar spine. In large dogs, for the photons to be able to reach the iliopsoas with an adequate dosage, the probe needs to be applied against the abdominal wall with enough pressure to compress tissue until the probe is less than 4 cm from the lumbar spine. This is easily accomplished with a class IIIb laser, but for class IV lasers, this may require reducing the power to 500 mW.

For cases refractory to the conservative treatment described above, or for cases in which macroscopic changes are evident on imaging, extracorporeal shockwave therapy (ESWT) and/or regenerative medicine is recommended. ESWT is my treatment of choice for cases with no macroscopic damage, for owners seeking pain relief rather than a return to athleticism, or for owners who have declined regenerative medicine. The procedure is well tolerated by most patients, especially with pre-visit pharmaceuticals in the form of oral anxiolytics. Typically, combined with the other conservative measures listed above, three to five treatments of ESWT are required to resolve the issue.

For the most severe cases, those with intractable pain, macroscopic damage to the tendon or muscle, and/or if the owner is looking for the dog to return to an athletic lifestyle, then regenerative medicine is my treatment of choice. For medium to large dogs, I combine bone marrow aspirate concentrate with platelet-rich plasma, and inject it directly into the tendon under ultrasound guidance. For dogs so small that the collection of an adequate marrow sample is logistically problematic, I combine platelet-rich plasma with cultured stem cells of adipose origin.

Surgical transection of the iliopsoas tendon remains a final option for those cases refractory to the treatments listed above, but owners should be prepared for a reduced level of athleticism in dogs receiving this treatment. Surgery is also indicated in the rare situation of a complete avulsion of the iliopsoas tendon requiring reattachment. To date, I have never seen a case of iliopsoas tendinopathy that required surgical intervention.

The time required to resolve an iliopsoas injury varies widely, depending on the severity and chronicity of the lesion, and on the presence or absence of comorbidities. Mild acute iliopsoas pain secondary to LBP can often be resolved in a day, whereas damaged tendons require four months before the patient can return to normal activity. In general, the prognosis for fully resolving iliopsoas injuries is excellent. Having said that, those patients with chronic underlying conditions such as coxofemoral osteoarthritis, or degenerative lumbosacral disease, may require ongoing maintenance to prevent the recurrence of low-grade iliopsoas pain. WCV

VIDEO LINKS

West Coast Veterinarian is trying out this new interactive function. We were given the opportunity to link to videos produced by this story's author, illustrating the techniques he wrote about. What do you think? Would you like to see more interactive content by reading your print copy and then clicking your online copy (https://www.canadianveterinarians.net/sbcv/west-coast-veterinarian.aspx) for videos? Please let us know by email: wcveditor@gmail.com.

ILIOPSOAS STRETCH

https://youtu.be/89OlWUkzDe0

NORMAL ILIOPSOAS PALPATION

https://youtu.be/3JUVnMwYLnc

NORMAL ILIOPSOAS STRETCH BUT SORE PALPATION

https://youtu.be/ZuJ5JrK_zrY

WHAT THE WORLD NEEDS NOW

"IN REALITY, IN ANY ORGANIZATION CREATING SUSTAINABLE CHANGE REQUIRES A GROUP EFFORT."

In May 2019, the World Health Organization included burnout in its International Classification of Disease but later issued an urgent clarification stating, "Burnout is an occupational phenomenon, not a medical condition." According to Christina Maslach, a social psychologist and foremost expert on burnout, this is an important distinction. If we view burnout as a disease, it causes us to see conditions like burnout and compassion fatigue as a problem with the individual rather than a problem with the workplace. Maslach used the following metaphor to illustrate her point using impactful imagery: picture a flock of happy, healthy canaries singing as they fly into a coal mine. "When they come out full of soot and disease, no longer singing, can you imagine us asking why the canaries made themselves sick? No, because the answer would be obvious: the *coal mine* is making the birds sick."

Burnout and compassion fatigue are common in the helping professions, and veterinary medicine is no exception. I suspect the canary and the coal mine metaphor hits home with many of us. If we truly want to help people in veterinary medicine flourish, we need to transform the coal mine. Imagine what it would feel like to work in a veterinary hospital with a thriving culture—where inspiring leaders empower employees toward a greater purpose; ideas flow freely; collaboration rather than competition is the norm; everyone feels safe, appreciated, and able to bring their true self to work; and egos, blame, and shame are replaced by authenticity, transparency, and trust. It is time for leaders in the veterinary industry to take note and shift the responsibility for managing burnout from the individual to the organization.

