President’s Report

2015 is a significant year in our nation’s history, with Easter behind us we then observed the Centenary of Gallipoli and remembered what it means to be Australian in the context of other nations. It is timely to remember what a great and lucky country we live in as we honoured the courage and sacrifices of others that give us the freedoms in which we all share. Honour and integrity are innate qualities worth the time and effort and the veterinary profession is a fantastic place in which we can observe individuals whose lives and beliefs indicate a common ideal. These ideals are what binds us together - they give us the strength and power to bring about change. So if you have a burning issue let your committee know. Maybe we can solve it and maybe we can’t, but we will listen.

2015 has started with a flurry of activity. Those of you who attended the Victorian Division State Conference at Torquay experienced a fabulous weekend. The venue was fantastic with picturesque views to the ocean across the golf course. The speakers and conference content were informative and to have Prof. Mark Rishniw from Cornell University with his Aussie mannerisms mixed with an American accent was great.

Continued on Page 2
Mark is a Melbourne graduate from 1987 but is now an Internal Medicine and Cardiologist at Cornell. Together with Richard Woolley (a local vet specialist but a UK graduate), they both put on a spectacular show of the thoracic cavity of dogs and cats. This was complemented on the Sunday by Drs Marjorie Milne, Jennifer Carter and Elise Boiler from the University of Melbourne with topics that covered echocardiography and anaesthesia of the compromised animal. A highlight of the conference was the concurrent stream run for veterinary nurses which was extremely well attended, as was the support for our sponsors and trade. 27 trade exhibitors were present with a vast array of special information and 110 people attended the conference dinner.

Of course, the Annual Meeting at the conference brought the election of a new committee for the Victorian Division and I was elected President. Many thanks for their tireless and dedicated work goes to Dr Trish Stewart and the continuing members of the committee, including David Middleton, Jacqui Ley, Megan Dietze, Susan Maastricht and Russell Harrison. We are delighted to welcome two new committee members, Moss Siddle and Jo Devlin. However we say farewell to Dr Bill Harkin and Prof Glenn Browning who leave the committee after 9 years of service (the maximum allowed under our Constitution). They have both been fantastic contributors and worked tirelessly to support members. Bill was especially active with the Division as President for two years in 2009 and 2010, and in numerous meetings with government ministers. Bill was honoured with an AVA Meritorious Service Award last year for his achievements. Glenn has been a most distinguished contributor and has also been recognised by AVA National with a Meritorious Service Award and a Fellowship Award for his commitment. Glenn will not be lost to the Division as he has agreed to continue on as our representative on Policy Council.

It is with sadness that I mention the passing of two great stalwarts of the AVA in recent months. Dr Mike Harrison who for many years was our Honorary Editor of VicVet and Chairman of our Awards Committee in addition to years of service on committees and Dr John Bourke who was the inaugural President of the Equine division of the AVA. Both funerals were attended by a massive number of vets who were able to give cognizance to the enormous contribution to the veterinary profession by both these individuals over a life well lived. The respective eulogies were delivered by Dr Tom Hart and Dr John McCaffrey.

The first few weeks of being your representative has seen a flurry of meetings. The first was a meeting with the Chief Veterinary Officer and others in response to the Four Corners episode on live baiting within the greyhound industry where our input was sought. Annual veterinary inspections of greyhound trainer premises that document animal welfare was discussed, in addition to audits by an Integrity Officer. Also discussed was the issue of oversupply, early socialisation of greyhounds and better tracking records within the industry.

A few days later this was followed by a meeting with the Minister for Agriculture’s Advisor at Spring Street to discuss 5 topics of importance to the veterinary profession:

1. The AVA’s involvement in the parliamentary inquiry to examine the effectiveness of the Restricted Breed legislation. We have campaigned against the current legislation since its inception and are pleased that an inquiry will occur this year. The AVA will make a written and verbal submission to the parliamentary committee.

2. The lack of restricted acts of veterinary science legislation within the Veterinary Practice Act - Victoria is the only state within Australia without that protection and with the review of POCTAA this year, we are hopeful restricted acts will be included into that.

3. Code of Practice for Breeding and Rearing Businesses for Domestic Animals. The Minister has proposed changes which sees both mandatory pre and post litter veterinary examinations and the capping of litter numbers at 5. The AVA lobbied for pre and post examinations to be included. The Minister at a later date will also propose that breeders must be limited to having a maximum of 10 breeding bitches. This proposal will firstly go out for regulatory impact and thereafter submissions will be invited.

4. The sale of Animals in Pet Shops. The Minister is supporting that pet shops only be able to sell animals from pet shelters and not from breeders. This proposal will also go out for regulatory impact before submissions are invited.

5. The lack of Tail Docking legislation in cattle in Victoria. We indicated that we would like to see legislation introduced that prohibits tail docking in cattle and the Minister has taken this under advisement.

It is clear that the Minister’s attention is firmly on various aspects of animal welfare.

The new year also sees a new group of students commence their studies at the University of Melbourne. During O Week, Trish Stewart spoke to the group and we signed 100 students as AVA members. I later hosted a First Year Student Welcome reception of which 55 students attended.

It is also pleasing to report that the Victorian Division’s Mentoring Program of the 2014 graduates is now in full swing and has received positive feedback. If you are not a mentor and would like to know what it entails, contact the Division or Trish Stewart - who is the driving force of this initiative.

Don’t forget if you have something to say, drop me a line at paul.martin@ava.com.au

Cheers, Paul
First Year Student Welcome Reception

For the third year running, the AVA hosted a welcome event for the University of Melbourne's first year students. As most of you will remember, the first year of your veterinary degree is quite daunting so we like to hold these events to let the students know that AVA will be there to support them throughout their whole lives - from their study days right through until after retirement.

We were most fortunate to have the Chief Veterinary Officer of Victoria, Professor Charles Milne (pictured below), and other speakers, address the students and tell of their journeys from vet student to where they are now. It was interesting to hear of all the different areas you can work in after your degree. Speakers told of their careers in government, academia, industry and working in clinical practice.

There was a lot of reassurance from all the speakers that although the veterinary degree is a difficult one, they will get through it and once they do, it will be worth it. It was stressed that the students to believe in themselves and look after themselves and their buddies, especially emotionally.
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From the EO’s Desk

Susan Chandler, Executive Officer

I would like to congratulate Dr Paul Martin on his election to President of the AVA Victorian Division. Paul has previously served as Secretary/Treasurer and Policy Councillor for the Division and is very committed to representing AVA members on a state and national level. I also welcome two new members to the Executive Committee – Dr Jo Devlin and Dr Moss Siddle and look forward to their contributions.

A big thank you must go to Dr Trish Stewart, our outgoing President who worked tirelessly in her position for the past two years and before that as Secretary/Treasurer. Trish consistently made herself available for the endless advocacy meetings with government and animal welfare organisations and always represented the AVA with great intellect and eloquence. Trish was passionate in ensuring that the Mentor Program for first year veterinary graduates was established in Victoria and that in fact did happen and has been a great success. Trish now sits on the national committee for the AVA National Mentor Program that will see the program rolled out this year, whilst also remaining on the Victorian Executive Committee.

I would also like to thank Dr Bill Harkin and Professor Glenn Browning, who depart the Executive Committee after nine years, for their enormous contributions to the Division. I’m sure whilst no longer on the committee, I will still call on the knowledge and wisdom of both of them from time to time.

The state conference in March was held in Torquay this year with a total of 74 vets, 16 vet students, 31 vet nurses, 9 speakers and 42 exhibitors representing 27 companies attending. We had 9 students from Charles Sturt University travel down for the conference which was fantastic. Feedback from delegates and sponsors was very positive and we hope that our conference at Moonee Valley Racecourse next year will be strongly supported also.

An industry golf day will be announced shortly that is expected to be held in the latter part of the year at one of Melbourne’s prestigious golf courses – so please keep an ear out for that.

As Paul mentioned in the President’s Report, AVA have been involved in quite a few advocacy issues so far this year:

Greyhound live baiting/animal welfare – we advised members to contact the Office of the Racing Integrity Commissioner (ORIC) if during the course of their daily practice they happen to identify or are called to treat injuries to either Greyhounds or other animals which may have occurred as a result of the practice of live baiting. Members were encouraged to report (anonymously if desired). We also met with the Chief Veterinary Officer to offer input into how better animal welfare for greyhounds can be achieved in the future and recommendations on how the greyhound industry can be improved.

Parliamentary Inquiry into effectiveness of restricted breed legislation - this is expected to begin in the next couple of months with the report expected to be tabled with parliament by 30 September this year. A bill is currently being debated in parliament that would amend the Domestic Animals Act by imposing a moratorium of euthanasing dogs that are assessed as restricted breeds until 30 September 2016. All parties in the Legislative Assembly have advised they will support this amendment. Once the Parliamentary Inquiry begins, AVA will make a written submission and likely a verbal submission to the committee.

Restricted acts of veterinary science included into the POCTAA or Veterinary Practice Act – we are hopeful that with the review of POCTAA this year, that restricted acts of veterinary science will be an addition to the Act. We have stressed over a long period of time to the Minister and the Chief Veterinary Officer that it imperative to good animal welfare that this is included. The revision of POCTAA is expected to be ready for consultation/submissions within the coming months and AVA will provide a submission to that also.

Code of Practice for Breeding and Rearing businesses – the Minister has proposed changes to this Code of Practice to require pre and post litter veterinary examinations of breeding dogs and litters capped at 5. We lobbied for the pre and post veterinary examinations to be included and submitted AVA’s support to this via consultation period. The Minister is also proposing that breeders must be limited to having a maximum of 10 breeding bitches supporting that pet shops be only able to sell animals from shelters, i.e. not from breeders. Both of these proposals will be subject to a regulatory impact report before inviting submissions during a consultation process.
Victorian Emergency Animal Welfare Plan – I attended a workshop with Dr Elaine Ong at the State Control Centre to represent AVA’s input for the review of this Plan. The Plan is a product of the Black Saturday Bushfires Royal Commission where it identified the lack of planning for animal welfare in emergency situations. As you may know, AVA’s responsibility within this plan is to maintain a database of volunteer veterinarians and veterinary nurses that would be prepared to assist in an emergency situation once government resources are exhausted. Many areas of the Plan were identified as needing clarification – one of these was volunteer guidelines and training and advisement of liability coverage of volunteers. This will continue to be worked through over the next couple of months. I would like to thank Elaine Ong for her expertise in assisting with this process.

Audit of Performance of Biosecurity in Victoria – Dr Paul Martin, Dr Trish Stewart, Dr Rob Bonnano, Dr Keith Fletcher and myself met with representatives from the Victorian Attorney General’s Office in January to scope what areas were of concern in regard to biosecurity in Victoria. It was advised by our representatives that there was concerns over how Victoria would respond to a disease outbreak, the huge cuts to government vets – leaving it up to private vets to conduct surveillance on properties they enter, cost to farmers to reduce risk of disease, laboratory costs and staff cuts and that private vets may be conflicted with their own clients. When asked what case studies the audit should consider, the AVA representatives recommended FMD, Pigeon Paramixa, Hendra, Equine Flu, SARS and Lyssavirus. The audit should be complete by July this year.

This year will be a busy year on the advocacy front and I am looking forward to the AVA continuing to be a voice for our members on all levels of government.

Please contact me at the Division with any issues that may arise – we will certainly try to assist you.

Susan Chandler

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I would like to thank the below list of generous sponsors of our state conference this year - in particular our major sponsors, Hill’s Pet Nutrition, Provet and Edenhills Pet Cremation. Without the support of all the sponsors below, we would not be able to hold a state conference each year. I encourage all members, when possible to reciprocate support by considering the products and services our sponsors offer.
State Conference 2015

Newly elected AVA Victorian Division President, Dr Paul Martin

University of Melbourne and Charles Sturt University students

Sponsors and delegates conversing

Trade Exhibition Room

AVA President Dr Julia Nicholls and AVA Victorian Division President Dr Paul Martin at the conference dinner

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BVSc, BDSc, MANZCVS (SA Surgery and Veterinary Dentistry)
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VALE - Dr Michael Allan Harrison OAM

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Michael Allan Harrison matriculated at Melbourne High School in 1959 and enrolled in Veterinary Science at the vestigial Melbourne University Veterinary School. He completed the final four years of the course at Queensland University, choosing that vet school in preference to the Sydney University alternative.

Like many of his Veterinary Science student colleagues, Mike was attracted on graduation to the farming lifestyle and after a short period honing his small animal skills at the Lort Smith Animal Hospital, he entered dairy practice as an assistant to Charlie Thompson at Numurkah. From there he joined Bob Tate at Alexandra and soon after established a solo, mainly beef cattle practice at nearby Mansfield. Mike enjoyed bringing modern veterinary practice to the so far un-serviced farming community of the Mansfield district, and maintained that the best way to deal with unqualified competition was to provide an excellent service at a reasonable, but not cheap, price.

In 1976 Mike sold the Mansfield practice and joined the Victorian Department of Agriculture as a District Veterinary Officer based at Benalla. His expertise in beef cattle medicine was acknowledged by his admission by examination as a Member of the Australian College of Veterinary Scientists in 1977. In 1978 he became a Regional Veterinary Officer, then a Principal Veterinary Officer in 1983.

Mike made an outstanding contribution to the professional support of his colleagues, lay and professional, in achieving the goals set for the animal health service in Victoria, particularly in helping colleagues to deliver services to difficult clients. In 1995 Mike left the public service to take up a position as operations manager for the veterinary pathology company Centaur. In 1997 he established a private consultancy and provided services to Government and corporate clients in the many areas of veterinary science within his wide experience, in Victoria and interstate.

Mike was committed to putting something back into the profession he loved, and became a student member of The Australian Veterinary Association. He continued his involvement until his death, serving the association as an executive of many branch, state and federal committees, including a term as President of the Victorian Division and one as Treasurer of the federal body.

He was a member of the special interest groups of all the areas of veterinary science in which he was involved, and served as Honorary Editor of Vic Vet for the past 7 years. His exceptional contribution to the AVA was recognised by the award of a Fellowship in 1991.

Mike was elected to the last three Veterinary Boards of Victoria, before their replacement by the Government-appointed Veterinary Practitioners Registration Board of Victoria, and was President of the penultimate Veterinary Board of Victoria. The main objective of his Board involvement was to try to get the tiny minority whose misbehavior was damaging the profession to “lift their game”.

