Report on the 19th Annual Veterinary Dental Forum and World Veterinary Dental Congress IX

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Firstly, I wish to thank the New Zealand Equine Research Foundation and all of its sponsors for the generous scholarship toward my attendance at the 19th Annual Veterinary Dental Forum in Orlando, Florida in October 2005. Hopefully, information gleaned will assist in the NZERF's efforts to up skill New Zealand veterinarians in the area of equine dentistry.
The forum began on the Thursday with a review and assessment examination for those working toward advanced certification, which was followed by the Annual Meetings of the three veterinary dental societies represented at the conference, the Academy of Veterinary Dentistry, the American Veterinary Dental society and the American Veterinary Dental College. Opening reception in the trade show exhibit area provided fantastic nibbles and representatives from over 48 companies, featuring anything dental imaginable, from a tiny miniature horse mouth speculum to a fully portable, horse-side digital radiology setup for a cool 32 K, USD (without the extras, of course!). I couldn't quite manage the digital radiology machine, but took home the speculum… only to find that it was made in Australia!

With 68 international speakers giving 98 lectures and 22 labs over the four days, selection was challenging!

Friday morning attendance at the Emergency Dentistry and Trauma lab, taught by Dr. Loic Legendre found us discussing concerns of immediate care and stabilization followed by examination of canine cadaver heads for fractures, taking digital intraoral (films inside mouth, as most commonly seen in human dentistry) as well as extraoral radiographs and repairing fractures with surgical wire and acrylics or composite resins.

After the fantastic buffet lunch which greeted the participants daily in the trade show exhibit area, Drs. Bob Wiggs and S. Ruth spoke on Tooth Development and Malformations. Various types of abnormalities are common and range from insignificant to serious in terms of dental, oral or even general health. Many abnormalities were covered, including details under the general categories of abnormalities of form, size, shape and number of teeth as well as conditions causing mottling of teeth. They compared and contrasted various conditions which affect tooth

development, their proposed causes (disease, toxicity, mineral deficiency, developmental or genetic problems) and potential outcomes. For example, rickets or hypocalcemia causes a decrease in enamel *quality*, causing a mottled and pitted enamel surface, while a condition called enamel hypoplasia results in a decreased *quantity or thickness* of the enamel. They also cautioned about the difficulty of differentiating between many abnormalities of development which are hereditary (and therefore may be inherited) vs. simply congenital, a subject of interest to many clients!

Dr. Edward Eisner next spoke on Occlusal Evaluation, Advise and Therapy, from the perspective of one involved with dog breeding and showing clientele. He discussed some conditions known specifically to be caused by genetics, such as missing teeth, supernumerary (extra) teeth, misalignment of teeth and oral structures, narrow mandibles (jaws), class I, II and III malocclusions and head shape affecting dentition, among others. Dr. Eisner stressed that the position he would prefer veterinarians to take is that of providing sound breeding advice regarding genetic challenges in the animals to be mated so that their offspring have good oral health without requiring our professional intervention.

In the final lecture of the day, Dr. Daniel Carmichael presented an excellent review of dental extractions, complete with several little known hot tips, including one for those terrible times when root tips fracture while still embedded in the skull. He discussed surgical and nonsurgical extractions and the rationale for pre- and post-operative analgesia and intraoperative nerve blocks (to deaden the nerves in the extraction region), pre and post-operative radiographs and antibiotic therapy. He also stressed the need for rechecks to ensure proper healing has occurred.

That evening, the Dental Movie Night, a hilarious combination of dental excerpts from old movies plus new movies made at home by forum delegates and Karaoke saw the more gregarious of the lot let their hair down! Night was complete with popcorn and other munchies one usually finds (or wishes one would find!) in a movie theatre!

The Saturday morning Equine Session, chaired by Drs. Randi Brannan and David Klugh began with our own Dr. Ian Dacre wowing us with his spectacular electron micrographs as he spoke on the Pathogenesis of Apical Diseases. He discussed a study he performed with Dr. Paddy Dixon wherein of 400 horses referred for dental treatment, 87% were found to have cheek teeth disorders with 41% suffering from ‘primary’

cheek tooth apical abscess formation. Some of the remaining cases had developed apical abscesses secondary to their primary dental disorder. Dr. Dacre discussed that as younger horses (between 5 and 7 years old), are the ones most frequently affected with apical infection, and as the disease usually results in infection of the adjacent bones of the face, apical infections are of major clinical significance., In discussing the proposed aetiopathogenesis (cause) of apical infections in the horse, Dr.Dacre noted that while apical infections due to infundibular caries ("cavities") and periodontal disease are rare, those resulting from exposure of the pulp or via haematogenous (through blood) or retrograde local lymphatic spread are common. Pulp exposure may be due to fracture, trauma, imbalance between the normal rates of eruption and dental attrition or faster attrition of the tooth than development of the secondary dentine (dietary / poor health?). Trauma may include fractures, or pulp exposure whilst undergoing dental treatment. From his experience, it was Dr. Dacre's opinion that pulp exposure is more frequently present in horses with a history of being "rescued" from circumstances where their dietary calcium intake may have been inadequate, than in horses from the general horse population.