As I write, the world around us is changing rapidly. On March 16, 2020, Prime Minister Trudeau's address focused our nation on the grim reality of COVID-19. By the time this article goes to print, phrases like "flattening the curve" and "social distancing" will not only inform our decisions and behaviour, they will be part of our collective vocabulary. To put it simply, our leader was asking us to change our individualist, Western mind-set to a mind-set committed to the greater good. To move beyond our individual needs and our personal discomfort and think about safeguarding our health-care system and protecting the vulnerable individuals in our society.

In light of a growing pandemic, few can argue that we do not live in a global community. Humanity is more interconnected than any other period in our shared history. In their book *Firms of Endearment: How World-Class Companies Profit from Passion and Purpose*, Rajendra Sisodia, David Wolfe, and Jagdish Sheth described Western society as entering an "age of transcendence," a time where people are looking for meaning in their lives. They suggest that this shift in our collective consciousness means that "companies are being held accountable for their humanistic as well as economic performance." I believe this reflects people's desire to align with organizations that reflect their own deeply held values to find congruence and meaning in a world where we feel increasingly disconnected. The desire and, I would argue, need for leaders and organizations who actually want to do the right thing and not just be seen to do the right thing has never been more relevant than in our current era. It is time to move our mind-set from the individualistic view of Western society to a collective mind-set reflective of the global community we now inhabit.

People today want to have a voice in choosing the values that govern their personal and professional lives. They want to experience equality, accountability, and transparency in their workplace and feel proud of the organization they work for. Increasing employee engagement is not only key to increased employee well-being and improved workplace culture; it drives productivity and profitability. Daniel Pink, author of *Drive: The Surprising Truth about What Motivates Us* lists three key factors that influence employee engagement:

1. **Autonomy,** or the freedom to make choices regarding how, when, with whom, and where we work. Companies that give their employees high levels of autonomy report faster growth and lower staff turnover.
2. **Mastery,** or the ability to improve at something that matters to the employee. The desire for intellectual challenge and the ability to master something new and engaging is a driving force behind productivity.
3. **Purpose,** or a cause that is larger than the employee. Intrinsic motivators, such as helping others, learning, or improving, are associated with greater levels of satisfaction and subjective well-being than extrinsic motivators, such as achieving fame or financial success.

If we want to create a flourishing veterinary community, I believe we need to change our "coal mines." Cultural transformation is a complicated process, in part because culture itself is an intangible concept. Much like an individual's personality, the culture of an organization is the unconscious set of assumptions, attitudes, and principles that manifest in the decisions, actions, and behaviours of the people that work there. Cultural transformation is a slow process that requires commitment and patience to succeed.

AWARENESS

The first step in transforming culture is understanding what needs changing in your practice. Recognizing a problem in your hospital's culture can be difficult. Often unhealthy attitudes and behaviours are so deeply entrenched in a team's way of doing things that the team is unaware that a problem exists. However, if a team has established a high level of trust and psychological safety, leaders can initiate open dialogue to better understand the positive and negative aspects of their practice culture. Open-ended questions, survey tools, and team brainstorming sessions can be methods to facilitate conversations on culture (see the sidebar "It Takes a Team"). Sometimes enlisting outside consultants with an unbiased perspective may be helpful to guide cultural change initiatives. Understanding what is working for your team and what is holding them back provides practice leaders with a road map to guide the process.

PLANNING AND PURPOSE

In leadership culture there is an outdated myth involving a charismatic leader who will save the day by the sheer force of their personality and will. In reality, in any organization creating sustainable change requires a group effort. Every team member needs to understand the need for change and see the benefits inherent in that change. Creating a shared vision or mission that brings a sense of excitement and purpose to your team is critical to success. Consider the hopes, desires, and frustrations your team shared with you previously and enlist their help to co-create a vision based on the strengths identified in your existing practice culture. Dig into your values and those of your team. Does your vision align with these values?