In 1998 Mike took up his last position in the profession, as part time Senior Lecturer in Animal Health and Management at Melbourne University Veterinary School, and held it until his retirement in 2007. The position had the attached responsibility of acting as mentor to overseas students. This teaching and mentoring role was an ideal fit for Mike’s character and a great source of satisfaction for him, was the frequent contact his past students made with him to thank him for his help and advice when they were undergraduates.

Mike Harrison made a wonderful contribution to the veterinary profession, which was recognised by the award of an OAM on Australia Day 2012.

He will be sadly missed and fondly remembered by his many friends and colleagues.

Mike is survived by his wife Vicki, sons Grant and Justin, his daughter-in-law Ying and his grandson Elijah (pictured).
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Let sleeping dogs lie
Although the phrase appears in Dickens (David Copperfield, 1850), it likely arose with Chaucer in 1374: “It is nought good a slepyng hound to wake.” While many dogs tolerate and some appear to enjoy some human contact when resting, it should not be surprising that dogs might be irritable or aggressive if disturbed while resting. This is especially true if the owner tries to displace the dog from its favoured piece of furniture, in its crate, cornered, under furniture, or in possession of valued resources. Owners must learn to “read” dog communication including body language, facial expressions, vocalizations, and conflict behaviours such as lip licking and yawning that indicate the dog wants to be left alone. In addition, when a dog turns onto its back to expose the belly this may be an indication that the dog wants to disengage. If the pet is sleeping or approached quickly there may be no opportunity to signal. Young children are more vulnerable and unable or less able to read body language or control their approach. In one study, dog bites of young children were most likely to be from familiar dogs that were indoors and lying or sitting still at the time.1 A dog should be provided with a safe haven where it is neither forced to leave nor forced to interact. Consider crate housing, a closed room or baby gates for the safety of the family and visitors and the welfare of the dog. During approach, use a soft or upbeat verbal cue to get the dog’s attention and encourage a desirable outcome, and let sleeping dogs lie if they want to be left alone.

NOT A MYTH!

Don’t start puppy classes and avoid public places till all vaccines are done.

MYTH! Advising owners to keep their puppies away from other pets and public environments until after all vaccinations are done might be prudent to avoid illness; however, this is a time in the dog’s life where socialization and habituation to new stimuli are essential. In fact, the risk of disease is much lower than the risk of behaviour issues that might arise from a lack of socialization, which in turn may lead to relinquishment.2 For position statement see avsabonline.org. In one recent study, no increased risk of parvovirus has been associated with puppy classes.3 In addition, disease risk can be minimized by insuring all puppies have been in their homes for at least a week, and are healthy, free of parasites, and up-to-date on their vaccine series. Indoor classes with surfaces that can be sanitized further minimize risk of disease. Since the primary sensitive period ends by 12 to 14 weeks in dogs, it is important to begin exposure to a wide range of social and environmental stimuli before the end of this period. Puppy classes help owners to address emerging problems, improve training skills and reduce fear of unfamiliar dogs, unfamiliar people and new environments.4,5 For puppy and kitten class format see Behavior Problems of the Dog and Cat, 3rd ed., Saunders, 2013.

Treats are a bribe. All you need is love.

MYTH! Behaviour is a result of consequences. Receiving rewards immediately following behaviour (positive reinforcement) or the removal of something unpleasant (negative reinforcement) increases behaviour while undesirable consequences including positive punishment (application of something unpleasant) or negative punishment (removal of something desirable) decreases behaviour. Rewards make relationships better; punishment makes relationships worse.

To make the association between reward and behaviour, the reward should be contingent on (linked solely with), and contiguous with (immediately following) the behaviour. Rewards should be given consistently until the pet repeats the behaviour reliably at which point the frequency can be decreased. The higher the reward value the more the pet may strive to repeat the behaviour. While petting or play might be motivating if the pet is ready and willing to engage, a tasty food morsel or a favoured play toy is usually most rewarding. Clicker training, where a favoured treat is paired to follow the click, provides an immediate and accurate way to time rewards. (See clickertraining.com) Reward based learning is no different than when people receive a salary for work, or an allowance for chores, and are given raises or...
Bonuses based on performance. The slot machine is a powerful example of learning; if you are paid off regularly with a low value reward you will likely keep playing but the chance of a high value payout even if rare, brings you back for more.

As for the assertion that a reward is a bribe: A reward following behaviour is positive reinforcement. A bribe is something that is given before behaviour to try and induce behaviour. Some confusion might arise with lure reward training where the treat or toy is initially used to lead the dog (e.g. sit) with the reward given for the successful outcome. However, this is only the first step in a process in which the lure is gradually faded and replaced with a verbal and/or hand cue. Food is also an important resource for counterconditioning in which the presentation of a stimulus is repeatedly paired with a highly valued resource to produce a positive emotional state.

**Dogs should work to please their masters**

**MYTH!** Another component of the food training myth, is that dogs have an innate desire to please their master and that this should be the motivation for learning. While pleasing outcomes (tone of voice, praise, affection) can indeed be a reward for training, these are just an example of operant learning. In fact, when a pet or person does something for another, it is the pleasure they get out of the response that would encourage repetition of the behaviour. What impedes reward based learning is when the reward is given out freely or randomly without consideration of the preceding behaviour. Another serious concern is whether the reward is truly desirable. Training is productive if the dog takes the treat; if the dog is not interested in the treat, forcing it down the throat does not reward – it punishes. Similarly with petting if the dog is not sufficiently motivated or is not interested in petting at the time, it does nothing to encourage behaviour and may actually punish. Furthermore any confrontation or punishment can increase the pet’s fear or conflict about future petting or handling.

**She knows she’s done something wrong. She acts guilty**

**MYTH!** This myth probably results in more owner frustration and animal abuse than any other. It most commonly is associated with the owner returning home to find that something has been damaged or soiled. For some pets all it takes is a few moments out of the owner’s sight. Some call these pets sneaky but it’s a matter of simple learning. When the owner is watching the dog, behaviours can be prevented or immediately deterred if it begins to engage in the undesired behaviour. When the pet is out of sight there are no untoward consequences during the behaviour. Furthermore if the outcome is positive for the pet (chewing, digging, garbage raiding, sleeping on furniture, soiling etc.), it has been rewarded. Thus the pet learns a simple association; cease when the owner is watching and continue when the owner is not watching. This is no different than people who know when to keep their hands out of the cookie jar or when to slow down to the speed limit.

A pet knows when you are angry by your actions, tone of voice, or body language. When the dog responds by crouching, tail tucked, “squinting” eyes, or turning over and exposing the belly, these are appeasement and avoidance responses to the owner’s angry tone of voice, body language, or actions - not guilt. The question arises as to how the pet knows to act this way before the owner even comes across the scene of the crime? It’s not about guilt or knowing right from wrong or even ESP. It’s simple association learning. When the owner walks in and the house is in order, the greeting is positive; when the owner walks in and sees the “evidence” (destruction, spilled garbage, urine or stools), the greeting is unpleasant. What the pet has learned is when it will be punished and when it will not. To demonstrate this to owners I have suggested they leave “evidence” from a previous departure, and walk out the door. When the owner re-entered the home, the dog displayed the same “guilty” signs even though it was “not guilty” of the crime. Another option is to record or monitor the behaviour to see the pet (or maybe even another pet) engage in the behaviour (without guilt) yet the signs of fear and appeasement are displayed as soon as the owner walks in the door or into the room with the “mess”.

**He does it out of spite (aka “getting even” or “mad at me”)**

**MYTH!** Animals do not urinate in undesirable locations or chew furniture out of spite. When left alone or unsupervised their actions arise from their immediate needs and desires without knowledge or concern for future consequences. Recording or viewing the pet by webcam will not only validate this for owners, but can also help to determine what might be the motivation for the behaviour (anxiety, exploration, scavenging).
The behaviour may arise due to anxiety, underlying medical problems or a lack of sufficient opportunity to express normal behaviours (e.g. explore, scavenge, chew, eliminate). The cat that soils when the owner is away on vacation may eliminate out of the box due to alterations in the daily routine (e.g. litter box maintenance) or if access to the litter is reduced or inhibited (e.g. fear, hiding). Owner possessions might be common targets because the pet is attracted to the odours as they try to settle or if there is anxiety in the relationship. Marking is an innate response that might be stimulated by arousal, or unfamiliar odours, sights, and sounds.

All pets hate vets
Since veterinary visits are often associated with unpleasant experiences from wobbly scales to bright shiny lights to surgery and recovery, many pets will become fearful of the veterinary clinic, staff, or the procedures themselves. However, this need not be the case if positive outcomes can be achieved starting with the very first visit. In fact, each step in the sequence: car ride – parking – entry – reception – weight – exam room – procedures – wards should all be considered in minimizing or avoiding the negatives and accentuating the positives. The environment, veterinary personnel, owners and the way in which potentially unpleasant procedures are managed, along with the use of medications where necessary are the key elements in making the experience enjoyable and preventing what is not. MYTH! But if not proactive and positive many pets are likely to become fearful.

Aggression is all about dominance. Resolving aggression is about becoming pack leader.
MYTH! Although this theory is still espoused in the popular press and has gained a widespread foothold in public perception of dog behaviour, an explanation of dog behaviour based on a ‘dominance model’ relies on suppositions not fact. The myth of a structured dominance hierarchy for domesticated canines may have arisen in part from a misinterpretation of wolf behaviour. Early studies, based on groups of wolves in captivity, suggested a linear hierarchy where the alpha individual had priority access to resources and status was maintained by aggression to others. However, wolf research has since reformed the understanding of wolf social groups to describe a breeding pair and their offspring. www.davemech.org/news.html. Free living feral dogs do not form sustained packs, nor do they form groups of a breeding pair and offspring. In addition, the behaviour of domestic dogs differs substantially from wolves, including their ability and readiness to respond to human visual cues, behaviour, and expectations. Dominance is not a trait. It describes the relationship between individuals within a social group when competing for a resource. Even in wolves, this is generally maintained not by aggression but by appeasement or deference. The characterization of dog-dog interactions has been described by the motivation to retain a resource, together with previous experience and individual personality and not as a result of a dominance hierarchy. On the other hand it is not uncommon to find social asymmetry between dogs in a home, where one dog is more competent in taking control of resources and social interactions, while another consistently defers in these encounters. However, this explanation cannot be used to describe interspecific communication and relationships.
A healthy dog-human relationship is a result of genetics, early postnatal environment, socialization, and learning (and not a battle for supremacy). Predictability and consistency in what behaviours get rewards (structured interactions, say please), giving dogs control to engage in behaviours that are desirable while preventing undesirable, reward based training to teach cues (words, hand signals) to develop a “language” for interspecific communication, maintaining a calm and positive emotional state during interactions, and avoiding the use of corrective measures (punishment) are the keys to developing healthy social relationships.

Trainers and veterinarians advising families to take charge by eating first, keeping dogs off furniture, or using confrontation for establishing dominance, are propagating myths that may be counterproductive to establishing a healthy relationship. Numerous studies have confirmed that positive training and consistency result in significantly higher levels of obedience, fewer behaviour problems, and lower aggression and avoidance, while punishment and confrontation lead to more behaviour problems, lower obedience scores, increased avoidance, aggression to unfamiliar people and dogs, and owner directed aggression.5,8 Aggression toward people can be categorized as fear and conflict induced, resource guarding (possessive), pain/medical induced, predatory, maternal (hormonal) or pathological/abnormal (e.g. impulse dyscontrol); not an attempt to dominate us.

My dog is aggressive because it was abused

An animal’s behaviour is a result of the complex interaction between its genes and its environment. Some of the most profound environmental effects occur during prenatal and postnatal development through to the end of the primary sensitive period. While pet owners may shape behaviour by the consequences and experiences to which the pet is exposed after adoption, the time prior to adoption can play a key role in the development of aggression. Thus using a broad definition of abuse that might include maternal malnourishment; maternal deprivation (early separation), inadequate neonatal nutrition, a lack of sufficient early human contact, lack of sufficient outlets for the normal behaviour repertoire of the species, and inadequate socialization, then these are indeed significant contributing factors for fear and aggression. Studies in rodents have demonstrated that a high level of maternal grooming and the effects of regular gentle early human handling can reduce the reactivity of the HPA axis in response to stress in adulthood, while a lack of maternal grooming or a stressful early environment can result in increased HPA axis reactivity. Puppies that were separated from the dam at 30-40 days were more fearful on walks, more toy and food possessive and more reactive than dogs adopted at 8 weeks.6 On the other hand, dogs adopted after 8 weeks displayed greater avoidance, growling and snapping at unfamiliar people, and greater avoidance of veterinarians. Increased aggression has also been reported in dogs raised in non-domestic environments (garage, barn) or that lack of exposure to urban environments from 3 to 6 months of age.10 Therefore this is not a myth if prior to adoption, there has been inadequate nutrition, maternal deprivation, lack of sufficient socialization and environmental experiences, insufficient outlets for normal behavioural needs, physical punishment or corrective training, intensely fearful experiences, or other psychological or physical stressors, that cause or contribute to fear and aggression. However, it is the interplay of these environmental effects with genes and medical health that result in the behavioural phenotype expressed by the individual. In addition, the experiences, environment and consequences to which the pet is exposed following adoption further shapes the behaviour. A behavioural consultation can help to determine what factors are related to genetics and/or a previous abusive (or deprived) background, and what is a function of present environment, and how that might impact on prognosis.

It’s all the owner’s fault

While the owner plays a key role in shaping behaviour both interactively (e.g. training and consequences) and passively (e.g. what the pet experiences), genetics and the experiences prior to adoption will strongly shape behaviour. In fact for mental health disorders including generalized anxiety, fears and phobias, impulse control disorders, post-traumatic stress, compulsive disorders as well as aggressive behaviours associated with altered serotonin levels in English Cocker and English Springer Spaniels, the owners may have had minimal influence. Even with a strong commitment from the owners, pets with behavioural pathology and those with some normal behaviours that are incompatible with the home and family environment (e.g. chase, alarm barking) may be impractical or too great a risk for the owners to successfully manage or improve. (See risk factor assessment position statement at esvce.org).
References


The action is set for Sunday 17 May
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Injury Minimisation & Suitability to Race

Wednesday 27 May 2015
9:30am, Flemington Racecourse, Victoria

Key Note Speakers

Dr Chris Riggs
BVSc, PhD, DEO, DipECVS, MRCVS

Chris studied veterinary science at the University of Bristol in the early eighties. He then received further training in equine surgery at the Royal Veterinary College, London and was awarded a PhD for research into causes of racehorse fractures in 1991.

