

Understanding Periodontal Disease and Treatment

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Oral disease is one of the most prevalent diseases in dogs and cats. Recent studies indicate that the prevalence is higher than previously reported 80% of adult dogs and 70% of adult cats having some form of oral disease. Dental problems are among the top three pet owners concerns in dogs and cats. Calculus and gingivitis are the most common conditions diagnosed by veterinarians in all ages of animals.

Why is the incidence of dental disease so high? Is it due to lack of compliance or the lack of educating the client about the importance of dentistry? Pet's living longer lives, is one reason that oral disease is more prevalent. We are already improving so many aspects of their lives, but dental care seems to still be lagging behind.

Companion animals have become an important part of our lives. Many people consider the pet a part of their family. This bond has been important to the veterinarian and his staff because clients are more readily interested in seeking care for their pets. It is essential that communication remains open between all parties. All members of the veterinary team must be excited and motivated and thus project that enthusiasm to the client. The veterinarian and his staff must educate the client about the need for dentistry and advise them of its importance. Statistics show that 25 percent of your clients will accept whatever you say immediately; another 60 percent will take a little time to accept your recommendations; the remaining 15 percent will not accept your suggestions.

It is necessary to communicate the importance of dental treatment and oral care in many ways. It should become as routine as vaccinations and heartworm testing in your clinics. Being aware of dental formulas, oral anatomy and pathology, as well as terminology is crucial to proper charting and diagnosis of the disease.

Dental Formulas:

Adult Dog $2x(3/3I, 1/1C, 4/4P, 2/3M) = 42$	Puppies $2x(3/3i, 1/1c, 3/3p) = 28$
Adult Cats $2x(3/3I, 1/1C, 3/2P, 1/1M) = 30$	Kittens $2x(3/3i, 1/1c, 3/2p) = 26$

It is imperative that individuals performing dentistry know the number of roots for each tooth.

It is important to be able to identify oral pathology and anomalies. It is equally important to correctly record the pathology on dental charts. A thorough dental examination includes both conscious and anesthetized examinations as well as charting disease processes, pathology and anomalies, and treatment plans.

Periodontal Disease is defined as an infectious disease caused by plaque and the resulting inflammatory response. Periodontal disease is present when plaque bacterial induced inflammation has affected the gingival and other tissues of the periodontium:

- Gingiva
- Periodontal Ligament
- Cementum
- Alveolar Bone

Gingivitis is any inflammation of the gingival tissue. It is preventable and reversible!!!! Undisturbed plaque can lead to gingivitis. Gingivitis is present prior to periodontal disease and is characterized by erythema and bleeding.

Plaque is the soft gelatinous matrix consisting of bacteria and bacterial by-products. Plaque starts with a biofilm and is usually clear to light yellow. You may need to use disclosing agents to visualize

Subgingival plaque can create destruction of the periodontium. As the plaque grows below the gumline, the bacteria morph into gram negative anaerobic bacteria. These black pigmented anaerobic bacteria species have been identified as:

Porphyromonas gulae
Porphyromonas salivosa
Porphyromonas denticanis

These bacteria produce and release inflammatory mediators and cytokines that activate neutrophils and release proteolytic enzymes.

All the factors result in destruction of the epithelial tissues which increase sulcus depth thus destroying the periodontal ligament and eventually the alveolar bone is destroyed.

Calculus is calcified plaque that is often blamed for causing periodontal disease. However the calculus may cause irritation and the roughened surface of the calculus gives more surface area for plaque to grow. The more calculus present the more plaque and vice versa.

Contributing factors for periodontal disease include:

Crowding
Deciduous teeth
Malocclusions
Diet
Trauma
Foreign Bodies
Genetic

Classification of Periodontal Disease

The degree of severity of periodontal disease relates to a single tooth; a patient may have teeth with different stages of periodontal disease. Diagnosis should be for the worst tooth in the mouth

Stage of Periodontal Disease:

The stages of periodontal disease can be used to help price your periodontal therapies but also need to be recorded so that the progression of disease can be determined. These stages are determined by either measuring clinical attachment level or radiographically.

- Stage 1 -Gingivitis only with attachment loss.
- Stage 2 - Less than 25% attachment loss. Grade 1 furcations present.
- Stage 3 - 25 to 50% attachment loss. Grade 2 furcations present
- Stage 4 - Over 50 % attachment loss. Grade 3 furcations present.

There can be multiple treatments of periodontal disease. Scaling & root planing (SRP) which includes subgingival cleaning could be the most important step in treatment by eliminating or reducing the amount of subgingival bacteria and toxic substances. Ultrasonic instruments are highly effective in the destruction of the bacteria.

Systemic antibiotics have been used for the treatment of periodontal disease but there is little to no evidence based guidelines for their use. Antibiotics do benefit some patients especially in addition to SRP in severe periodontitis. The bacteria must be able to treat anaerobic bacteria. Dosage and length of tx based on clinical judgment.

Additional treatments included Doxirobe or Clindoral for periodontal pockets greater than 5 mm.

Periodontal surgery is another option for treatment. Surgery should be considered for pockets greater then 5-6 mm, when Stage 2 & 3 furcations are present. This surgery involves a flap procedure to expose root surface, allowing for a more thorough cleaning and guided tissue regeneration.

For more severely affected teeth, extraction maybe the best chose for treatment.

Home Care is a vital part of periodontal treatment. All of the treatments listed above will temporary and may not be successful if the owner does not comply with home care instructions. Daily tooth brushing is the Gold Standard but not every individual is able to or willing to brush their pet's teeth. Investigate other, proven options for home care and follow up with clients on the success of the product. Schedule regular follow up appointments with clients to continually assess the status of the patients oral health.

References:

Available upon request.