Veterinary Dentistry: Its Origin and Recent History


by Kevin Easley

The practice of dental medicine has evolved into a broad based and far reaching profession. The art of dentistry exists as a unique web woven of innovative research, technological advancement, and influence from other professions, trades and disciplines. As one segment of the web is strengthened, so is the whole. We can easily identify the benefit of this type of information flow when it travels in one direction to improve our profession directly. What we might neglect to notice, however, is how the individual segments of our web reciprocally benefit. One example of this type of benefit can be seen in the growth and development of veterinary dentistry.

Dental medicine has historically reaped the benefits of research conducted with animal models. It is clear that many modern day procedures and medicines would not exist without the help of animal experimentation. Interestingly, as human dentistry has directly grown from this help, so has veterinary dentistry indirectly grown! This becomes increasingly important as we strive to improve our understanding of the oral similarities and differences evident between animals and man. As society places higher and higher value upon our pets, we realize that these improvements directly benefit the animals we live with and care for. It is not only prudent to monitor current advancements in this field, but it is also worthwhile to explore veterinary dentistry's beginnings. Understanding the history of its development can only strengthen our web. The following offers a description of the beginnings of veterinary dentistry and the recent history and advancement of the profession will be explored.

The majority of veterinary dentistry's early history evolved around the treatment and evaluation of the horse's dentition. Equine dentistry was practiced by the Chinese as early as 600 B.C., and in times of trade the age of a horse was a major factor in the determination of its value. The most accurate and reliable way to certify the age of a horse was by the characteristics of its dentition. This practice of equine aging remained important to later cultures as well. The Greek culture improved on the method of aging horses and contributed information about tooth eruption periods in a horse's life. Simon of Athens wrote about the technique of aging horses and eruption periods of horse's teeth in "The Veterinary Art, Inspection of Horses." Aristotle even gave an account on periodontal disease in horses in his book, History of Animals (333 B.C.). As the Roman empire emerged, essays and manuscripts about animal dental science were written by several scholars who often copied the information from earlier Greek sources. Chiron derived a long manuscript which included many books detailing aspects of equine dentistry. Subjects ranged from descriptions of the overall dentition, to tumors of the jaw and diseases of the teeth. Another Roman writer known as Vegetius wrote about similar subjects in his manuscript titled "The Veterinary Art." This book was later translated into one of the first texts of veterinary dentistry.

Early veterinary dental treatment for dogs included surgical procedures to remove a part of the tongue called the lyssa. The removal of the lyssa was thought to aid in the prevention of rabies. The surgery was described during Roman times as follows: "It must be carried three times about the fire in order to be effective when given to someone bitten by a rabid dog. Take the worm (lyssa) from under a mad dog's tongue, leave them around a fig tree, then give them to him that hath been rent." Other accounts of canine dentistry are scarce as it is evident that little emphasis was placed on treating the dog during this early period.

With the arrival of the dark ages, knowledge and advancement in veterinary dentistry came to an abrupt halt. Some contribution was given by the Arabic culture around 1200 A.D. Abou Bekr wrote "The Naceri" which included information about dentition and dental procedures on horses. A large span of time passed with little new information, and much repetition of earlier practices. Further development did not come until the Renaissance period.

During the Renaissance, inventors and scientists such as Leonardo da Vinci and Ruini were just two of several contributors to the advancement of equine dentistry. Some advancements included surgical descriptions about how to cut the lip of a horse to better accommodate the bit. Contributions were also made in the techniques used during extraction procedures. Johannes Ruffus wrote "Equine Medicine," and other books were written which further described the horse's dentition. Ironically a distinct profession was still not evident during this time. Information was passed between horse traders, farmers, and commoners. Deception in the horse trading
business blossomed as owners learned how to alter their horse’s dentition to mimic the tooth shapes and characteristics of younger horses. This art of creative grinding became a crime in the realm of equine dentistry. Unfortunately, this type of change in veterinary dentistry was one of the few that carried over into the next era, as another long period of little advancement followed.4

The 1762 founding of the first veterinary dental school in Lyon, France proved to be the first step in the most recent movement and explosion of veterinary dental knowledge.2 The first veterinary dental text was published in 1889, and soon to follow were books published in 1905 and 1938.2 These books began to include techniques not only in equine dentistry, but in small animal dentistry as well. In Vienna, Joseph Bodingbauer proved to be a pioneer in small animal dentistry during the 1930’s. During this period, the focus of veterinary dental science shifted from horses to dogs, cats, and other small animals.2 In 1929 a series of detailed papers was provided by Arthur Mellenby which included information about the effects of dietary changes on developing dentition and dental diseases of canines. In the United States, movement in the field of small animal dentistry came much later. Donald Ross and the formation of the American Veterinary Dental Society in 1976 were both instrumental in spurring interest in the U.S. As more and more practitioners grew acquainted with this new field of veterinary medicine, an Academy of Veterinary Dentistry and the American Veterinary Dental College was formed in 1987.2

Amazingly, the most important and influential changes in veterinary dentistry have taken place in the last twenty years. Currently, veterinary dentistry is recognized as a specialty by the American Veterinary Medical Association. The American Veterinary Dental College is the governing organization for this specialty, and determines the guidelines and conditions for certification in the field:

“Specialty certification requires completing 3-5 years of training in the area of specialization beyond the Doctor of Veterinary Medicine degree. Requirements vary among individual ‘specialty colleges’ but all must pass advanced credential requirements approved by the AVMA. In addition to comprehensive training in his area of expertise, before being acknowledged as a specialist, a veterinarian must also publish original scientific articles and submit credentials of expertise to a review board in his specialty college. Following the acceptance of his credentials he/she must then successfully complete extensive written and practical examinations. When these requirements have been met, the applicant is then designated a "Board Certified Specialist" or "Diplomate" of the respective specialty college.”3

The Board Certified Specialist is trained to perform procedures such as periodontal surgery, root canal therapy, preventative dentistry, and even orthodontics! Demand for these services is currently on the rise.

Although early veterinary dentistry focused largely on equine dental care, accumulated knowledge of oral pathology, aging characteristics, etc. in other animals lead to an explosion in the practice of dental care for all patients served by the veterinarian. This information has helped humans and animals alike. We have been able to scientifically investigate such problems as the cause of caries and periodontal disease, the development of oral neoplasms, and many other dentally related subjects by confirmation via animal dental experimentation. As we have learned more about the disease processes in the human mouth, so have we learned about the same problems in the mouths of our pets and other animals.

While researching this topic I was lucky enough to benefit from an exchange in a clinical situation with a veterinary dentist. I was fortunate to participate in a periodontal procedure with the dentist, and during the procedure I was able to play an active role in the development of animal and human dental knowledge. As a dental student I was asked many questions, and was able to provide insight about the human dentition, the development of caries, and regular scaling and root planing techniques. This discussion opened both of our minds and allowed us to appreciate and think about variances in the process of decay and treating caries. My view and the veterinarian's view of our respective fields in those few minutes of talking were interestingly broadened and enhanced.

With the continual sharing of clinical and experimental knowledge in our unique web, and the recognition that each profession can learn from the other, the future practice of dentistry and veterinary dentistry can only improve. As we appreciate the history and development of our fields, we must realize that the techniques and wealth of information built up from this history have allowed us to arrive in an age of vast knowledge and technological advancement. It is in this realization that we must acknowledge the importance of continuing to share information for any hope for the further advancement of our profession's future.
References

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