He has worked at several equine clinical centres, including the University of Liverpool, one of the largest equine referral hospitals in the UK and Oakey Veterinary Hospital, Queensland. Chris has been Head of Veterinary Clinical Services at the Hong Kong Jockey Club since January 2003.

He is particularly interested and has specialist qualifications in surgery and orthopaedics and has research interests in fatigue of bone and its role in racehorse fractures.

His greatest professional achievement to date was to oversee the veterinary care and safe return home of all horses that competed in the equestrian events of the Beijing 2008 Olympic and Paralympic Games.

Conference Topics

Assessing Suitability to Race

How Important is Track Surface?

Vetting Procedure for Horses Sold to Hong Kong

Managing Common Racing / Training Injuries

Contributing Speakers

Brian Anderson
Balarat Veterinary Practice

Stuart Vallance
Flemington Equine

Ben Mason
Crown Equine

Liz Walmsley
University of Melbourne

Colin Martin
Sperero, Aeronautical Engineer

Racing Victoria veterinarians:
Dr Grace Forbes, Dr Michelle Ledger, Dr Brian Stewart and Senior Industry Veterinarians.

Registration Details

Official Racing Veterinarians and Veterinarians interested in providing race day services will be given first preference, however subject to seating constraints, the seminar will be open to Veterinary Practitioners, Racing Officials, Trainers, Owners and Media.

To register for this seminar please contact Zoe Wells on 03 92584373 or v.admin@racingvictoria.net.au by Friday 15th May.

Fee: $50

If you have any questions or specific dietary requirements please email either Grace Forbes g.forbes@racingvictoria.net.au or Zoe Wells v.admin@racingvictoria.net.au

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Member Spotlight
- Dr Barbara Wellington, AM

Barbara’s early ambition to become a veterinary surgeon was fuelled by her great uncle Dr Arthur Turner OBE DVSc, an eminent Melbourne graduate. She began her studies at Melbourne University, where she was awarded a free place, and graduated BVSc (Sydney) in 1965.

Barbara worked with Dr Margaret Goodwin at Ringwood Veterinary Clinic, then after her marriage to John (also a veterinarian) moved to Hobart, then to Cootamundra in 1969 before buying the Ararat Veterinary Clinic in 1970. In 1979, with four children, they returned to Melbourne, where she combined locum and part time practice with raising the family.

In 1985, having practiced at the RSPCA Burwood East clinic as a locum, she was appointed Veterinary Manager RSPCA Victoria, responsible for the clinic, hospital, and supporting the RSPCA shelters and branches, RSPCA inspectors, RSPCA wildlife, and media, education and public relations.

The RSPCA at this time, during Dr Hugh Wirth’s presidency, underwent considerable expansion in its activities, changing Victoria’s attitudes towards animal welfare. The clinic also provided much needed funds for the other activities.

At this time Barbara was appointed to the newly formed Animal Ethics Experimental Committees of Victorian hospitals and universities, always as the animal welfare member, a non-veterinary role. In addition she was a member of the industry advisory committee for veterinary nurse training and participated in writing the national veterinary curriculum; and the restricted breed review panel of the Bureau of Animal Welfare.

Barbara joined the AVA as a student member, and joined the Victorian Division Executive Committee in 1990 and was President in 1993-4 – the second woman after Dr Mary Barton. She was a policy councillor for the Victorian Division from 1992 to 1996, and a member of the Animal Welfare Advisory Committee of the Bureau of Animal Welfare. In 1996 she received an AVA Meritorious Service Award.

In 1998 Barbara and John sold their South Melbourne Veterinary Clinic and they worked and travelled in Britain and Europe for 12 months. Barbara returned to the RSPCA until her retirement in 2002.

In 2003 Barbara and John moved to “Glenisla Crossing”, a small grazing property beside the Grampians National Park and the Glenelg River. They moved to Port Moresby for three months and revived the RSPCA of Papua New Guinea’s veterinary clinic and shelter, returning several times. Barbara is an Honorary Life Member of RSPCA Victoria and RSPCA of Papua New Guinea.

Barbara was a member of the Melbourne Junior Legacy and received support from Legacy and the RSL when a student. In later years she joined the Wimmera Legacy, reversing her role by supporting the Wimmera’s Legacy widows. She is a life-long Anglican and plays bridge with the U3A and is a member of the Royal Over-Seas League (a London Based Club since 1998).

In 2015 she received an Australia Day Honour: (pictured here with husband John following the award presentation)

Member of the Order of Australia
Dr Barbara Joan MADDERN-WELLINGTON

For significant service to veterinary science, to professional associations, to animal welfare, and to the community.

The AVA congratulates Dr Barbara Wellington AM on this prestigious award.
Managing New Graduate Expectations & Concerns

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Introduction

Many new veterinary graduates were born in the 1980s and 1990s. This generation is often referred to as Generation Y (Gen Y) or the New Millennium Generation (Millennials). A number of authors have suggested options for optimising the contribution of the perceived strengths and minimising the impact of the perceived challenges that have been argued to be the features of this generation. This paper will consider some of these perceived strengths and weaknesses. The purpose of this paper is to provide veterinarians and practice managers with ideas for attracting and retaining new veterinary graduates.

The accompanying session will also provide an opportunity for a panel of new veterinary graduates to express their views about themselves, their role in the workplace, their future and the profession.

Generations and generational cohorts

Generations typically range from 20-25 years and each generation is defined by a birth date. Generational cohorts refer to people ‘coming of age’ (17-23 years) during particularly significant political, economic, social or technological environment external events. Arguably, in contrast to generations, the timing of these events is such that the behaviours and attitudes of people within a generational cohort do not change.

People born between 1981 and 2000 are referred to as Generation Y (Gen Y). This generation started to come of age in mid to late 1990s and one of the most significant events for this generational cohort was the impact of the Internet. Computers and electronic communication on demand have significantly affected how they behave and their attitudes to life just as events such as the Great Depression, WWII and the Vietnam War affected previous generational cohorts.

Features of Generation Y

The Internet, computers, mobile telephones and other significant advances in electronic communication during the 1990s have created a generational cohort described as being technology competent and confident. Further, their reliance on electronic communication has arguably resulted in an indifference to face to face communication in contrast to previous generations.
Gen Y has been described as being the most highly educated generation. During their formal education there was a greater emphasis on the importance of working in teams so people within this cohort are also typically described as being ‘team players’; particularly in contrast to members of the previous generation (Generation X) who have typically been described as more individualistic and independent. Other features of their education include ‘helicopter parenting’ and ‘everyone gets a trophy’.

Much of the literature about Gen Y is negative and it is common to find quotes in the literature aligned with the following:

“They walk in the door on day one with very high expectations.” “They don’t want to pay their dues and climb the ladder.”

“They walk in the door with 17 things they want to change about the company.” “They only want to do the best tasks.”

“If you don’t supervise them closely, they go off in their own direction.”

“It’s very hard to give them negative feedback without crushing their morale.”

“They think everyone is going to get a trophy in the real world, just like they did growing up.”

It has been argued that whilst the way Gen Y has interacted with technology is different to previous generations, this generation is no more altruistic, motivated to succeed or less concerned about money than previous generations.

Managing Generation Y

Managing someone who is confident, self-centred, has a strong sense of entitlement, who values work-life balance and flexibility over remuneration, who is happy multitasking, and who may refuse a position if it does not allow access to social media, may prove challenging for Generation X and Baby Boomer employers.

The literature provides a number of suggestions for attracting and retaining this group of employees.

i. Clear policies and procedures

Rules are vital for managing Gen Y. Policies and procedures provide a clear description of how the workplace is prior to employment, expectations (such as dress code) and processes for dealing with potential problems. These policies and procedures have been described by some authors as ‘the rules of the game’ and ensuring employers provide a clear understanding of these rules is vital to attracting and retaining Gen Y employees. Further, equitable and consistent interpretation of these rules by management is vital to retaining Gen Y employees. Aligned with these comments, it has been suggested that the military is the most successful employer of Gen Y.

ii. Training and support

Once employed, training in these policies and procedures is also vital to ensure the decisions made by employees are aligned with the ethical values of the practice. The typical enthusiasm and excitement shown by the new Gen Y employee must be harnessed through an induction program which creates a shared sense of purpose and experience and which is followed by on-going training and support to maintain the enthusiasm for new challenges.

Whilst this generation is considered to be excellent retrievers and scanners of information it has been suggested that they sacrifice context and validity for immediacy. Support therefore includes assisting these employees develop an understanding of the importance of the validity of the information retrieved and a framework for analysing and then synthesising the information to ensure an appreciation of context.

iii. Clear goals

Gen Y is supposedly more goal orientated than previous generations and therefore clear goals, procedures for achieving these goals, and valued rewards for achieving these goals are vital for leading this generation of employees. One study reported the main career goals of a group of university students from this generation to be achieving work-life balance, pursuing further education, achieving financial stability, making a contribution to society, and working internationally. The majority of these students were looking for a career in government but those that revealed a preference for private sector work placed greater emphasis on achieving financial goals.

iv. Feedback

Feedback on performance needs to be provided immediately or as soon as possible. Information needs to very clearly explain gaps between expectations and performance and provide opportunities and support for achieving proficiency. This generation will often look to an external cause for failure and will react defensively to any criticism; consistent, clear explanations and a collaborative approach to problem solving has been argued to address issues with accepting negative feedback.

v. Opportunities for personalised interaction and innovation

Gen Y has high self-confidence and believes it can contribute to the organisation despite limited experience. It may be possible to harness this enthusiasm through
social media; provide employees with clear goals related to social media strategy and ask them to develop solutions and programs that are visually appealing and interactive and therefore capable of attracting fellow Gen Y clients and employees.6

vi. Mentoring

Gen Y is more likely to view or appreciate managers who are mentors or coaches rather than experts.7 Given their confident, team-based approach to work it is therefore more likely that they will appreciate a collaborative or coaching style of leadership to an authoritative or referent approach. Creating opportunities for mentoring relationships between Baby Boomers and Gen Y colleagues may prove particularly valuable for both generations and management.

vii. Flexibility

Flexible working hours and ensuring work-life balance have been reported to be vitally important and more important than remuneration for Gen Y employees.3 However, the relationship with their employer is considered to be more transactional and, unlike Baby Boomers, there is an expectation that they will be remunerated for every task they perform.

viii. Social conscience

Gen Y is looking for a career that has social significance.4 Providing employees with opportunities to set and achieve goals for their organisation aligned with their social conscience can therefore assist with attraction and retention.

Summary

One large survey of the general population of Gen Y employees found that the main reasons for leaving employment were: a better offer (30%); misalignment between their career goals and the goals of the organisation (27%); and lack of career opportunities (13%).9 Providing flexible hours, equitable remuneration, opportunities for further education and opportunities to align personal goals with practice goals appear to be vital elements of any strategy to attract and retain employees from Gen Y.

References

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The conflict between ethical and economical veterinary conduct

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Introduction

How do we resolve the conflict of making money off the back of animal disease?

No doubt the public perception of the veterinary profession is one of a self-sacrificial profession, which altruistically serves to improve the health and welfare of animals. It is a noble profession whose historical image is that around James Herriot and an ultimate love of animals. This perception is often acutely and abruptly called into question when clients are faced with the rising costs of veterinary healthcare.

The hidden reality of the profession is that we require illness, disease and suffering in order to make a financial profit. This concept can cause considerable cognitive dissonance amongst the profession and public alike. How do we resolve the conflict of making money off the back of animal disease in an ethical and professional way? Veterinary practice is a business and there is an obligation to pay staff and to maintain standards. Progression of the profession only occurs at cost and we have a professional obligation to constantly progress and improve. Arranging the economics and practice management systems can be done in an ethical sense by using strategies of effective and ethical business management and combining them with the ethos of the veterinary profession. There are many potential business strategies that can maintain this altruistic professional image but this is easily lost when systems are abused such as through animal insurance.

The origin of professional duty in the UK

Animals are of special interest to people and the common good. Maintaining animals is of special importance in a commercial, nutritional and companion sense. This work of maintaining animals is currently undertaken by veterinary surgeons, however prior to the formation of the social contract explained above and the establishment of the Royal College of Veterinary Surgeons in 1844 and the first Veterinary Surgeons Act in 1884, anyone was able to call themselves a veterinary surgeon. There was no quality control and no limit on what anyone could do to animals. The public had no ability to discern a trained clinically competent veterinary surgeon from someone who just gave themselves that title. The importance of having a protected title for veterinarians is for the public benefit, so that when that title is seen it is known to imply that the person or practice to whom it relates is properly qualified and competent.

This is exemplified in the first veterinary legal case to reach the Queen’s Bench Division. This case clarified the point that only certified veterinarians could undertake treatment of an animal and that this is the only way to ensure the treatment was of a secured standard for the animal’s benefit. In this case an experienced shoeing smith, Robinson, portrayed himself as veterinary qualified and thus broke the public trust by misleading them to believe he was a qualified veterinarian.

“Nothing is so likely to produce injury to a horse as unskilful treatment of its feet and improper shoeing.” It is true that he did not profess that he had himself any veterinary skill; but no one seeing those words “veterinary skill” would be understood by the public generally. “Nothing is so likely to produce injury to a horse as unskilful treatment of its feet and improper shoeing.”

Due to the importance of the animal to the person it became vital to ensure that animals were only treated by people who were properly trained. Charlatans, as expressed by Hawkins J., could cause harm to animals without a benefit, and thus the public would risk loosing their animal, or wasted finance, as no quality control was placed upon the veterinary surgeon. The principle that only properly qualified veterinarians could treat animals was enshrined within the 1844 Royal Charter establishing the veterinary profession. The Charter noted the work of the Royal Veterinary College of London improving the standard of veterinary care.

