

Equine dentistry

Part 1: The veterinarian's role, clinical signs, how dental problems emerge

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"The veterinarian consigns dental operations to others because it is rather beneath the dignity of the learned veterinarian to float the teeth of horses; not because it is difficult, tedious or dangerous, but because animal dentistry is regarded as a trifling accomplishment that the uneducated can master. The intimate relation of the condition of the teeth to the general health is becoming more and more recognized, and when the value and importance of veterinary dentistry is universally recognized by the veterinary profession and lay public, and when it becomes more generally admitted on all sides that the veterinary patient receives the same relative benefits from dental operations as the human subject, animal dentistry will then take its place among the useful branches of veterinary science ... The veterinarian will, therefore, be required to perfect himself in the practice of this art."

Sound familiar? Is this from some recent article? No. That quote – one of my favourites – is dated 1906.¹

Most early veterinary texts were devoted primarily to horse medicine due to our dependence upon them for transportation, industry and almost everything else – including warfare. These texts were largely, if not entirely, dedicated to dentistry. The longevity of horses was essential in this time, and thus dentistry was very important. Keeping horses has now become, for the most part, a leisure activity.

Veterinary texts of the late 1900s seem to have relegated dentistry to the background. Research and advances in equine dentistry have been minimal for the past several decades, possibly due to the "discovery" of advanced surgical and diagnostic techniques, plus the fact that dentistry was just plain hard work. I'm not about to say that modern dentistry is as easy as sitting down and reading *Vetscript*, but new advances in equine dental technology have made a terrific difference in the ease of performing dentistry of exceptional quality. Veterinary training in equine dentistry is available in Australia and will be again soon in New Zealand.

Recognising quality work: the veterinarian's role

So you don't want to do dentistry? Fine, you don't have to do it yourself! *You have a perfectly good equine floater you refer to?* Great! But do you know how good they really are? Some need improved training and may perform techniques that are not justified and can be deleterious to the health of the horse. A certificate alone tells one very little about quality work.

Unless we, as veterinarians, can recognise "quality" dentistry and what could stand improvement (or worse



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yet, what is "potentially damaging" dentistry), we aren't in any position to help our patients and clients.

Gary Wilson, consultant in veterinary dentistry to the University of Queensland School of Veterinary Science, states: "It is critical that the dentistry is performed by someone who is well trained and has an understanding of the health of the horse as a whole. Here the veterinarian who has undergone some advanced training in dentistry is the obvious choice. Most of the lay dental technicians are very poorly trained. Unfortunately, veterinarians will often collaborate with these technicians in the misguided [belief] that they know what they are doing. I (and many of my colleagues) can list multiple occasions where the 'leaders' in the lay technician area have created severe problems in horses that they have treated. Remember that when a veterinarian sedates a horse for these technicians, the veterinarian is legally responsible for any untoward outcomes from procedures performed, as the

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Explaining pathology to an interested owner.

technician is deemed to be acting under the supervision of the veterinarian.”²

This may or may not be the case in New Zealand. The New Zealand Equine Veterinary Association has created a consent form, available on its website, entitled “Veterinary Sedation for Equine Dental Procedures Carried out by Lay-Persons”. This is an attempt to limit the liability of the veterinarian sedating the horse for those untoward outcomes in cases where a veterinarian is sedating for a lay-person tooth floater.

Often we are asked to sedate horses for lay floaters. It behoves us, as the “experts” in equine medicine, to understand whether dental treatment being performed on a horse under our direct care (and therefore, our responsibility, however you look at it), is beneficial or damaging. Sadly, incidents of lay floaters performing poor to “potentially damaging” dental treatments with the horse under veterinary sedation in New Zealand are not merely theoretical.

Care needed with titles: “dentist” and “specialist” protected

The term “dentist” is a registered title under the Health Practitioners Competence Assurance Act 2003. In order to use this title, one would need to be a registered human dentist. This is why lay floaters can never be referred to as “equine dentists”. It is possible to use a title indicating an *interest* in dentistry such as “veterinarian with a particular interest in equine dentistry” or “equine dental technician with a particular interest in dentistry” or “equine dental technician”. This in no way implies that one is a *specialist* in equine dentistry, a title reserved for veterinarians who have completed the equivalent of at least a Fellowship in equine dentistry.

There is simply no reason for horses to salivate excessively for four hours, decline to eat for a day or more, have large swellings in the mouth, nor be in any form of serious discomfort after routine dentistry. Not all certificated training is equal. If someone seems overzealous in their dentistry work, do not hesitate to stop them and discuss the situation. If still in doubt, stop them and get a second opinion. Those of us trained in equine dentistry are happy to field phone calls! Floating, even including “rebalancing”, should take less than one hour. It should consist of removing sharp points, not making smooth molar tables which cannot grind food efficiently. The floated surfaces should *never* be pink or red after floating. If they were, this would indicate that the odontoblast processes of the pulp have been exposed and “pulp capping” may be necessary. **This is a serious situation.** After proper floating, regardless of any “realignment” involved, your patient should recover from any sedation promptly, looking for food and happy to eat.

