

# Animal Dentistry



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## ABSTRACT:

Veterinary Dentistry is the field of Veterinary Sciences which is acquiring more importance. As the tooth structure and supporting structures of tooth is similar in humans and vets, so a dentist may venture into the field of Veterinary Dentistry. Scope of Dentistry has increased from scaling and extractions to more complex procedures, so a veterinarian cannot do justice as a dentist can do. Today Veterinary Dentistry can be counted as a challenging field indentistry as performing procedures on pets can be challenging considering the differences and similarities between humans and vets, probable risk factors, difficulty in handling vets, need to complete procedures in single sitting to avoid multiple anesthesia procedures, differences in drug dosage and monitoring, adequate precautions to be taken keeping in mind the possible zoonotic, viral and bacterial infections. Further, it is well known to us that the pets are commonly kept by rich people and they are generally ready to spend any amount on them. So, it may be considered as a worthwhile alternative of general dentistry

## INTRODUCTION

Veterinary dentistry is the field of dentistry applied to the care of animals (1). In recent years, dentistry has been touted as the fastest growing sub-specialty in veterinary medicine(2).The oral cavity, teeth and associated tissues are structures of fundamental importance for the health of all animals, both domestic and wild (3). Dental disease is very frequent in dogs and veterinary professional dental cleaning and examination, together with daily dental home care, is the foundation for good dental health(4)Radiography is a vital diagnostic tool in veterinary dentistry (5). A lot of pathology will remain undiscovered if clinical examination does not involve radiography(6).

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In the 1980s, a flow of interest in veterinary dentistry occurred world-wide. Before that time, some centers and practices in the United States and Europe practiced veterinary dentistry of relatively high standard. In the United States, more and more private practitioners devoted their time only to this specialty. They indorsed the demand for veterinary dental services by presenting continuing education courses to their colleagues, and by making the public aware of the importance of their pets' oral health (7).

Veterinary dentistry is a demanding science, in which decisions are made not only for an individual patient, but also for individual teeth, which may vary in severity of disease.

Some animals have dental workers, such as equine dental technicians , who conduct routine work on horses. oral disease, is one of the most common diseases seen in dogs and cats (8). It is caused by the forming of various anaerobic bacteria in the mouth which forms plaque, eventually hardening into tartar on the teeth along the gum line, and is related to the development of gingivitis(9). Domestic animals and horses with dental problems should be referred to dental veterinarians.(10) a degree in veterinary medicine is a prerequisite for performing dental procedures in animals.(11) Concepts such as oral-health veterinarian and dental care technician will be part of animal dental care in the future.(12)When determining on the plan of treatment, veterinarians should pay attention to the symptoms, examination, and pain response Veterinary dentistry has evolved to the point that consumers now demand and expect the best oral health care possible for their pets.(13) The gold standard is an attainable goal for all veterinary practices that provide oral health Veterinary standard of care is peer-regulated, measured as the level of care provided and acceptable among most veterinary care(14)

## DEFINITION

Veterinary dentistry is the arena of dentistry applied to the care of animals. It is the art and science of prevention, diagnosis, and treatment of conditions, diseases of the oral cavity, the maxillo-facial region, and its associated structures as it relates to animals. (1)

## COMMON ORAL HEALTH ISSUES

### Periodontal Disease

Infection that damages the tissue and bones that support dogs' and cats' teeth. It starts as immune reaction to plaque (called gingivitis) but then will progress to major inflammation (called periodontitis), pain and bone loss. If left untreated, periodontal disease may also affect vital organs. (18)

### Tooth Fractures

Tooth fractures can be complex, with pulp exposed, or uncomplicated, without pulp exposure. Fractures are painful and direct pulp exposure will become infected. Both types of

fractures should be treated immediately. May exhibit plaque and calculus , gingival recession, mobile teeth, excessive salivation, chewing difficulties and halitosis. However, note that these symptoms are a late sign (18) , minimally invasive repair techniques are chosen whenever possible(19)

## Tooth Resorption

Cats are susceptible to lesions that erode their teeth over time. Tooth resorption begins below the gum line and extends into the oral cavity. These lesions are excruciatingly painful, but most pets will not show physical signs; therefore, this issue is often unnoticed without an exam under anesthesia combined with dental X-rays.(18)

## Caries

We must watch for areas at risk or already undergoing decay and recommend such preventive or restorative treatments . Oral Cavity should form part of every physical examination. They can occur in the pits sometimes found on the occlusal tables of the molars. Other locations at risk are the deep developmental grooves on the buccal surface of the maxillary 4th premolars and on the lingual side of the mandibular 1st molars between the mesial and central cusp. These grooves are often filled with calculus, but on deep exploration, there may be soft, carious dentin at the base. For caries, the decayed enamel and dentin and all debris are removed from the lesion. Intraoral dental radiographs are required to determine if there are any signs of endodontic disease. The depth of the lesion needs to be examined and explored if there is pulp exposure or near pulp exposure. Endodontic (root canal) therapy is performed if there is indication. (1) When dental decay is advanced, extraction of the affected tooth is done (17).

## PREVENTION AND CARE

Successful treatment and prevention of periodontal disease in animals requires a multidimensional approach to identify and remove exacerbating factors, provide professional examinations and care, and plan and implement a dental program. Over the years, many therapeutic and preventive interventions have been developed for periodontal disease, but evidence of efficacy is highly variable. (16)

## EXTRACTION

many techniques have been developed to extract teeth in different animal species regularly seen in veterinary practice. Many of these techniques have a lot of familiarity with human extraction techniques, whereas others are species specific treatments. In dogs, simple extraction can be used for removing of all incisors, and for the 1st premolar and 3rd molar, whereas in cats it can be used for removing of the upper 2nd premolar and upper 1st molar, depending on the periodontal health . However, several authors recommend the use of surgical extraction techniques in cats because of the fragile nature of their teeth and because the increased chance of root ankylosis .