“That the said College was instituted to improve the veterinary art which had been theretofore practised generally by ignorant and incompetent persons, which had been long and universally complained of; That Parliament, being fully convinced of the propriety of such an institution as the Royal Veterinary College of London, and of the national benefits to be derived from
it, has munificently (when required) granted aid to that establishment;”

In order to protect the public interest in only receiving quality veterinary care, the public (as represented by the elected government) removed their own freedom to undertake veterinary surgery and passed that power to the state. This meant that no member of the public may undertake any act of veterinary surgery nor could they call themselves or pretend to be, a veterinarian. The government, through legislation, and the Privy Council, through a Royal Charter, established a governing body to certify certain people as veterinarians and thus devolved its power to regulate the profession to this body. The consequence was that the special group of individuals gained the freedom to undertake acts of veterinary surgery that the public had given up. The public had given this up in a way so as to receive more advantage back in turn. The ability of anyone to undertake a procedure on an animal that could potentially cause that animal harm was removed from everyone, and the group of people known as veterinarians, authorised through the RCVS, were given legal immunity to act in this way under the assumption it is for the animal’s interest. This last point is critical to understanding the power of the social contract. Animals are fundamentally protected by legislation so that no member of the public may undertake veterinary acts, then secondarily, the legislation is arranged so that those members of the public who are veterinarians are given a legal immunity to undertake their work. Their legal immunity is granted and governed by the RCVS. It is not sufficient to be ‘veterinary qualified’ to gain the legal immunity, one must be granted the immunity by the governing body. This is done through membership to the RCVS.

Therefore the public could be confident that anyone who called themselves a veterinarian would be someone who was trained and able to undertake acts of veterinary medicine and was lawfully permitted to undertake these acts. Thus the public are self limited in their ability to treat animals, and have passed that power to the state who have in turn given it to the body of veterinary surgeons. Veterinarians only have their unique powers, or immunity, ‘on loan’ from the public, but they have it in order to serve the public. That is, to serve the public interest. In order to ensure the social contract is not broken the public interest in the veterinary profession needs to be understood.

The 1844 Royal Charter not only established the Royal College of Veterinary Surgeons admitting its members as being members of a profession, it also granted that no one is who is not a member may be styled as a veterinary surgeon.

“AND WE DO FURTHER DECLARE AND GRANT, That the veterinary art as practised by the members of the said body politic and corporate shall be henceforth deemed and taken to be and recognised as a profession, and that the members of the said body politic and corporate solely and exclusively of all other persons whomsoever shall be deemed and taken and recognised to be members of the said profession or professors of the said art, and shall be individually known and distinguished by the name or title of veterinary surgeons:”

Within 30 years of the start of the profession, it became apparent that it was necessary to be able to remove members from the profession if it was deemed necessary.

“That it shall be lawful for any Meeting of the Council, at which not less than two-thirds of the Members shall be present, and with the consent of three-fourths of the Members so present, but not otherwise, to remove the name of any Member from the Register of Members of the said College, and he shall thereupon cease to be a Member of the said College.”

Thus now, the public knew that anyone styled as a veterinarian surgeon was a registered member of the Royal College of Veterinary Surgeons, and also knew that if it was necessary to ensure that an existing member did not fit the standards of the profession, then there was capacity to remove their ability to practice as a veterinarian.

The case of Kfir Segev

In November 2006 a defining case regarding a breach in trust between the public and the veterinary profession began; this case is a key example of the need to understand justice within the veterinary profession in several areas. Veterinarian Mr Kfir Segev recommended to a client that their dog (Zoe) undergo expensive diagnostic work of an MRI and lung aspirates of masses having deliberately mislead the client that Zoe was not terminally ill. Mr Segev knew this work was unnecessary and would not promote Zoe’s welfare. During the hearing Mr Segev admitted he suggested the tests for financial gain. Mr Segev was removed from the register of veterinary surgeons for “Disgraceful Conduct in a Professional Respect”. Mr Segev, following substantial retraining over 2 years with multiple continued professional development courses, voluntary work and work experience with senior veterinarians, was readmitted to the register and allowed to practice. He was rebuked that during this interim period he had kept the title “Veterinary Surgeon” on the sign above his practice door which was in breach of Veterinary Surgeons Act 1966.

This case breaches many elements of a profession such as a protection of the title, professional reputation, public trust in professional advice and behaviour, client autonomy and, most importantly for the veterinary profession, animal welfare. The disciplinary committee in their deliberations outline various elements that can be attributed to a value of justice. The professional should not work for their own interest, such as finances, but selflessly for the interests of the public expectation of
which one element is animal welfare. The professional should not act in a paternalistic manner with the powers awarded to them, but act accountably and objectively including the members of the public in the decisions they are jointly making, they should do this with honesty without deceiving the public. In respecting the client’s autonomy, the professional should display leadership in the process of information delivery and guide client choice through open information. They should have absolute integrity in their actions, maintaining not only the public’s trust in them but also the profession’s trust in them as an individual, such as was not seen in the mistruth presented in the hearing. All of these principles are similar to those principles found in the Nolan Report on Standards in Public Life.

The disciplinary committee commented on the potential for abuse of power by a veterinary surgeon and breach of trust that follows and its knock on effect to the rest of the profession.

“The reputation of the profession inextricably linked to its approach to financial matters, and trust is easily lost when there is abusive behaviour... We entirely accept that an unequal power exists between the veterinary surgeon and the client, and it behoves the veterinary surgeon to exercise that power in a true, wise and proportionate manner.”

The primary purpose of the RCVS is to protect the public interest in animal welfare through the regulation of veterinarians, and in this case public interest had been breached. The relationship between the veterinary and the public is an uneven one, with power weighted to the former through knowledge base and capability to treat through the social contract. The balance of power lies with the veterinarian and with that comes the onus to ‘act justly’. The imbalance of power requires of the profession to be “true, wise, reasonable, proportionate and responsible” (RCVS DC 2009). From this case ‘acting justly’ can be understood as not for selfish financial gains, but for being in the interests of the animal, giving clients autonomy, fair regulation through honesty in processing and an appropriate sanction that uphold the remit of the RCVS.

It was during Mr Segev’s restoration hearing that the RCVS Disciplinary Committee dwelt upon the problem of the power the veterinary surgeon has to mislead the client for their own gain.

“The Committee found that this conduct amounted to disgraceful conduct in a professional respect. Its findings were, it said, very serious. Mr Segev had embarked on a dishonest course of conduct, leading to his clients being misled over a number of days, and did so with a view to financial gain. He had abused his position as a veterinary surgeon.”

This singular disciplinary hearing covers many elements of the concept of justice as it is currently held in the veterinary profession. The resulting Panorama television program demonstrated the consequential public obloquy to such a breach in public expectation or breach in public interest. Mr Segev’s case was far from the worst instance of abuse of power in order to gain financially.

The case of Matthew Douglas Morgan

A recent disciplinary case from 2013 resulting from criminal conviction found a veterinary surgeon to be imprisoned for two years for ‘four counts of dishonestly making false representations to make gain for self/ another or to cause loss to other/expose other to risk’.

The facts of the case are as follows:

Between November 2009 and December 2012 Mr Morgan took out 18 insurance policies for veterinary cover for 18 different animals. During the 3 years of the duration of the policies Mr Morgan made 50 claims upon them. Mr Morgan sought payments to reimburse himself for the cost of veterinary treatment. All 50 claims on these policies were fraudulent because the treatment had not and could not have been given as 17 of the animals did not exist. The remaining animal was his own cat, which he claimed for treatment in regards to a road traffic accident, when in fact no accident had occurred. The total sum he claimed for was £226,360 of which he received £198,295 (approximately $370,000 AUS). This is in addition to his legitimate yearly salary of £100,000. In his own words at the police interview he said “having worked as a vet, he was mindful of how easy it was to make a claim and he had periodically thought of doing so.”

The RCVS removed Mr Morgan from the register of veterinary surgeons for dishonesty, premeditated misconduct and financial gain, amongst other reasons. He preplanned the fraudulent activities he undertook to such a degree as to take headed paper from the practice home after work and also the practice rubber stamp to certify the documents. He created fake records for the fake patients in order to deceive the insurance companies out of a substantial amount of money. They were “offences committed for financial gain to a very high degree”.

This singular disciplinary hearing covers many elements of the concept of justice as it is currently held in the veterinary profession. The resulting Panorama television program demonstrated the consequential public obloquy to such a breach in public expectation or breach in public interest. Mr Segev’s case was far from the worst instance of abuse of power in order to gain financially.
Conclusion

These two cases are not the only cases where veterinarians have abused their position of power for their own financial gain. There have been many others including those claiming on behalf of farmers to the Ministry of Defence for compensation for the death of farm animals from low flying military helicopters. Some of these cases are purely cases of financial gain through creation of fictitious scenarios, whilst others are undertaken more subtly by the veterinarian, for example misleading the client and undertaking unnecessary and inappropriate diagnostic tests and treatments on animals.

Unlike many other professions, clients have to take a great deal on trust that veterinary surgeons do not abuse their power in producing correct billing. The animal recipients of our treatment are not able to report incorrect surgeries and owners are often not aware of inappropriate diagnostic tests. There have been several key professional disciplinary cases in the UK that have demonstrated the public recourse that can occur if there is deviation from the expected standard in professional pricing. These cases show how the conflict of ethical and economic practice can fall in the wrong direction. The public interest is that veterinary surgeons are honest and act for the best interests of the client, the animal and the profession. Substantial breaches in professional conduct and trust, such as these stated, can undermine the public trust and even go so far as to undermine the social contract that empowers the profession.

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Introduction

Mitral valve disease remains the most common cause of congestive heart failure (CHF) in our canine population, especially in small-breed dogs. Accurate diagnosis of CHF allows the appropriate implementation of therapy. Newer technologies are available for evaluating patients, but not all are informative about the presence or absence of CHF.

Heart disease vs heart failure

Diagnosis of mitral valve disease in dogs is relatively simple – a murmur is ausculted on a physical examination. Thus, the probability that an older small-breed dog has CHF without a murmur approaches zero (with few exceptions). Terminology can be confusing as well – “heart failure” in the human medical literature is synonymous with “myocardial failure” or “ventricular systolic dysfunction”. On the other hand, “heart failure” in the veterinary lexicon is synonymous with “congestive heart failure” (CHF). Therefore, recommendations and extrapolations from medical literature can be problematic if these semantic differences are not recognized.

What is CHF?

Congestive heart failure is a clinical syndrome – a constellation of clinical signs and physical exam findings – that is due to the accumulation of extravascular fluid (edema) in a dependent vascular bed (lungs and pleural space with left-heart failure; pleural space, abdomen, pericardial space, viscera, and subcutis with right-heart failure) secondary to severe heart disease where the ventricular end-diastolic filling pressure is elevated above a critical threshold, resulting in increased venous pressure and increased capillary hydrostatic pressure. Massive activation of fluid-retention mechanisms (renin-angiotensin-aldosterone system, thirst receptors etc) and marked increase in sympathetic tone, accompanied by respiratory discomfort (reported in people as “shortness of breath” or “sensations of breathlessness”) are hallmarks of CHF. The question, then, remains on the best way to diagnose CHF correctly.

Things to ignore when diagnosing CHF

Ignore the cough! It is difficult to “ignore the cough” when the owner has presented for that very problem. However, while some CHF patients cough, so do dogs with other diseases.

Many dogs with CHF cough. Many coughing dogs have murmurs. Therefore, the initial leap by most practitioners is to make the following assumption:

Murmur + Cough = CHF

Nothing could be further from the truth. Recent studies have suggested that coughing is not an independent predictor of CHF in dogs.

Therefore, when attempting to determine whether the patient has CHF or not, the diagnosis should be made without reference to the “cough”, but should rely on other findings.

Forget about mucous membrane colour and capillary refill time. Most patients with CHF have normal mucous membrane colour. Similarly, capillary refill time is normal in virtually all dogs and cats with CHF. There is little value to examining these clinical variables in patients with heart disease, with the exception of cyanotic heart defects (which do not cause CHF).

The key points to diagnosis of CHF

Assess the cardiac rate and rhythm. Significant clues can be obtained from the heart rate and rhythm as to the probability of CHF in a canine patient. A respiratory sinus arrhythmia virtually rules out the diagnosis of CHF in a dog. This physiological arrhythmia is the consequence of high vagal tone, which is abolished in the presence of pulmonary edema. However, a normal sinus rhythm can be ausculted in some dogs with CHF but also in dogs that are merely excited, so loss of respiratory sinus arrhythmia does not confirm the diagnosis of CHF. Many, but not all, dogs with CHF have a tachycardia (even a mild one). Thus, a vagal bradycardia also helps rule out CHF in dogs.

Find the murmur, grade the murmur. Important information about the disease process can be obtained from the cardiac auscultation in dogs. Much less can be gathered by ausculting cats.
Murmur intensity in mitral valve disease is of diagnostic value – in one study, no dogs with severe myxomatous mitral valve disease (MMVD) had soft murmurs. Therefore, a soft mitral murmur in an older dog is strongly indicative of mild disease. However, in that study, some dogs with loud murmurs had mild disease – therefore, a loud murmur doesn’t tell us if the disease is severe or mild.

Murmur location, timing and quality tell us less about the likelihood of CHF.

Assess the size of the heart and the size of the leak. In most cases, CHF is associated with pronounced cardiomegaly, especially of the atria on the affected side. Thus, with left-sided CHF (pulmonary oedema), we expect to see a markedly enlarged left atrium (and left ventricle). The exception to this rule is acute CHF associated with sudden chordae tendinae rupture, where the left atrium has not yet had a chance to enlarge, and LA pressure sky-rockets. This can usually be done with good quality orthogonal radiographs in most dogs.

Look for clear evidence of pulmonary oedema. Theoretically, CHF in dogs should result in perihilar oedema. However, it is often very difficult to identify this radiographic “entity”. Furthermore, the diagnosis of perihilar oedema, or, more accurately, increased perihilar interstitial opacity, should not be made in the absence of marked LA enlargement. Generalized and even localized interstitial opacities are commonly seen in dogs.

Measure the respiratory rate. Every dog suspected of having CHF, especially if it is mild or subtle, should have the in-clinic respiratory rate (RR) and effort assessed. This is best done by observing the dog when it is most relaxed – for example, on the exam-room floor, or in the owner’s lap, while you are obtaining a history. A normal resting RR (<30 breaths/minute) effectively rules out CHF. If the in-clinic RR is high, and the patient is stable, and not clearly dyspnoeic, the owner obtain a sleeping RR at home. If the sleeping RR is normal, CHF is ruled out. A high respiratory rate (tachypnea) in the absence of any other cause, and coupled with evidence of severe heart disease, strongly suggests CHF as a diagnosis.