So, now that we have opened that can of worms, where do we go from here? Recognising subtle forms of dental disease is the start. (Knowing what it is possible to do with pathology, and availability of dental education for those who wish to become proficient, will be covered next month in part two of this article.)



Aged mouth with overgrown and expired teeth with exposed dentin (yellow).

Clinical signs of dental disease

There are many signs your patients are having trouble in their mouths, many of which may strongly influence their performance. These include:

- pulling or “lugging” on the reins
- resisting turns or other evasion
- head tossing/shaking



Fragment of 309 and split 310 extracted from 22-year-old Standardbred gelding.

- unexplained subtle lameness (a good oral exam is essential in a lameness or a pre-purchase exam)
- mouthing/chewing the bit
- head tilt/playing with tongue
- sticking tongue out of mouth or over bit
- resisting bridling
- refusing to maintain frame or vertical head carriage
- cheeks sensitive to touch.

Some of these signs may be attributable to other causes (e.g., musculoskeletal or neurological), but it is relatively easy for someone well trained in veterinary dentistry to evaluate the mouth for dental disease which could cause these problems.

In the stable, some signs which may indicate dental disease include:

- quidding – dribbling or dropping hard feed, hay or grass
- excessive salivation
- foul odour from mouth
- head tilt while eating
- grain in water bucket
- playing with tongue
- whole grain or long (greater than 5 mm) hay particles in manure
- refusal to eat or eating slowly
- weight loss
- swellings along the bottom or side of the jaw or on the sides of the face between the eyes and the nostrils (eruption “bumps” or cysts)
- draining or discharging tracts (purulent, or pus) from above sites.

Considerations in the management of equine dentition

Horses begin their training at an age when teeth are lost and gained at a furious rate. Allowing for individual age variations, in the first year of life, 28–32 teeth erupt.

In the second year, 16 teeth erupt and 12 deciduous (“baby”) teeth are shed. In the third year, 12 erupt and eight are shed and in the fourth year, four to eight teeth erupt and four are shed. As the deciduous teeth loosen, they begin to pack food material beneath and their root remnants become very sharp. This makes eating or biting down painful, often resulting in reluctance to eat and consequential loss of condition. Imagine the distraction this provides to your young patients!

When deciduous teeth fail to shed after they have begun to loosen, they are termed “retained caps” and may create long-term discomfort for the horse. They may result in multiple teeth where they do not belong or eruption of permanent teeth along the wrong pathway, setting into action malocclusions (improper apposition of teeth). This can lead to lifelong problems, requiring more frequent than normal dental attention. Caps must not be removed before they are “ready”, as the structure of the underlying adult tooth may be damaged by premature exposure. This causes loss of blood supply to the still-forming cemental lake on the oral surface of the developing tooth. Not every horse read the book on the proper ages for shedding teeth, which is one reason why good training is needed by your practitioner of equine dentistry!

Dental problems commonly occur in one- to five-year-old horses and they should be monitored six monthly from birth to prevent major problems as the horse matures. These may include sharp points, cheek, lip or tongue ulcers from these points, overjet (parrot mouth)/overbite, underbite (undershot jaw, sow mouth), retained incisor or premolar caps, impaction of erupting incisors, presence of wolf teeth (not an abnormality, but may cause problems with biting), unerupted wolf teeth or canine teeth, impaction of erupting cheek teeth with eruption bumps evident and malocclusion from cap retention.



The 100 and 200 arcades inside a well-rinsed and illuminated mouth.

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Dental problems more common in mature horses also include gingivitis, tartar, periodontal disease, malocclusions, excessive transverse ridges, hooks, ramps, excessive crowns (overlong teeth), abnormal wear, wave or step mouth, fractured or chipped teeth, soft tissue injury from sharp teeth, loose and necrotic teeth with their accompanying constant pain, inflammation and entry of bacteria into the circulation.

There are also what some term “get a life” injuries: damage to teeth or the diastema (bars) of the mouth sustained from heavy handedness with a bit or other handling equipment causing ulcers, damaged teeth or osteomyelitis, with or without sequestrum formation.

Incisor imbalances usually occur secondary to cheek teeth problems. They are easy to observe from the front of the horse when you hold the head up to the level of your face. They include diagonals, absent or broken teeth, overgrown incisors (often opposite broken or missing teeth), dorsal curvatures (frowning), ventral curvature (smiling), overjet and overbite, all of which must be addressed when teeth are being floated. Some lay floaters believe that incisor “reductions” must be performed to “rebalance the mouth”. In grazing horses, the incisors rarely, if ever, overgrow to a point requiring this. Horses which have had this technique performed may be damaged for years or life.

- The second and final part of this article will be published in the June 2009 issue of *Vetscript*. In part two, Liz Thompson will look more closely at the origins of dental pathology in horses, preventative techniques and equipment, and equine veterinary dental education.

References

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Further reading

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