WALKING THE TALK

Team members look to their leaders for both inspiration and direction. There must be alignment between the practice's values and the words, actions, and behaviours of the practice leader. Inauthentic leadership will destroy any change initiative before it begins. Veterinary practices, like any organization, need leaders with high levels of self-awareness and emotional intelligence. Leaders who are willing to do the difficult work of self-reflection, challenge their assumptions, and change behaviours that negatively impact their practice and team. Investing in leadership development training is essential to create cultural change in our industry (see the sidebar "Leadership Development Resources").

IMPLEMENTATION

Your hospital's new mission and values need to be internalized with your team. The process of embedding the new values and behaviours into daily decision making and practice life is perhaps the most challenging part of the process. Look for opportunities to reinforce values in action. Recognize the cultural ambassadors on your team and reward the behaviours that embody the culture you desire. Believe in the power of people to do the right thing and take time to celebrate your team's success together. Be sure to take time to revisit your hospital's policies, procedures, and incentives and make sure they reflect the new organization values. Finally, recognize that change is often met with resistance. Focus on the benefits a thriving culture will offer the entire team and be clear, consistent, and fair during the change process. Help your employees see how they fit, offer them support, and be patient.

EVALUATION

Culture is constantly evolving. Rather than a final destination, it is a process that needs continual evaluation and nurturing to stay relevant. Internal forces (changes in the team) as well as external forces (new technology and evolving standards of care) will affect hospital culture. Leaders need to look for ways to measure the effects of change initiatives and evaluate whether it is having the desired effect. A variety of parameters can be employed in the evaluation process. As improvement in culture will improve customer satisfaction, evaluate feedback from clients. Both formal tools like employee surveys and feedback forms and informal observation of team interactions and behaviours can provide insight into the effectiveness of change initiatives. In our industry, an empowering and caring workplace culture attracts attention. The ease with which you attract new employees is another metric to gauge the health of your practice culture.

Changing the culture of a profession is an overwhelming task. In the wake of a global pandemic, most of us long for a return to the status quo, the comfort of certainty over the uncertainty that COVID-19 has thrust upon all of us. While this mind-set is understandable, I challenge you to ask yourself how well the status quo served your team. Is the vision of a flourishing veterinary culture something you have achieved or something you still aspire to? Avoiding problems in the culture of our veterinary practices does not make them go away. Your practice and your people deserve better. Through shared purpose, alignment, and commitment, you can create a healthier coal mine where all of the canaries that enter come out singing. WCV

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BY ELAINE KLEMMENSEN, DVM

IT TAKES A TEAM

TRUST IS THE GLUE THAT HOLDS TEAMS TOGETHER AND ALLOWS PASSION TO FLOW

Enlist your team to identify the positive and negative aspects of your practice's culture. Suspend judgement, get curious, and be prepared to hear things that make you uncomfortable. If you don't want to change, don't bother asking. Listen so you can make a plan to guide your cultural transformation.

MAKE IT FUN

Creating a culture together is about building relationships. Find creative ways to celebrate your team and recognize what makes your practice special.

SEEK OUTSIDE ASSISTANCE

Remember that the culture of your practice did not develop overnight. Cultural change is a slow and complex process. Be patient, consistent, and committed to authenticity, building trust, and modelling the values of your organization. It is difficult work. Consider working with a leadership coach or consultant to facilitate the process.

LEADERSHIP DEVELOPMENT RESOURCES

CANADIAN VETERINARY MEDICAL ASSOCIATION

Emerging Leaders Program: www.canadianveterinarians.net

VETERINARY LEADERSHIP INSTITUTE

www.veterinaryleadershipinstitute.org

AMERICAN ANIMAL HOSPITAL ASSOCIATION

Connexity Conference: www.aaha.org/education/in-person-training/connexity-2020
AAHA Culture Initiative: www.aaha.org/practice-resources/healthy-workplace-culture

AMERICAN VETERINARY MEDICAL ASSOCIATION

Veterinary Leadership Conference: www.avma.org/events/veterinary-leadership-conference
Leadership Toolkit for Veterinarians: www.avma.org/career/articles/leadership-toolkit-veterinarians

WOMEN'S VETERINARY LEADERSHIP DEVELOPMENT INITIATIVE

www.wvldi.org

TICK-BORNE DISEASES IN BRITISH COLUMBIA

BY ERIN FRASER, BSc, MSc, DVM, AND BRIAN RADKE, PhD, DVM

The rate and distribution of tick-borne diseases in British Columbia varies from other parts of Canada due to climatic, landscape, and tick- and pathogen-related factors, and this article discusses current evidence (although there are numerous information gaps) on the epidemiology of tick-borne diseases, tick identification, and pathogen testing approaches, as well as the research efforts aimed at improving the evidence on current and future risks of tick-borne diseases in the province.