The Frusemide trial. Frusemide (furosemide) is often used to determine if clinical signs are attributable to CHF. Owners will remark that the coughing subsides or improves dramatically with furosemide therapy. However, furosemide is also a potent bronchodilator, and has activity at the larynx as an antitussive. Thus, elimination of a cough with furosemide does NOT prove the CHF hypothesis. Instead, a proper furosemide trial consists of demonstrating a reduction in the sleeping or resting respiratory rate.

How useful are serum biomarkers in the diagnosis of CHF secondary to MMVD?

NT-proBNP is a biomarker of myocardial stretch that increases substantially in dogs with CHF. Studies have suggested that it increases the accuracy and confidence of a diagnosis of CHF amongst primary care practitioners. However, false positive results exist. Additionally, currently no rapid test exists. Most clinicians would be unwilling to wait 24 hours before treating patients with severe clinical signs consistent with CHF – therefore, until this assay provides a more rapid result, it is of limited value. In cases with mild clinical signs, it could help provide additional information about the probability of CHF. Moreover, a clinician is likely to make as good a diagnosis without NT-proBNP if they follow the aforementioned plan, as with the blood test.

How useful is echocardiography in the diagnosis of CHF secondary to MMVD?

Echocardiography can be helpful in some cases, but is often unnecessary for the diagnosis of CHF. Various studies that have attempted to estimate left atrial pressure and CHF have found imperfect associations with clinical signs. There does not appear to be a clear “break-point” in any echocardiographic variable and the presence or absence of CHF.

Echocardiography can be useful in cases of acute mitral valve chord rupture. In such cases, a large flailing chord can often be visualized, along with a large regurgitant jet and potentially marked distension of the pulmonary veins, but in the absence of substantial left atrial enlargement.

Conclusions

Clinicians should realize that the diagnosis of CHF requires a constellation of logical clinical findings. In small breed dogs, where MMVD is the most common diagnosis, this requires identification of a loud murmur, lack of a sinus arrhythmia, evidence of somnolent tachypnea (if mild) or tachypnea on physical examination if more severe, radiographic or echocardiographic evidence of marked LA enlargement (unless acute chord rupture is suspected or identified), and radiographic evidence of pulmonary oedema. If necessary, a properly conducted furosemide trial can help differentiate CHF from other diseases. Using these guidelines, clinicians will be less likely to mis-diagnose and mis-treat patients, resulting in happier clients and happier pets.
Getting the most out of your field surgeries

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Introduction

Field surgeries are an essential component of just about any large animal practice. For dairy cattle veterinarians, surgeries may be a routine and even a daily occurrence whilst they may be more sporadic for practitioners serving more extensive large animal industries. This session has a broad focus, the aim is not to delve into or preach specific surgical approaches especially since I don’t proclaim to be a particularly talented or vastly experienced field surgeon. Instead, an evidence-based medicine approach will be used to explore some important surgical principles which should be considered by all large animal practitioners to improve outcomes for their patient, client and of course, themselves.

A word on evidence based medicine (EBM)

By definition, evidence based medicine (EBM) is the “conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients” which also must encompass individual clinical experience. Whilst a detailed description the principles and application of EBM are beyond the scope of this article, I think it is worth adding this definition into the memory bank. Most experienced large animal practitioners are very proficient at calling upon clinical experience when undertaking therapeutic decision-making. However, since taking on a more involved teaching role with undergraduates I have discovered that there is far greater scope for consulting the evidence with regard to many of the practices which I had previously taken for granted. “I’ve always done it that way” is not a very satisfying answer for veterinary students nor does it represent good use of evidence based medicine. To quote Sacket et al. (2007) again “without clinical expertise, practice risks becoming tyrannized by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient”. Likewise, “without current best evidence, practice risks becoming rapidly out of date, to the detriment of patients”. For more detail and a good example of how EBM can be applied to large animal surgery, please see the article written by O’Connor et al. (2011) at the conclusion of this paper.

Case selection

Case selection is an aspect of field surgery which, for a reasonably proficient surgeon, arguably supersedes any other surgical principle. Performing surgery on a cow with virtually a hopeless prognosis is not good for anyone. In most situations the client is relying upon your judgment and an unfavorable result can hastily turn them off any future surgery. Of course many things are beyond our control and uncertainties always exist, but we have all encountered the client that, despite a reasonably good prognosis, is reluctant to allow a surgery to be performed because “one we had years ago died anyway”. Likewise, there is the ethical dilemma of putting an animal through a taxing surgery where the outcome is unlikely to be a good one. The first right abomasal volvulus (AV) I encountered as a new graduate had a heart rate of 140bpm and despite my advice the owner insisted on her being operated on. Of course, the cow died two hours later even with a swift and smooth surgery. It meant that as a new graduate I felt terribly guilty about putting the cow through it and was forever apprehensive about future AV surgeries. Interestingly, a quick search of the literature reveals that the mean survival rate for AV is typically between 61-74% with a number of laboratory findings shown to be good prognostic indicators. Base excess, plasma chloride and serum ALP are reasonably good predictors of post-operative outcomes but are of little practical value in the field. However, the clinical research does suggest that dairy cows with a heart rate of >90bpm have a poor prognosis for productivity and >100bpm have a poor prognosis for survival. Similarly for bovine caesarian sections, there is a great deal of evidence to suggest that the condition of the cow is a far more important determinant of outcome than specific surgical practices. A rapid clinical assessment without prolonged obstetric manipulation (e.g. peritonitis, surgical site infection) and higher both dam and calf survival. Therefore, making a decision early in the dystocia case is more conducive to a favorable outcome and clients are more likely to be agreeable to future surgery.
Another important consideration with regard to case selection for production animal surgery is cost-effectiveness. In many instances immediate euthanasia or salvage slaughter may be a more economically viable option than to undertake surgery and must always be presented as an option. A number of factors will determine which course of action is most appropriate. These include prognoses for favorable and unfavorable outcomes for each available intervention, the cost of each intervention and the revenue obtained from each outcome. In the instance of a right-flank omentectomy for correction of a left displaced abomasum one should always consider the age of the cow, level of production, disease history (e.g. mastitis, infertility), body condition score and genetic merit of the individual before proceeding. Similarly a caesarian section on a severely undergrown, mismated heifer presenting with foetopelvic disproportion, after the client has been attempting excessive manipulation for some time, is unlikely to provide a good return on investment and in most instances should be humanely euthanased. Of course the sentimental value of animals should never be overlooked or disrespected. On occasions the least valuable animal on outward appearance is of the highest sentimental value to the client and failure to recognize this can be extremely damaging to the client-veterinarian relationship.

Restraint, anaesthesia and analgesia

Adequate restraint and anaesthesia is required for all large animal surgeries for three reasons: 1) safety of the veterinarian and other people involved, 2) safety of the animal and 3) to prevent contamination and enable surgical precision if the animal is still. A good crush or head-bail with side-opening doors or removable bars is ideal but not always available. Often a good tail-jack, halters, ropes snatch-straps and hip-lifters can be used to facilitate restraint but it is extremely important that in the absence of suitable facilities the veterinarian does not take risks which threaten the safety of themself, others or the animal. Veterinarians should also be aware of the right to stop or refuse to carry out the procedure if any safety concerns arise. In cases where the animal is likely to go down, the use of a snatch-strap under the brisket behind the elbows may be useful. Alternatively, starting the procedure in a recumbent position is in most instances favorable to having the animal go down intra-operatively.

Surgeon comfort is often a luxury but makes for a far more pleasant experience. At our practice, calf hernia surgeries are almost always carried out with the calf restrained in dorsal recumbency in the bucket of a front end-loader lifted to a comfortable operating height.

Sedation should be considered as an adjunct to good restraint particularly in fractious animals or where facilities are suboptimal. Sedation with a low dose of xylazine (0.01-0.04 mg/kg IV) is often sufficient to facilitate co-operation in a standing patient with minimal risk of going down. However, sedative effects are reduced in animals which are excessively stimulated prior to administration. Leaving the animal alone to stand quietly for 5-10 minutes following administration of a sedative agent is likely to save time in the long run. A potential disadvantage of xylazine is the increase in uterine tone which may make it more difficult to manipulate and exteriorize the uterus in animals undergoing caesarian section. This may be mitigated by the administration of intravenous clenbuterol just prior to surgery. When a greater degree of sedation or recumbency is required higher doses of xylazine can be used; however, consideration for ambient temperature should be made especially in dark coloured or long-coated animals in hot weather due to interference with thermoregulatory mechanisms. In addition, withholding of feed for 24-48 hours and water for 8-12 hours prior to surgery has been advocated to reduce the risk of regurgitation and aspiration. Rapid reversal of the sedative effects of xylazine can be achieved by the administration of 0.05-0.1mg/kg of atipamizole IV. Note that atipamizole is off label for cattle and a relapse to sedation 80 minutes to 3-4 hours post-administration has been reported. An alternative protocol for standing procedures involves the combination of butorphanol (0.01 to 0.025mg/kg), xylazine (0.02-0.05mg/kg) and ketamine (0.1mg/kg) (“ketamine stun”) subcutaneously or intramuscularly and is reported to provide a greater degree of analgesia and patient co-operation. The duration of action is around 45 minutes to one hour. Details of a more potent combination is described elsewhere and can be used to induce recumbency and general anaesthesia for herniorrhaphy, claw amputation and cast changes on farm.
Most surgical procedures of large animals are conducted using local or regional anaesthesia and choice is largely dependent on the procedure to be performed, surgeon’s preference and patient factors such as body condition. Where different techniques exist it is important that surgeons weigh up the advantages and disadvantages of each and as much as possible to make their decision based on the best likely outcome for the patient. For example, anaesthesia techniques for standing flank laparotomies in cattle include the proximal and distal paravertebral block, inverted “L” block and line blocks. Advantages of the proximal paravertebral block are that it requires the smallest dose of local anaesthetic, produces the largest region of anaesthesia and provides less variable anaesthesia of the peritoneum. However, it is more technical to perform and requires a longer needle (e.g. 10-15cm spinal needle) than the distal paravertebral block which can be performed easily on most dairy animals and lighter conditioned beef cattle with a standard 1.5 inch, 18 gauge needle. “Inverted L” and line blocks are the least technically challenging but require the greatest amount of anaesthetic and are more variable in terms of anaesthesia and muscle relaxation of the deeper layers of the abdominal wall. In addition, line blocks have been associated with delayed wound healing due to the presence of oedema and local anaesthetic at the incision site. Regardless of which technique is used, one should note the recommended maximum dose of 2% lignocaine in cattle is 60-100ml/500kg as higher doses may cause sedation, recumbency and cardiovascular collapse.

Good management of post-surgical pain is achieved by balancing the required level of analgesia with economic constraints. The decision to administer peri-operative analgesia has historically depended on the procedure. In one survey, castration and dehorning were considered less painful and patients less likely to receive additional analgesia than for claw amputation and caesarian section. However, large animal analgesia is an area which merits greater consideration than it has had in the past particularly as consumers become more astute with regard to animal welfare. Interestingly, a survey of New Zealand veterinarians identified significant gender and age bias with regard to perception of pain with females and more recent graduates assigning higher pain scores to various procedures when compared with male and older respondents. Non-steroidal anti-inflammatories (NSAIDs) are the most commonly administered drugs for post-operative analgesia and act to reduce pain, swelling and inflammation at the surgery site and promote more rapid patient recovery. NSAIDs licensed for use in cattle include flunixin meglumine, ketoprofen, tolfanamic acid and meloxicam. The drug of choice is dependent upon required duration of action, ease of administration, cost and withholding periods. Flunixin meglumine may have an added advantage in the prevention of abdominal adhesion formation and has been clinically proven to enhance patient recovery following laparotomy and correction of left displaced abomasum. In two studies, pre-operative flunixin meglumine was associated with greater rumen contractility 24-hours after surgery as well as significantly improved appetite, defecation and milk production when compared with untreated controls.

The role of antibiotics

The use of antibiotics

The role of prophylactic antibiotics in large animal surgery is a contentious issue particularly with ever increasing public scrutiny over chemical residues in animal products and the development of antimicrobial resistance. Whilst there is arguably a greater role for prophylactic antibiotics in the field when compared with a controlled hospital environment they must never be used in place of best-practice surgical principles. Such principles include, but are not limited to, dissection along tissue planes, gentle tissue handling, good haemostasis, appropriate surgical approach, correct suture material choice and closure of dead space. Additionally, “time is trauma” according to Desrochers (2005) and small animal studies have shown that surgical time has profound implications for incidence of post-surgical infection. Eugster et al. (2004) found that for every 70 minutes of surgical time the risk of surgical site infection doubled. Similarly, Brown et al. (1997) found that the rate of postoperative infection doubled when the surgical time was extended to 90 minutes compared to 60 minutes.

When tempted to reach for the bottle for added ‘insurance,’ it is important consider the potential disadvantages of antimicrobial use. These include selection for antimicrobial resistance, added cost, withholding times for sale of meat and milk and potential adverse effects on gastrointestinal flora. To mitigate these effects, consideration of the diagnosis, prognosis, nature of the surgical procedure, surgical environment, likely pathogens, adverse reactions, dosage and duration of treatment should be used to aid antibiotic selection. A sensible way in which to view antibiotics is as an adjunct to the hosts’ natural defense mechanisms. Addressing the presence of necrotic tissue, blood clots and dead space prior to closing, minimizing damage to surrounding vascular structures and removal of unnecessary foreign bodies (e.g. sutures, implants) must be performed before the use of antibiotics can even be considered. In addition, improving the patient’s nutritional status, physiological state and immunocompetence prior to surgery may be possible in some cases and if so, surgery should be delayed.
The choice of antibiotic should always be based on the most likely pathogens involved. Common pathogens isolated from post-surgical infections in small animal patients are Staphylococcus spp. (especially S. aureus), gram-negative enteric bacteria and anaerobes. In terms of body systems, urogenital surgeries are more likely to involve E. coli, Streptococcus and anaerobes whilst deep penetrative wounds are more likely to involve anaerobes and facultative bacteria. There is little empirical data for pathogens involved in post-surgical infections in cattle so we must extrapolate from other species and it would seem that oxytetracycline is a sensible and cost-effective choice in most situations. Meanwhile, a broad-spectrum penicillin such as amoxicillin or a cephalosporin (e.g. ceftiofur) may be a better option in contaminated urogenital surgeries (e.g. emphysematous caesarian) than procaine penicillin. Interestingly, a survey of Canadian veterinarians reported that over half used intraoperative intraperitoneal (IP) antibiotics. A recent review article (posted on the ACV List in August 2013) highlights the lack of evidence to support its use over intramuscular (IM) antibiotics alone9. The justification for IP antibiotics is also dubious due to the high variability of distribution within the abdomen when compared to IM antibiotics, and in the instance of penicillin, the assumption that bacteria are replicating at the time of administration. There is also no evidence to suggest the rate of absorption from the peritoneum is superior to that obtained from post-surgical IM administration.