Closed extraction is the usual technique for oral extraction of cheek teeth in horses. The incisors of rabbits and rodents can be readily extracted using with closed technique. In pet animals, the use of elevators as well as luxators of appropriate size has been described, although scalpel blades have also been used for the same purpose. The shape of the 'Crossley luxator' has been specifically developed to break down the periodontal ligament of incisors and cheek teeth in rodents. (1)

#### DENTAL CLEANING

dental scaling is a very important part of keeping your patients' mouths healthy, but many technicians are not aware of the most effective way to perform scaling.

professional dental cleaning includes a complete oral assessment, supra- and subgingival scaling (ultrasonic and/or hand-scaling), polishing, dental radiographs, and formulating treatment plan. The procedure should be performed under general anesthesia with the animal intubated (endotracheal tube), and connected to an anesthetic circle, enabling a thorough cleaning (subgingival as well as supragingival) and dental examination while reducing the risk of debris and aerosol entering the airways. (4) The removal of supra- and sub-gingival plaque is done by a combination of mechanical scaling and hand scaling. (15)

#### VETERINARY EDUCATION

As recently as the 1990's, veterinary curriculums contained little dental training. Primary areas of focus are client education, the treatment of periodontal disease, dental prophylaxis, dental radiology, endodontics and pain control. Students receive instruction followed by laboratory training and finally clinical experience. Dental anatomy is incorporated into the first year curriculum. third year students participate in a laboratory covering extraction techniques, intra-oral radiology and pain management. Concepts and techniques are reinforced during a six-week general clinical rotation designed to simulate a private small animal practice in which dental procedures play a crucial role. In addition to routine practice procedures, students are exposed to more advanced techniques by referral cases. A two-week elective course in veterinary dentistry is selected during the fourth year. Students receive more intense hands-on training in routine and intermediate diagnostic procedures and treatments. (2)

#### VETERINARY DENTAL ORGANIZATIONS

Three main organizations are there to assist in the training and delivery of veterinary dental education and services. The American Veterinary Dental Society (AVDS) is a membership-based organization for veterinary dental specialists as well as DVM practitioners. Specialty certification is awarded by successful completion of a residency and extensive examination process through the American Veterinary Dental College (AVDC). A veterinarian can also achieve Fellowship

status in the Academy of Veterinary Dentistry (AVD) by completing training and completing a qualifying examination. There are currently 100 boarded Diplomates of the AVDC and that same number of Fellows of the AVD. These three organizations have been instrumental in encouraging the growth and improvement of dentistry in veterinary medicine by sponsoring wet labs, equipment and providing support to programs.. (2)

#### ROLE OF VETERINARY TECHNICIANS

Veterinary technicians are the paraprofessionals of veterinary medicine. many private practices hire assistants and provide on-the-job training, many smaller private practices and most large practices and universities employ certified veterinary technicians. Technicians, much like their DVM counterparts, are seeking specialty certification. The National Association of Veterinary Technicians in America (NAVTA) is the main body for veterinary technician specialists, offering technician specialization in the area of veterinary dentistry as well as others. A qualified veterinary technician may enter a two year program stressing veterinary dentistry. After successful completion of 3000 or more hours of dental training, publication of case reports and other achievements, a candidate is allowed to sit for the qualifying examination conducted by the exam committee of the Academy of Veterinary Dental Technicians (AVDT). The technician must then maintain their credentials with the AVDT by continuing their education in dentistry through recertification processes provided by the AVDT. This requires a certain number of hours devoted to CE, lecture, labs, polishing and teaching. (2)

#### OCCUPATIONAL HEALTH HAZARDS IN VETERINARY DENTISTRY

Veterinary practices are unique that they bring humans into close contact with many different species of ill animals. Some of the zoonotic infection have occurred in veterinary personnel include: brucellosis, rabies exposure, animal bites, erysipelothrix infection, leptospirosis, salmonellosis, plague, MRSA, Dermatophysis, tuberculosis, toxoplasmosis, Q-fever. Animal related injuries because pathogens are found in the mouth of many species, animal bites will cause cellulitis, abscesses, sepsis, arthritis (on exposure to latex gloves, blood proteins, parasites) endocarditis, CNS infections, risk of occupational asthma. Routes of transmission may be aerosol, droplet spray, direct contact, indirect contact (fomites), through body fluids, contaminated tools or surface. (2)

#### Precautions:

1. Use of disposable articles such as bowls, , gowns.
2. Protective eyewear, gloves, facial protection, use of 0.12% chlorhexidine to reduce bacterial aerosolization during dental solution.
3. Barrier protection: Gloves should be worn during

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venipuncture of animals suspected with an infectious disease.

4. Disposable particulate respirator fits closely to face and are made to filter small particles.

#### CONCLUSION

Dentistry-related problems are the most common medical/surgical problem in daily small animal practice (1). Increasing outlooks of the pet-owning public with the recent advancements of training opportunities available for veterinary students, graduate DVMs and certified veterinary technicians make veterinary dentistry an emerging practice (2). Most dental emergencies follow general trauma. Treatment should be arranged and initial attention given to serious problems and complications. Good surgical principles of lavage, debridement, technique and tension-free closure (if appropriate) should be followed for all oral soft-tissue injuries.(5). A greater awareness of dental disease in the dog and cat among the veterinary practitioners and pet owners will greatly contribute to the early recognition and prevention of dental problems, in particular periodontal disease. This is crucial, because periodontal disease may have a serious impact on a pet's well-being and general health (7).

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