HOW ARE TICKS IDENTIFIED AND TESTED IN BC?

In BC, ticks collected from animals can be sent to the BC Centre for Disease Control Public Health Laboratory for identification and pathogen testing (only for black-legged ticks—*Ixodes* sp.). This is currently performed on a fee-for-service basis for regular submissions from veterinarians and animal owners. This method of data collection is considered a passive surveillance system in that we only capture data about ticks and pathogens from voluntary submissions. There have also been several active surveillance projects in BC that have proactively collected tick samples from animals or from the environment.[1] Several initiatives that will provide us with additional information on tick presence and distribution and tick-borne pathogens are currently underway in BC:

- The BC Centre for Disease Control (BCCDC) is leading a One Health initiative throughout Alberta, BC, and Saskatchewan to improve our evidence base on tick-borne disease risks in relation to various climate change scenarios. This project, which is funded by the Public Health Agency of Canada, began in January 2020, and opportunities for BC veterinarians to participate in this project will be announced in the coming months.
- The Canadian Lyme Disease Research Network is conducting a four-year sentinel surveillance project across Canada that includes several sites in BC. Project results from the first year collecting ticks from the environment will be published in mid-2020.
- The Ontario Veterinary College has finished their one-year Canadian Pet Tick Survey with veterinary clinics across Canada. Data from this project are being analyzed over the summer and will be shared with the Canadian veterinary community when the results are finalized. See www.petsandticks.com/canadian-pet-tick-survey.
- Merck Animal Health has been working with the BCCDC on a tick surveillance project in companion animals with 10 veterinary practices in the Lower Mainland, Vancouver Island, and the Okanagan Valley. Results from this project are expected in 2021.

WHAT TICKS HAVE BEEN IDENTIFIED IN BC?

Three tick species represent over 90 per cent of tick submissions to the BCCDC Public Health Laboratory: *Dermacentor andersoni* (Rocky Mountain wood tick), 28 per cent; *Ixodes pacificus* (western black-legged tick), 58 per cent; and *Ixodes angustus* (no common name), 6 per cent. While over 30 tick species have been identified at the BCCDC Public Health Laboratory, many tick submissions do not include the travel history of the animal or person exposed to the tick. Travel information is essential to ascertain whether the tick was acquired from outside the province or within BC. *I. pacificus* and *I. angustus* are primarily found in wet temperate regions of BC (that is, the Lower Mainland and Vancouver Island), and *D. andersoni* ticks are primarily found in hotter and drier regions of the province.

WHAT TICK-BORNE DISEASES HAVE BEEN DETECTED IN BC?

While Lyme disease, caused by *Borrelia burgdorferi*, has received significant attention in the media and among various health professions, the rates of human illness in British Columbia have remained very low (<0.5 cases per 100,000 population) and very stable over the last 15 years. Less than 1 per cent of ticks tested in BC have been positive for the Lyme disease pathogen. The epidemiology of Lyme disease in BC, where *I. pacificus* is the primary vector of Lyme disease, differs significantly from eastern Canada where *I. scapularis* is the primary vector that transmits *B. burgdorferi*. This is, in part, due to characteristics of *I. pacificus* that make it a less efficient vector of the agent of Lyme disease than *I. scapularis*. Ecological modelling of Lyme disease risk areas in BC has been conducted, and a Lyme disease risk map is posted at the BCCDC's Lyme disease webpage. The BCCDC also maintains a communicable disease dashboard and shares human Lyme disease case rates and distribution patterns on a publicly available site. See www.bccdc.ca/health-professionals/data-reports/reportable-diseases-data-dashboard.