It is now well established that prophylactic antibiotics are of greatest benefit if they are present at the surgical site at the time of potential contamination. In order to achieve adequate systemic concentrations most surgical texts recommend the administration of prophylactic antibiotics 30-60 minutes prior to the first incision. Therefore, it would be prudent to include systemic antibiotic administration as part of the routine pre-surgical preparation of the patient. An exception may arise when the outcome of surgery is uncertain or the cost of treatment and/or withholding periods need to be minimized. It is important to note, early research suggests that administering antibiotics >4-hours postoperatively has little to no effect in preventing post-surgical infection. In human medicine, prophylactic antibiotic treatment does not usually exceed 24-hours duration and this has been tested in cattle. Haven et al. (1992) found that a single pre-operative dose of penicillin G was as effective as a pre-operative dose followed by a 7-day postoperative course in steers which underwent an exploratory rumenotomy. Efficacy included a reduced incidence of surgical site abscessation, lower post-surgical rectal temperatures and better post-surgical feed intake compared to untreated controls15. This may also be a useful consideration where client compliance is dubious – since the risk of antimicrobial resistance is likely to be lower for an effective single pre-operative dose of an antibiotic than for a haphazard post-surgical course of antibiotics.

Instrument sterilization

Options for instrument sterilization include autoclaving, gas sterilization, cold (chemical) sterilization and boiling and the efficacy of various methods is shown in Table 1. The choice of instrument sterilization depends largely on the nature of the surgery. For instance, large animal practitioners often use cold sterilization, whereby instruments are soaked in a commercial solution (e.g. gluteraldehyde) for most clean-contaminated (e.g. enterotomy), contaminated (e.g. lacerations) and dirty (e.g. drainage of an abscess) surgeries. It is important to note that some chemicals are irritant to tissues and skin so care must be taken to minimize contact with the surgeon's skin and to prevent excessive splashing onto the incision site. For clean surgeries such as exploratory laparotomies cold sterilization may be adequate for immunocompetent hosts; however, in the instance of elective surgery on juvenile animals (e.g. herniorrhaphy repairs in calves) it would seem negligible not to use autoclaved or gas-sterilised instruments.

Pre-surgical preparation of the cow

Preparation of the operative field commences with removal of gross contamination (e.g. mud, faeces) and the animal may need to be hosed off. The hair should be clipped or shaved off as neatly as possible – remember...
that neatness of clipping and external sutures are often the basis of the client’s perception of surgical skill! Clipping alone is generally preferable to shaving as it is less likely to incite skin reactions. For flank laparotomies a minimum of a 60cm caudal-cranial and 90cm vertical area is recommended. Povidone-iodine and chlorhexidine have been shown to be equally effective in reducing bacterial contamination of the skin of large animal surgeons. The properties of each, as well as alcohol, are listed in Table 2. It is important to note that povidone-iodine requires two minutes of skin contact to be effective and is inactivated by organic material. Newman (2008) suggests that chlorhexidine may be advantageous as it is less likely to mask the degree of cleanliness compared to povidone-iodine. In either case, a protocol in which povidone-iodine or chlorhexidine is alternated with 70% alcohol is appropriate for most surgical preparations.

Suturing and suture materials

The importance of appropriate suture material, pattern, handling and knot security cannot be overemphasized. Desrochers (2005) found that the abdominal wall of a 300kg Holstein bull was 30% stronger than a USP 2 surgeons. Common suture materials used in large animal practice include chromic catgut, nylon, polyglycolic acic and polyglactin and the features of each are detailed in most surgical texts. It is important to consider anticipated healing time, likelihood of infection and cost when selecting suture materials. Chromic catgut is the least expensive absorbable suture material but disappears rapidly in the presence of infection due to increased phagocytic activity. Chromic catgut would therefore be less appropriate for closure of an enterotomy incision (clean contaminated) than for an omentopexy (clean) for LDA correction. Similarly, healing of fascial wounds is very slow so the use of a non-absorbable suture material may be necessary. In all instances, the size of the suture material should be as small as the holding power of the tissue will allow since the larger the suture, the greater the inflammatory reaction and retardation of wound healing. Generally speaking, more sutures are better for wound healing than a smaller number of large sutures. As a rule of thumb, for interrupted sutures any more than two throws following a square knot exacerbates tissue reaction without any advantage in knot security but an extra throw at the start and two extra throws at the end of a continuous suture line does improve knot security. The length of suture ends is dependent on knot security and feature of chromic catgut is that it swells in the presence of moisture. Knots are therefore prone to loosening so ends should be left slightly longer than for other materials.

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Mechanism of action</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorhexidine</td>
<td>Disruption of cell wall and precipitation of cell proteins</td>
<td>Broad spectrum (more effective against gram +ve than gram -ve or fungi)</td>
</tr>
<tr>
<td>Iodophores (e.g. povidone-iodine)</td>
<td>Coll wall penetration, oxidation, replaces microbial contents with free iodine</td>
<td>Broad spectrum (gram -ve, gram +ve bacteria, fungi, viruses)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Combination of above</td>
<td>Broad spectrum (gram -ve, gram +ve, fungi, viruses)</td>
</tr>
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Follow up

Case follow up is arguably as important as case selection in terms of nurturing client relationships and professional development. Follow up allows the veterinarian to reflect on his/her technique/skill and to develop clinical experience in both routine and non-routine surgeries. A genuine interest in how the patient is going opens the door for veterinarians to promptly address any issues and provides an upselling opportunity as the discussion invariably leads to aspects of management, prevention and other herd-health areas in which the veterinarian may be of assistance.

Recommended reading


References

3. Newman KD. Bovine cesarean section in the field.
Abstracts of interest

Prevalence and Prognostic Importance of Pulmonary Hypertension in Dogs with Myxomatous Mitral Valve Disease


Journal of Veterinary Internal Medicine, 29:569-574 (2015)

BACKGROUND Pulmonary hypertension (PH) is common in dogs with myxomatous mitral valve disease (MMVD) but its effect on clinical outcome has not been investigated.

HYPOTHESIS/OBJECTIVES The presence of PH worsens the outcome in dogs with MMVD. To compare survival times of dogs with MMVD and PH to those without PH.

ANIMALS Two hundred and twelve client-owned dogs.

Methods Case review study. Medical records of dogs diagnosed with ACVIM stage B2 and C MMVD between January 2010 and December 2011 were retrospectively reviewed. Long-term outcome was determined by telephone interview or from the medical record. End of the observation period was March 2013. PH was identified if tricuspid regurgitation peak velocity was >3 m/s.

RESULTS Two hundred and twelve were identified. Eighty-three dogs (39%) had PH. PH was more commonly identified in stage C compared to B2 (P < .0001). One hundred and five (49.5%) dogs died during the observation period. Median survival time for the entire study population was 567 days (95% CI 512–743). Stage C (P = .003), the presence of PH (P = .009), left atrial to aortic root ratio (LA/Ao) >1.7 (P = .0002), normalized left-ventricular end-diastolic diameter (LVEDn) >1.73 (P = .048), and tricuspid regurgitation pressure gradient (TRPG) >55 mmHg (P = .009) were associated with worse outcomes in the univariate analyses. The presence of TRPG >55 mmHg (HR 1.8 95% CI 1–2.9; P = .05) and LA/Ao > 1.7 (HR 2.95% CI 1.2–3.4; P = .01) remained significant predictors of worse outcome in the multivariate analysis.

CONCLUSIONS AND CLINICAL IMPORTANCE In dogs with MMVD, moderate to severe PH worsens outcome.

Attempts to Induce Nocardioform Placentitis (Crossiela equi) Experimentally in Mares


REASONS FOR PERFORMING STUDY Nocardioform placentitis in horses is poorly understood, and the development of an experimental model would be of help in understanding the pathogenesis of the disease.

OBJECTIVES To investigate whether (1) intrauterine inoculation of Crossiela equi during the periovulatory period or (2) i.v., oral or intranasopharyngeal inoculation of C. equi during midgestation would result in nocardioform placentitis, and (3) before and after mating endometrial swabs present evidence of nocardioform placentitis-associated organisms (C. equi or Amycolatopsis spp.).

METHODS IN STUDY I, mares (n = 20) received an intrauterine inoculation of C. equi 24 h after artificial insemination. Endometrial swabs were obtained 24 h post inoculation for PCR analysis. In Study II, pregnant mares (at 180–240 days of gestation) were inoculated with C. equi by intranasopharyngeal (n = 5), oral (n = 4) or i.v. (n = 4) routes. Sixty contemporaneous pregnant mares maintained on the same farm served as control animals. In Study III, privately owned Thoroughbred mares (n = 200) had endometrial swabs collected before and within 24–48 h after mating for detection of nocardioform microorganisms.

RESULTS IN STUDY I, C. equi was identified by PCR in 3 of 20 mares following intrauterine inoculation. Pregnancy was established in 19 of 20 treated mares. There were 2 embryonic losses and one abortion at 177 days of gestation (undetermined cause). Sixteen mares delivered a normal foal and placenta. In Study II, one mare (oral inoculation) aborted at 200 days of gestation (unidentified cause). The remaining mares delivered a normal foal and placenta. In Study III, none of the mares yielded positive endometrial PCR for nocardioform microorganisms.

CONCLUSIONS We were unable to induce nocardioform placentitis, and there was no evidence of nocardioform microorganisms in endometrial swabs of broodmares before or after mating. These findings suggest that nocardioform placentitis is not induced simply via the presence of nocardioform actinomycetes and that route, insufficient duration of exposure and dose may play a role in the development of disease. Additional predispositions may also be involved in the development of nocardioform placentitis.
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Identification and Characterization of Serogroup M Dichelobacter Nodosus from Sheep with Virulent Footrot
Dhungyel, O., Schiller, N. and Whittington, R.
Veterinary Microbiology, 176:378-381 (2015)

As part of an outbreak-specific footrot vaccination field trial a total of 1282 footrot lesion samples were collected from 2 sheep flocks on King Island, Tasmania. Breeding rams were shared between the two flocks, suggesting a common source of infection. All samples were tested for Dichelobacter nodosus. A total of 1047 D. nodosus isolates were obtained in pure culture (490 from 670 lesion samples from flock 1, and 557 from 612 lesion samples from flock 2) were tested by agglutination and PCR tests for the 9 common Australian serogroups A to I. After the first rounds of a specific vaccination program, a significant proportion of the isolates of D. nodosus from these flocks were found to be negative in the serogrouping tests and the prevalence of the disease remained high in both. Those isolates were tested retrospectively against New Zealand and Nepal serogroup M antisera and found to be positive. Fimbrial gene (fimA) sequences of three isolates collected over three years were identical indicating that these strains belonged to one serogroup and were most closely related to New Zealand and Nepal serogroup M sequences. More than 40% of the D. nodosus isolates from these flocks belonged to serogroup M and were virulent in tests for protease activity. The next most prevalent serogroup was A (23%). This study reports the identification and characterization of serogroup M isolates of D. nodosus from Australia, and led to routine testing for serogroup M in flocks where specific vaccination will be applied for control, 1.7:1). No potential triggering factors or effective treatments were reported.

RESULTS Three hundred and five surveys and 70 videos were received; 27 horses were confirmed shivering (50 controls), 67 were suspected shivering and the rest had a variety of other movement disorders. Suspected shivering horses resembled confirmed shivering cases, except that the suspected shivering group contained fewer draught breeds and fewer horses with exercise intolerance. Confirmed shivering signs often began at <5 years of age and progressed in 34% of cases. Owner-reported additional clinical signs in confirmed cases included muscle twitching (45%), muscle atrophy (44%), reduced strength (33%) and exercise intolerance (33%). Shivering horses were significantly taller (confirmed shivering, mean 173 cm; control horses, 163 cm) with a higher male:female ratio (confirmed shivering, 3.2:1 vs. control, 1.7:1). No potential triggering factors or effective treatments were reported.

CONCLUSIONS Shivering is a chronic, often gradually progressive movement disorder that usually begins before 7 years of age and has a higher prevalence in tall male horses.

Epidemiology of Shivering (Shivers) in Horses
Draper, A.C.E., Bender, J.B., Firshman, A.M., Baird, J.D., Reed, S., Mayhew, I.G. and Valberg, S.J.

REASONS FOR PERFORMING STUDY Investigating the epidemiology of shivering in horses.
OBJECTIVES The purpose of this study was to characterise the signalment, clinical signs and management factors associated with shivering (also known as shivers), a relatively rare, poorly defined movement disorder in horses.
STUDY DESIGN Web-based case series survey and case–control study. Methods A Web-based survey was used to obtain information from owners, worldwide, who suspected that their horse had shivering. Survey respondents were asked to answer standardised questions and to provide a video of the horse. Authors reviewed the surveys and videos, and horses were diagnosed with shivering if they displayed normal forward walking, with difficulty during manual lifting of the hoof and backward walking due to hyperextension or hyperextension of the pelvic limbs. Cases confirmed by video were designated ‘confirmed shivering’, while those with compatible clinical signs but lacking video confirmation were designated ‘suspected shivering’. Owners of confirmed shivering horses were asked to provide information on 2 horses without signs of shivering (control group).

RESULTS Three hundred and five surveys and 70 videos were received; 27 horses were confirmed shivering (50 controls), 67 were suspected shivering and the rest had a variety of other movement disorders. Suspected shivering horses resembled confirmed shivering cases, except that the suspected shivering group contained fewer draught breeds and fewer horses with exercise intolerance. Confirmed shivering signs often began at <5 years of age and progressed in 34% of cases. Owner-reported additional clinical signs in confirmed cases included muscle twitching (45%), muscle atrophy (44%), reduced strength (33%) and exercise intolerance (33%). Shivering horses were significantly taller (confirmed shivering, mean 173 cm; control horses, 163 cm) with a higher male:female ratio (confirmed shivering, 3.2:1 vs. control, 1.7:1). No potential triggering factors or effective treatments were reported.