Dr Fred Farragalla next presented a highly visual talk on Recognition of Atypical abnormalities. He noted the importance of thorough patient histories, comprehensive-manual and visual examinations and other supportive diagnostic aids such as radiographs and laboratory analysis where indicated. He believes that we can help our patients most by addressing the caudal (back) ½ of the mouth and that there are at least 44 reasons to properly examine the mouth of every horse… (There are potentially 44 teeth per mouth!).

Dr. Michael Lowder presented: Equine Open Mouth Radiographs. Diagnosing equine dental disease often requires skull radiographs and a new method of taking radiographs of the head of horse with an open mouth was discussed, employing the use of PVC pipe. Guidelines for alteration of technique for exposure or evaluation of different portions of the teeth or supporting structures were detailed.

Dr. Jane Quandt discussed The Art and Science of Sedation. In this highly technical yet practical talk, she discussed new and not so new pharmaceuticals and combinations which are highly effective for standing sedation and analgesia. She discussed how the equine dental patient requires sedation for a complete oral exam and to allow for dental procedures to be accomplished. She noted that working in a calm and

quiet environment will enhance the sedative drugs actions as an excitable animal may be minimally responsive or over ride the effects of sedation.

Dr. Randi Brannan, in her highly detailed talk on Restorative Materials in Equine Dentistry, discussed goals of restoration, including protection of vital pulp, normalization of mastication (chewing) function, arresting decay and prevention of complications such as tooth fracture. She discussed the different types of restorative materials useful in the equine patient, noting that currently, bonded composite resins and glass ionomers are especially useful. An example of use is in a condition called cemental hypoplasia or secondary infundibular decay of the molars or premolars, where the infundibulum is not always completely filled with cementum. The resulting large cavity in the occlusal surface of the crown traps food that ferments and produces acid byproducts that destroy the enamel lining the infundibulum.. The likely results are endodontic disease from pulp exposure and the loss of inherent strength of the tooth making it more prone to fracture. A bonded composite restoration placed in this compromised structure lends support to the tooth and may prolong the life and use of the tooth. Another application for composite resins is the restoration of the crown of a fractured incisor. By restoring the incisor crown, the tooth may remain in occlusion with the opposite tooth and as it erupts it can be equilibrated ("floated") with the rest of the incisors.

Dr David Klugh, my mentor, spoke on Taking Intraoral Radiographs with vinyl intraoral cassettes containing standard enhancing screens. Certain images of equine cheek teeth are best obtained with intraoral projections. This includes images of the clinical crown and of occlusally oriented periodontal structures. Dr. Klugh discussed the Bisecting Angle Technique in detail, which gives the appropriate angulation for radiographing the teeth and can be easily modified for the age of the horse. He also discussed appropriate sedation and analgesia techniques for use with intraoral radiography.

Dr. Ian Dacre again spoke to us, this time on Dentistry and Diet- Where are we Now?
He discussed how modern equine management and feeding in the developed world result in reduced wear of the teeth from decreased chewing, together with decreased
lateral excursion of cheek teeth (sideways movement of jaw), when horses are fed a diet high in concentrates and not living on grass, resulting in increased formation of sharp dental

overgrowths. He discussed that, although not yet specifically linked in the horse, evidence exists that nutritional odontodystrophies may occur as already established for other species.

Dr. Jack Easley, co-author of Equine Dentistry, spoke upon Equine Dentistry—Yesterday, Today and Tomorrow. With colourful historical stories and artwork, he discussed the history of veterinary dentistry, the position it holds in the world today and his opinions of where we should be heading for the future. He holds that as guardians of the horse, we should always act to protect the interests of the horse and its owner, and in so doing, we will ethically and competently meet the dental needs of our patients as well as the demands of their owners and trainers.

The Keynote Speaker of the conference, Dr. James Gutmann, the most highly recognised human endodontic specialist in America, followed with a highly informative and extremely impressive talk entitled Scientific Perspectives and Clinical Realities in the Delivery of Successful Endodontic Procedures. He showed excellent microscopic photographs which clearly illustrated his topic, which covered endodontic techniques, products utilised for maximal results and the reasons that these techniques sometimes fail. An excellent speaker and a fantastic end to the day.

Sunday began with the Equine Extraoral Radiography Laboratory , where participants were split into small groups to discuss various aspects of extraoral radiography and then practiced radiographing particular structures within the oral cavity utilizing rather impressive digital radiology systems, which were able to be developed immediately, computer-side in the same room. A fantastic practical session.

The afternoon was filled with the Equine Intraoral Radiography Laboratory, which followed a similar format, but utilised the newly produced equine intraoral flexible cassettes, which enable the practitioner to capture only the area under evaluation without the confusing overlay of the opposite arcade, sinuses and other parts of the skull. The immediate development of radiographs provided valuable and timely feedback. Practice in utilising the bisecting angle technique was invaluable for my understanding of this procedure.

The Forum closed after this lab closed at 5 pm. It was an incredibly rewarding experience and I hope that knowledge gleaned may assist other veterinarians in their pursuit of veterinary dental excellence! Hopefully many more New Zealand veterinarians are motivated to attend next year's Forum in Portland, Oregon! See you there!