In animals, not all tick-borne diseases are reportable or notifiable to BC's Chief Veterinarian;[2] therefore, we do not have a complete picture of the occurrence of tick-borne diseases in animals in the province. However, the new initiatives described above will help us fill important information gaps. There are currently four tick-borne diseases in animals that are reportable or notifiable in BC: tularemia, Lyme disease, anaplasmosis, and Rocky Mountain spotted fever. Other tick-borne zoonotic pathogens of concern in BC include *Babesia* sp., *Ehrlichia* sp., and other *Borrelia* sp. (for example, *B. miyamotoi* and *B. mayonii*). Currently there is minimal evidence on the prevalence and distribution of these pathogens in BC. Table 1 highlights current evidence on tick-borne diseases in animals in BC.

"THE BCCDC ALSO MAINTAINS A COMMUNICABLE DISEASE DASHBOARD AND SHARES HUMAN LYME DISEASE CASE RATES AND DISTRIBUTION PATTERNS ON A PUBLICLY AVAILABLE SITE."

[1] M. Morshed et al., "Surveillance for *Borrelia burgdorferi* in *Ixodes* Ticks and Small Rodents in British Columbia," *Vector-Borne and Zoonotic Diseases* 15, no. 11 (2015): 701–705, https://www.liebertpub.com/doi/full/10.1089/vbz.2015.1854.
[2] www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/animal-health/reportable-notifiable-diseases.
[3] BCCDC Public Health Laboratory parasitology requisition: bit.ly/2z8qhHB

TABLE 1: Presence of tick-borne pathogens and diseases in BC detected through passive and active surveillance, and case reports.*

	Anaplasmosis	Babesiosis	Lyme disease	*Borrelia miyamotoi* and *Borrelia mayonii*	Ehrlichiosis	Rocky Mountain spotted fever
Reportable in humans	✓	X	✓	X	✓	✓
Reportable in animals	✓	X	✓	X	X	✓
Vector in BC	*I. pacificus*	*I. pacificus*	*I. pacificus* *I. angustus*	*I. pacificus* *I. angustus*	*I. pacificus* *I. angustus*	*D. variabilis* *D. andersoni*
Found in passive tick surveillance	X	X	✓	✓	✓	X
Found in active tick surveillance	X	X	✓	X	✓	X
Animal cases detected**	✓	X	✓	X	✓	X
Human cases detected and acquired in BC	X	X	✓	X	X	✓

*Tularemia is excluded from this list, as tick-borne transmission is considered to be a minor route of transmission of this disease.
** Very low levels (0–2 cases per year) of anaplasmosis, Lyme disease, and ehrlichiosis in animals are reported in BC. Travel history is not known for all cases; therefore, a portion of these reported cases may have been acquired outside BC.

HOW TO SUBMIT A TICK FROM AN ANIMAL FOR TESTING IN BC

- View submission guidelines for the BCCDC Public Health Laboratory at: www.elabhandbook.info/PHSA/Default.aspx (enter "tick identification" into the search field in the eLab Handbook).
- Collect the tick in a small vial with a damp cotton pad.
- Download and complete BCCDC PHL's parasitology requisition from the eLab Handbook.[3]
- On the form, indicate the travel history of the animal, specifically if it has travelled outside of BC.
- Send the sample to the BCCDC Public Health Laboratory at 655 West 12th Avenue, Vancouver, BC, V5Z 4R4.
- The lab will send an invoice after they receive the tick submission. The cost for testing of ticks from animals is currently $30 for tick identification, and an additional $35 for Lyme disease pathogen testing of black-legged ticks.
  For further information, contact BCCDC's public health veterinarian at Erin.Fraser@bccdc.ca or 778.677.7790.

RESOURCES

- BCCDC's Lyme disease page: www.bccdc.ca/health-info/diseases-conditions/lyme-disease-borrelia-burgdorferi-infection
- Government of Canada Lyme disease awareness resources: www.canada.ca/en/public-health/services/diseases/lyme-disease/lyme-disease-awareness-resources.html
- Tick Talk: ticktalkcanada.com WCV

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Brian Radke, PhD, DVM, is a public health veterinarian at the BC Ministry of Agriculture's Animal Health Centre in Abbotsford. Following graduation from the WCVM in 1989, Brian spent five years in private veterinary practice in Ontario and the Fraser Valley with a focus on dairy herd health. Following a PhD in agricultural economics from Michigan State University, he was employed by Alberta Agriculture as a dairy cattle research veterinarian and a research economist. Dr. Radke was a public health veterinarian at the BC Centre for Disease Control for five years before joining the Ministry of Agriculture in 2011.

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