CONCLUSIONS Shivering is a chronic, often gradually progressive movement disorder that usually begins before 7 years of age and has a higher prevalence in tall male horses.

Outcome of Palmar/Plantar Digital Neurectomy in Horses with Foot Pain Evaluated with Magnetic Resonance Imaging: 50 Cases (2005–2011)

REASONS FOR PERFORMING STUDY There is limited knowledge of the foot lesions that influence the outcome of palmar/plantar digital neurectomy (PDN).
OBJECTIVES 1) To report the short- and long-term outcomes of horses that underwent PDN to alleviate chronic foot pain due to lesions diagnosed by magnetic resonance imaging (MRI) and 2) factors that may
influence the outcome of PDN. Study design Multicentre retrospective study.

METHODS Medical records of 50 horses subjected to PDN due to chronic foot pain were reviewed. Age, breed, sex, athletic activity, duration of lameness, affected limb(s), response to anaesthesia of the palmar/plantar digital nerves, MRI findings and surgical technique were analysed together with follow-up data to identify factors that influenced the long-term outcomes.

RESULTS Forty-six of 50 horses (92%) responded positively to surgery; 40 (80%) were able to return to their previous athletic use for a median time of 20 months (range: 12–72 months). Eighteen (36%) horses developed post operative complications including residual lameness, painful neuromas, or early recurrence of lameness. Horses with pre-existing core or linear lesions of the deep digital flexor tendon (DDFT) had significantly shorter periods of lameness resolution after surgery than horses with dorsal border lesions of the DDFT or other foot lesions.

CONCLUSIONS Palmar/plantar digital neurectomy can improve or resolve lameness in horses with foot pain unresponsive to medical therapy without serious post operative complications. However, horses with core or linear lesions of the DDFT should not be subjected to PDN as these horses experience residual lameness or early recurrent lameness after surgery. Magnetic resonance imaging can be used to identify these horses.

Performance of a Real-Time Pcr Assay in Routine Bovine Mastitis Diagnostics Compared with in-Depth Conventional Culture
Hiiitiö, H., Riva, R., Autio, T., Pohjanvirta, T., Holopainen, J., Pyöräälä, S. and Pelkonen, S.

Reliable identification of the aetiological agent is crucial in mastitis diagnostics. Real-time PCR is a fast, automated tool for detecting the most common udder pathogens directly from milk. In this study aseptically taken quarter milk samples were analysed with a real-time PCR assay (Thermo Scientific PathoProof Mastitis Complete-12 Kit, Thermo Fisher Scientific Ltd.) and by semi-quantitative, in-depth bacteriological culture (BC). The aim of the study was to evaluate the diagnostic performance of the real-time PCR assay in routine use. A total of 294 quarter milk samples from routine mastitis cases were cultured in the national reference laboratory of Finland and examined with real-time PCR. With BC, 251 out of 294 (85-7%) of the milk samples had at least one colony on the plate and 38 samples were considered contaminated. In the PCR mastitis assay, DNA of target species was amplified in 244 samples out of 294 (83-0%). The most common bacterial species detected in the samples, irrespective of the diagnostic method, was the coagulase negative staphylococci (CNS) group (later referred as Staphylococcus spp.) followed by Staphylococcus aureus. Sensitivity (Se) and specificity (Sp) for the PCR assay to provide a positive Staph. aureus result was 97-0 and 95-8% compared with BC. For Staphylococcus spp., the corresponding figures were 86-7 and 75-4%. Our results imply that PCR performed well as a diagnostic tool to detect Staph. aureus but may be too nonspecific for Staphylococcus spp. in routine use with the current cut-off Ct value (37-0). Using PCR as the only microbiological method for mastitis diagnostics, clinical relevance of the results should be carefully considered before further decisions, for instance antimicrobial treatment, especially when minor pathogens with low amount of DNA have been detected. Introducing the concept of contaminated samples should also be considered.

Three-Year Duration of Immunity for Feline Herpesvirus and Calicivirus Evaluated in a Controlled Vaccination-Challenge Laboratory Trial
Jas, D., Frances-Duvert, V., Vernes, D., Guigal, P.-M. and Poulet, H.
Veterinary Microbiology, 177:123-131 (2015)

Feline vaccination guidelines recommend less frequent boosters for the core vaccines (rhinotracheitis, calicivirus and infectious panleucopenia). Most guidelines recommend boosters at 3-yearly intervals after a basic vaccination including primary vaccination and revaccination one year later. The objective of this study was to assess the duration of immunity induced by PUREVAX® RCPCh FeLV, a non-adjuvanted vaccine against feline rhinotracheitis, calicivirus, infectious panleucopenia, chlamydiosis and leukemia. After primary vaccination followed by revaccination one year later with a vaccine formulated at minimum dose, the cats were kept in a confined environment and challenged 3 years later with a virulent heterologous strain of feline calicivirus (FCV) and subsequently a virulent strain of feline herpesvirus (FHV). Clinical signs and viral excretion were recorded for two weeks after each viral inoculation. Contemporary unvaccinated cats and new animals added at the time of challenge were used as controls. The vaccination regimen induced a stable and long-lasting humoral response. Vaccination resulted in a significant reduction in the severity of the disease after FHV challenge and in the frequency of cats showing a severe calicivirosis (defined as a combination of systemic clinical symptoms and oronasal ulcers). As opposed to the
significant reduction of excretion observed a few weeks after primo-vaccination or even one year after vaccination for FCV, viral shedding was not reduced 3 years after revaccination. This study showed that primary vaccination and revaccination one year later with PUREVAX® RCPCh FeLV was able to induce 3-year duration of immunity against FCV and FHV. The results and conclusion of this study are consistent with current vaccination guidelines and will allow the veterinarian to adapt the vaccination regimen to the way of life of the cat.

### Septic Sialoadenitis in Equids: A Retrospective Study of 18 Cases (1998–2010)

**Kilcoyne, I., Watson, J.L., Spier, S.J., Whitcomb, M.B. and Vaughan, B.**

*Equine Veterinary Journal, 47:54-59 (2015)*

**REASON FOR PERFORMING STUDY** Septic sialoadenitis, although uncommonly reported in equids, is a significant cause of pain, inappetence, dysphagia and discomfort. There are currently few reported cases possibly as a result of its infrequent occurrence.

**OBJECTIVES** To review cases presenting with sialoadenitis and describe the presenting complaints, results of diagnostic tests, treatment and outcome. Study design Retrospective case series.

**METHODS** Records were reviewed for equids presenting to the UC Davis William R. Pritchard Veterinary Medical Teaching Hospital between 1998 and 2010 for salivary gland swelling. Equids were included if a diagnosis of septic sialoadenitis was made based on a combination of oral examination and/or ultrasonographic findings and/or microbial culture. Data collected included age, breed, presenting complaints, diagnostic results, treatment and outcome.

**RESULTS** Eighteen equids were diagnosed with septic sialoadenitis affecting the parotid gland (11) or the mandibular salivary gland (7). Ultrasound was useful to differentiate whether the mandibular or parotid salivary gland was involved. Affected equids ranged in age from 4 to 30 years (mean 17.7 years). Fourteen of 15 (93.3%) equids that underwent a complete oral examination had dental or other oral abnormalities. Six of 18 cases had evidence of sialolithiasis. Culture of the infected salivary gland or secretions was performed in 9 equids and all yielded growth of Fusobacterium sp. along with other aerobic and anaerobic bacteria. Infection resolved in 15/18 cases (83.3%) and 2/18 (11.1%) were subjected to euthanasia.

**CONCLUSIONS** Dental disease and sialolith formation may play important roles in the development of septic sialoadenitis in equids. Anaerobic infection should be assumed in all cases and affected horses should be treated for this until culture and sensitivity results are available. Prognosis is favourable (83.3%) with appropriate treatment.

### Effect of Oral Administration of Cyclosporine on Toxoplasma Gondii Infection Status of Cats

**Lappin, M.R., VanLare, K.A., Seewald, W., Roycroft, L.M., Scorza, A.V., King, S. and Roberts, E.S.**

*American Journal of Veterinary Research, 76:351-357 (2015)*

**OBJECTIVE** To evaluate whether anti-inflammatory doses of cyclosporine activate Toxoplasma gondii in chronically infected cats or potentiate infection in cats exposed for the first time.

**ANIMALS** 30 T gondii?negative cats.

**PROCEDURES** Cats were assigned to 1 of 3 groups (10 cats/group). Group 1 (control) cats were administered a placebo for 126 days; group 2 cats were administered a placebo for 84 days, followed by cyclosporine at 7.5 mg/kg/d, PO, for 42 days; and group 3 cats were administered cyclosporine at 7.5 mg/kg/d, PO, for 126 days. Cats were orally inoculated with T gondii on day 42. Results for fecal flotations, PCR assays, and histologic examinations and IgM and IgG titers were analyzed. Cyclosporine concentrations were measured on selected days.

**RESULTS** All cats were infected by T gondii and developed signs of self-limiting gastrointestinal tract infection. Group 3 had the highest incidence and severity of CNS and pulmonary histopathologic findings typical of toxoplasmosis. One cat in group 3 died of systemic toxoplasmosis; that cat had a cyclosporine concentration of 1,690 ng/mL. Group 2 cats infected with T gondii before cyclosporine administration did not have repeated oocyst shedding. Group 3 cats shed fewer oocysts for a shorter time than did control cats of group 1.

**CONCLUSIONS AND CLINICAL RELEVANCE** Oral administration of cyclosporine in accordance with the protocol for this study did not potentiate the enteropathic phase of T gondii infection. Cats with high cyclosporine blood concentrations at the time of primary T gondii infection may be at risk of developing systemic toxoplasmosis.
Antiviral Effect of Mefloquine on Feline Calicivirus in Vitro
McDonagh, P., Sheehy, P.A., Fawcett, A. and Norris, J.M.
Veterinary Microbiology, 176:370-377 (2015)

Feline calicivirus (FCV) is an important viral pathogen of domestic cats causing clinical signs ranging from mild to severe oral ulceration or upper respiratory tract disease through to a severe fatal systemic disease. Current therapeutic options are limited, with no direct acting antivirals available for treatment. This study screened a panel of 19 compounds for potential antiviral activity against FCV strain F9 and recent field isolates in vitro. Using a resazurin-based cytopathic effect (CPE) inhibition assay, mefloquine demonstrated a marked inhibitory effect on FCV induced CPE, albeit with a relatively low selectivity index. Orthogonal assays confirmed inhibition of CPE was associated with a significant reduction in viral replication. Mefloquine exhibited a strong inhibitory effect against a panel of seven recent FCV isolates from Australia, with calculated IC50 values for the field isolates approximately 50% lower than against the reference strain FCV F9. In vitro combination therapy with recombinant feline interferon-ω, a biological response modifier currently registered for the treatment of FCV, demonstrated additive effects with a concurrent reduction in the IC50 of mefloquine. These results are the first report of antiviral effects of mefloquine against a calicivirus and support further in vitro and in vivo evaluation of this compound as an antiviral therapeutic for FCV.

Effect of Dantrolene Premedication on Various Cardiovascular and Biochemical Variables and the Recovery in Healthy Isoflurane-Anesthetized Horses
McKenzie, E.C., Di Concetto, S., Payton, M.E., Mandsager, R.E. and Arko, M.
American Journal of Veterinary Research, 76:293-301 (2015)

OBJECTIVE To determine the effect of dantrolene premedication on various cardiovascular and biochemical variables and recovery in isoflurane-anesthetized horses.

ANIMALS 6 healthy horses.

PROCEDURES Each horse was anesthetized twice with a 21- to 28-day washout period between anesthetic sessions. Food was not withheld from horses before either session. During each session, dantrolene (6 mg/kg in 2 L of water) or water (2 L) was administered via a nasogastric tube 1 hour before anesthesia was induced. Anesthesia was maintained with isoflurane for 90 minutes, during which blood gas analyses and lithium-dilution cardiac output (CO) measurements were obtained every 10 minutes. Serum creatine kinase activity was measured before and at 4, 8, and 12 hours after anesthesia.

RESULTS When horses were premedicated with dantrolene, CO at 25, 35, and 45 minutes after induction of anesthesia was significantly lower than that when horses were premedicated with water after which time difficulty in obtaining valid measurements suggested a continued decrease in CO; plasma potassium concentration progressively increased during anesthesia, whereas serum creatine kinase activity remained fairly stable and within reference limits through 12 hours after anesthesia; and 2 of 6 horses developed cardiac arrhythmias that required medical intervention. The quality of anesthetic recovery was slightly better when horses were premedicated with dantrolene versus water, although the time required for recovery did not differ significantly between treatments.

CONCLUSIONS AND CLINICAL RELEVANCE Results suggested that dantrolene premedication prevented muscle damage without affecting anesthetic recovery but impaired CO and precipitated hyperkalemia and cardiac arrhythmias in healthy isoflurane-anesthetized horses.

Diagnosis and Treatment of Intrathecal Tears of the Accessory Ligament of the Superficial Digital Flexor
Minshall, G.J. and Wright, I.M.

OBJECTIVES To investigate whether tearing of the accessory ligament of the superficial digital flexor (ALSDF) that communicate with the carpal sheath are not reported in the literature. The study describes ultrasonographic techniques for evaluation of the ALSDF and reports clinical, ultrasonographic and endoscopic features associated with intrathecal tears of the ligament.

REASONS FOR PERFORMING STUDY Tears of the accessory ligament of the superficial digital flexor (ALSDF) that communicate with the carpal sheath are not reported in the literature. The study describes ultrasonographic techniques for evaluation of the ALSDF and reports clinical, ultrasonographic and endoscopic features associated with intrathecal tears of the ligament.

METHODS Case records and diagnostic images of horses with ALSDF injuries were reviewed retrospectively, and follow-up information was obtained. Results Ultrasonographic examination using a combination of linear and curved array transducers identified 10 cases with intrathecal tears of the ALSDF. This was confirmed...
in 7 cases that underwent tenoscopy. Tears were consistently in the caudal ALSDF and in 3 cases exposed the median artery. Extruded torn fibres were removed. Of the 7 surgical cases, one horse returned to competitive work, one was back in full training, 2 were retired from racing but performing riding club activities, 2 were convalescing and one was lost to follow-up. Of the 3 cases that did not undergo surgery, one was subjected to euthanasia and the other 2 failed to return to training.

CONCLUSIONS Tears of the ALSDF can communicate with the carpal sheath, resulting in lameness and intrathecal haemorrhage. The latter appears to result from vessels that are primary branches of the median artery, and tears in the ALSDF can extend to this. These injuries are reliably predicted by multimodal ultrasonography, which also allows assessment of the proximity of tears to the median artery.

Effect of Chronic Administration of Phenobarbital, or Bromide, on Pharmacokinetics of Levetiracetam in Dogs with Epilepsy
Muñana, K.R., Nettifee-Osborne, J.A. and Papich, M.G.
Journal of Veterinary Internal Medicine, 29:614-619 (2015)

BACKGROUND Levetiracetam (LEV) is a common add-on antiepileptic drug (AED) in dogs with refractory seizures. Concurrent phenobarbital administration alters the disposition of LEV in healthy dogs.

HYPOTHESIS/OBJECTIVES To evaluate the pharmacokinetics of LEV in dogs with epilepsy when administered concurrently with conventional AEDs. Animals Eighteen client-owned dogs on maintenance treatment with LEV and phenobarbital (PB group, n = 6), LEV and bromide (BR group, n = 6) or LEV, phenobarbital and bromide (PB–BR group, n = 6).

METHODS Prospective pharmacokinetic study. Blood samples were collected at 0, 1, 2, 4, and 6 hours after LEV administration. Plasma LEV concentrations were determined by high-pressure liquid chromatography. To account for dose differences among dogs, LEV concentrations were normalized to the mean study dose (26.4 mg/kg). Pharmacokinetic analysis was performed on adjusted concentrations, using a noncompartmental method, and area-under-the-curve (AUC) calculated to the last measured time point.

RESULTS Compared to the PB and PB–BR groups, the BR group had significantly higher peak concentration (Cmax) (73.4 ± 24.0 versus 37.5 ± 13.7 and 26.5 ± 8.96 μg/mL, respectively, P < .001) and AUC (329 ± 114 versus 140 ± 64.7 and 98.7 ± 42.2 h·μg/mL, respectively, P < .001), and significantly lower clearance (CL/F) (71.8 ± 22.1 versus 187 ± 81.9 and 269 ± 127 mL/h/kg, respectively, P = .028).

CONCLUSIONS AND CLINICAL IMPORTANCE Concurrent administration of PB alone or in combination with bromide increases LEV clearance in epileptic dogs compared to concurrent administration of bromide alone. Dosage increases might be indicated when utilizing LEV as add-on treatment with phenobarbital in dogs.

Mannheimia haemolytica in Feedlot Cattle: Prevalence of Recovery and Associations with Antimicrobial Use, Resistance, and Health Outcomes
Journal of Veterinary Internal Medicine, 29:705-713 (2015)

BACKGROUND Mannheimia haemolytica is an important etiological agent in bovine respiratory disease.

OBJECTIVES Explore risk factors for recovery of susceptible and resistant M. haemolytica in feedlot cattle and explore associations with health outcomes.

ANIMALS Cattle (n = 5,498) from 4 feedlots sampled at arrival and later in feeding period.

METHODS Susceptibility of M. haemolytica isolates tested for 21 antimicrobials. Records of antimicrobial use and health events analyzed using multivariable regression.

RESULTS M. haemolytica recovered from 29% of cattle (1,596/5,498), 13.1% at arrival (95% CI, 12.3–14.1%), and 19.8% at second sampling (95% CI, 18.7–20.9%). Nearly half of study cattle received antimicrobial drugs (AMDs) parenterally, mostly as metaphylactic treatment at arrival. Individual parenteral AMD exposures were associated with decreased recovery of M. haemolytica (OR, 0.2; 95% CI, 0.02–1.2), whereas exposure in penmates was associated with increased recovery (OR, 1.5; 95% CI, 1.05–2.2). Most isolates were pan-susceptible (87.8%; 95% CI, 87.0–89.4%). AMD exposures were not associated with resistance to any single drug. Multiply-resistant isolates were rare (5.9%; 95% CI, 5.1–6.9%), but AMD exposures in pen mates were associated with increased odds of recovering multiply-resistant M. haemolytica (OR, 23.9; 95% CI, 8.4–68.3). Cattle positive for M. haemolytica on arrival were more likely to become ill within 10 days (OR, 1.7; 95% CI, 1.1–2.4).

CONCLUSIONS AND CLINICAL IMPORTANCE Resistance generally was rare in M. haemolytica. Antimicrobial drug exposures in penmates increased the risk of isolating susceptible and multiply-resistant M. haemolytica, a finding that could be explained by contagious spread.
Prostate Disease in the dog

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The prostate gland is the only secondary sex gland in the dog. It produces secretions to clean out the urethra of the male during copulation, aid in penetration of the bitch, and through the third fraction of the ejaculate ‘push’ and hold the semen in the uterus of the bitch. The prostate gland undergoes passive secretion during ejaculation of the first fraction and active secretion during ejaculation of the third fraction of the ejaculate. Disease of the prostate gland can be both detrimental to sperm quality and production and also detrimental in respect to the fertilising ability of ejaculated sperm. The prostate gland is believed to be a naturally evolving gland, which is designed to constantly enlarge with time. The third fraction is what is released during the ‘tie’ of the mating. The volume of prostate fluid produced by a male dog can range from 3-5 mL in toy breeds to 30-40 mL in large breeds.

Endocrinology
Testosterone produced by the Interstitial Cells of Leydig in the testicle under the influence of Luteinising Hormone (LH) is converted to Dihydrotestosterone (DHT) within the Sertoli Cells of the testicle by the enzyme 5α-Reductase. DHT is the active form of androgen at the intracellular level, it binds to androgen receptors with a two times higher binding affinity and 5 times lower dissociation rate than Testosterone. With age Testosterone can also be converted to Oestrogen by Aromatase. Oestrogen then has a direct effect to increase the number of DHT receptors in the prostate gland. 17β-Hydroxysteroidreductase (HSR) and 3α & 3β-Hydroxysteroidoxidase (HSO) can also result in the formation of DHT from Testosterone, while 3α & 3β-Hydroxysteroidreductase and 17β-Hydroxysteroidoxidase have an antagonistic effect.

This is important to remember in the use of 5α-reductase inhibitors.

Clinical Signs
Clinical signs of prostate disease includes lethargy, depression, dyschezia, stranguria, haematuria, lumbar spine pain, reluctance to mount, blood in the ejaculate, or failing to get a bitch pregnant. The prostate is located within the pelvic canal and when it becomes large it can fall off the cranial pelvic brim. The nerves which innervate the prostate exit from the lumbar spine and innervate the dorsal pelvis, so once the pelvis falls forward this tugs on the lumbar spinal cord segment causing intense lumbar spine pain.

Clinical Assessment
Digital Palpation
Accurate digital palpation of the prostate gland is difficult and in many cases impossible. Due to the location within the pelvic canal the caudal aspect of the pelvis may be palpable, but it is not possible to palpate the whole prostate rectally. Digital palpation is only useful for assessing pain within the prostate gland. Abdominal palpation may allow subjective assessment of the size and texture of the gland. Ultrasound examination will provide much more important information related to the size and consistency of the prostate.

Diseases of the Prostate
Benign Prostatic Hypertrophy (BPH)
The action of repetitive stimulation of the prostate with DHT results in a uniform and symmetrical enlargement of the prostate. The enlargement can become pathologic with signs of back pain, dyschezia, tenesmus, poor fertility and blood in the third fraction of the ejaculate. BPH can be managed well with medications avoiding the need to castrate the dog, allowing it to continue it’s stud career. Few changes are seen on prostatic fluid analysis, there may be some keratinised epithelial cells if there is an oestrogen influence and some intermittent inflammatory cells. Ultrasound examination will reveal uniform enlargement of the prostate.

Prostatitis
Prostatitis results when BPH goes untreated and it becomes infected. Neutrophils will dominate a prostatic fluid analysis and bacteria may be seen the sample can be sent for culture.

Prostatic Abscess
Prostatic abscesses can form on their own or as a sequelae to prostatitis. Cavitatory lesions will be evident on ultrasound examination.

Prostatic Cyst
Paraprostatic cysts are a remnant of the paramesonephric ducts (ducts that would form the uterus if the embryo were male), they will often present a young age with signs of abdominal discomfort and haematuria and or blood in the third fraction of the ejaculate. Cavitatory lesions will be seen on ultrasound examination.
Prostatic Carcinoma
Prostatic carcinoma is rare in the dog with a reported incidence of only 0.7%. Signs are consistent with enlargement of the prostate. Often haematuria is present.

Investigative Procedures
Ultrasound Examination
Ultrasound examination of the prostate provides for some very valuable information. Not only can the size be assessed, but the echogenicity, consistency, presence of cavitative lesions, presence of cysts and the presence of non uniform enlargement are the common findings on ultrasound examination. Initial ultrasound images and measurements are imperative in the assessment of the response of the prostate to therapies to reduce the size of the prostate.

Prostatic Fluid Analysis
Semen Collection and Assessment of 3rd Fraction
This is the gold standard for the assessment of the prostate in entire male dogs. It is a simple and cheap collection procedure. When collecting from the dog we know that the third fraction is from the prostate and not contaminated by urine or semen. We collect a reasonable amount of prostate fluid for the size of the dog, approximately 1 mL per kg up to around 15 mL total. The fluid is then spun in the centrifuge on high speed for 5 minutes, the supernatant removed, and a smear is made of the sediment. The slide is then stained using Diff Quick stains and dried for analysis under the microscope.

Prostatic Wash
Prostatic washes are performed in castrated dogs in which we want to investigate the prostate. Because this test is inferior to semen collection we would only perform this in entire males if we could not collect from the dog manually. When performing a prostatic wash the animal is anaesthetised, the bladder should be emptied by catheterisation, then the catheter is withdrawn to the level of the prostate and some saline flushed while someone else ‘massages’ the prostate. This test has many limitations, one of which is the inability to adequately massage the prostate digitally, the other is the difficulty of knowingly collecting prostate fluid/cells only and not collecting from the urethra or bladder which will confuse results. This test is inferior additionally as with semen collection the dog is actively contracting its prostate which means we know we are getting cells from deep within the gland for analysis; much better than a prostatic wash.

FNA v. Open Biopsy
FNA’s have been shown to be just as good for diagnosis of cell types present in the prostate as from open biopsies taken at surgery. For this reason it is preferable to take FNA samples for cytologic assessment under sedation and ultrasound guidance rather than performing surgery. It must be remembered to not perform an FNA if infection is present as it may seed peritonitis and caution as to dragging cancer cells along the needle line must be noted. Samples can be smeared onto microscope slides and stained for analysis with Diff Quick.

Exploratory Surgery
In some cases surgery is necessary for investigation, namely prostatic abscesses and cysts.

Treatment and Prognosis
BPH
Finasteride
Finasteride is a 5α-reductase inhibitor which prevents the formation of DHT from testosterone. Because testosterone levels remain high there is no negative effect on libido or sperm production. Used at 0.1mg/kg sid for a minimum of 2 months then alternating month therapy, the prostate will reduce in size whilst maintaining the fertility of the male. Continued daily long term will result in the formation of DHT from the pathways described earlier and impede the effectiveness of the drug. Finasteride is quite expensive, however there are cheaper generics now available.

Deslorelin
Deslorelin is a GnRH agonist. It binds reversibly to GnRH receptors in the pituitary, initially causing a surge release in Testosterone, followed a variable period of inhibited Testosterone production. Available in Australia in a guaranteed 6 month and guaranteed 12 month formulation, with their onset of action within 4-6 weeks of injection. By removing Testosterone influence continually for a 6 or 12 month period there will be a good reduction in the size of the prostate. Time for return of fertility is variable.

Progestagens
Medroxyprogesterone Acetate (MPA)
Inhibits Testosterone production by providing negative feedback on the Pituitary. The recommended dose for BPH is 3 mg/kg 4-6 weekly. The use of this drug is currently unfavourable due to the increase risk of side effects, notably diabetes. There is no effect on sperm production if used once.

Delmadinone
Tardak is safe to use as a one off injection in a breeding dog. Side effects of this drug are the same as MPA. The onset of action is very quick. We give a one off injection of Tardak at 2-3 mg/kg once to help reduce the size of the prostate while waiting for the Finasteride to work. If used for long term repeat after 2 weeks then monthly, however caution is advised due to long term side effects and reduced fertility.

Castration
Removal of the testicles removes the source of Testosterone and ultimately results in best resolution of BPH.
**Prostatitis**

**Antibiotics**
Prostate fluid is much more acidic than blood, this results in a blood prostate barrier. In order to penetrate the prostate antibiotics must be lipophilic and acidic. The only readily available antibiotics that will penetrate the prostate are Fluoroquinolones and Trimethoprim/Sulphonamide. Antibiotics usage should be based up culture and sensitivity results and their use should be for a minimum of 6 weeks.

**BPH**
It is important in cases of prostatitis to treat the underlying BPH as above.

**Prostatic Abscess**

**Antibiotics**
Usage as per prostatitis.

**Omentalisation**
Surgery is indicated to treat prostatitis. The abscess should be isolated opened, flushed and debrided. After flushing, the omentum is sutured through the abscess and the abscess closed. It is no longer believed to be beneficial to pass the omentum around the urethra, the presence of the omentum in the tissue is adequate to provide drainage and allow the abscess to heal.

**BPH**
Must be treated if concurrently present.

**Prostatic Cysts**

**Omentalisation**
Surgery as per prostatitis

**Prostatic Carcinoma**
Prostatic carcinoma is rare in the dog with an incidence of 0.7%. There is some evidence to suggest the risk of prostate cancer is higher with castration, however data quality and sample size is poor in thus far published papers.

It is well documented that by the time prostate cancer becomes clinically evident it has already spread, 1st to the sublumbar lymph nodes. The cancer is slowly progressive and poorly responsive to treatment with both surgery or chemotherapy. The use of NSAID’s in relation to blocking Cox-2 receptors may be beneficial and slow the progression of the malignancy.

**References**