It's Not Just A Gum Phase: Periodontal Disease Explained

Target audience: RDVMs

Talk Objectives:

1. Part I: Periodontal anatomy, pathophysiology, and oral findings on an awake examination.
2. Part II: How to diagnose periodontal disease in an anesthetized exam, including evaluating some relevant dental radiographs, and then covering treatment and preventative options that can be recommended.

Introduction:

Periodontal disease has a high prevalence in our companion animals. It is an insidious, progressive, subgingival disease, and often when noticed by owners, is already in more advanced disease stages. The periodontium includes 4 anatomical structures: the periodontal ligament (PDL), gingiva, alveolar bone and cementum. In the early stages, infection and inflammation (in response to plaque and bacteria) can lead to gingivitis. As periodontal disease progresses to the other structures, periodontitis can occur which can progress to attachment loss, gum recession, alveolar bone loss and tooth mobility. It is important to remind owners that gingivitis is reversible, however periodontitis is *not* reversible, and hence homecare and yearly dental cleanings under anesthesia are beneficial. Plaque is a sticky biofilm of bacteria and salivary glycoproteins, that forms in 24 hours. Bacteria in plaque produce acids after you eat or drink. These acids can destroy tooth enamel and cause gingivitis (gum disease) and in humans caries. Mineralization of plaque forms calculus (tartar) 48-72 hours after plaque forms. It is good to remember that amount of calculus itself is not the determinant of periodontal disease stages, and rather it is the amount of attachment loss of the tooth from the surrounding bone that determines the stage of disease. The calculus does however lead to a plaque retentive surface.

Clinical Signs:

Clinical signs may vary, however commonly include halitosis (bad breath), primarily chewing food on one side, difficulties picking up food or toys, pawing at the face or rubbing the face along the floor, reluctance to play, increased ptyalism, facial swellings, draining tracts or bleeding from the mouth or nose. Many patients also have no clinical signs or intermittent waxing and waning clinical signs. An absence of overt clinical signs does discount that the patient may still be uncomfortable or painful. True inappetence and anorexia is uncommon with periodontal disease. In these cases, other systemic diseases should be considered. Asking owners detailed questions about the patients eating habits, playing habits and any changes noticed in the mouth or head region (e.g. draining tracts, swelling, malodor, bleeding, difficulties yawning, etc) is important and should not be understated. Requesting a video of any pertinent clinical signs occurring at home, particularly signs occurring intermittently, can also be helpful at initial examination.

Awake Examination:
An extra-oral and intra-oral awake exam should be conducted at the initial consultation. Extra-oral examination includes palpating the periocular structures, noting any extra-oral draining tracts or swellings, palpating the facial lymph nodes and salivary glands, evaluating facial symmetry and eye position. Intra-oral examination includes evaluating the patient's occlusion, number and type of teeth present (deciduous, adult, supernumerary, missing teeth, etc.), periodontal evaluation (gingivitis, obvious gum recession, furcational exposure, tooth mobility, exposed root, etc), endodontic evaluation (any tooth discoloration, any fractured or abraded tooth exposing the pulp tissue, etc), oral soft tissue structures (any swelling, draining tracts, regions of inflamed mucosa/gingivitis, growths/masses, etc), and any other oral lesions (e.g. resorptive lesions, attrition, jaw fractures, TMJ pathology, etc). A detailed awake and then anesthetized examination, with a solid understanding of the underlying anatomy and oral diseases, allows for the veterinarian to form an accurate diagnosis and appropriately treat periodontal disease.

Anesthetized Examination:
A detailed anesthetized examination includes probing and charting each tooth, examining the soft tissue, and acquiring detailed dental imaging (full mouth dental radiographs +/- skull radiographs, 3D Cone Beam CT Scan, Conventional CT Scan). Occlusion should be evaluated prior to intubation. Probing of each tooth should be performed with a dental probe and explorer. Both buccal and lingual sides (including mesial and distal aspects) should be evaluated. Charting should incorporate details including missing teeth, gingival and calculus indexes, pocketing (in millimeters), gum recession (in millimeters), tooth mobility, furcation presence and staging, crowding between teeth, any obvious fractured teeth or abrasion/attrition, and any other abnormal findings. If excessive calculus is present on the teeth, performing a gross scaling of excess calculus can both aid the oral exam and visualization of the radiographs. Full mouth dental radiography is ideally performed in every patient to evaluate each tooth individually. Multiple views of a tooth can be taken, if needed, to remove superimposition and help determine pathology from normal anatomy. With our ever-evolving knowledge in other radiographic modalities to evaluate dental structures, if necessary (and available), 3D Cone Beam CT Scan and Conventional CT (+/- contrast) may be useful as well. Skull radiographs can evaluate bone structures in the head and neck region, however due to significant superimposition of maxillofacial structures, their use in veterinary dentistry is limited. Taking the time to perform each step methodically will allow for more accurate diagnosis and treatment.

Treatment and Preventative Options:
Treatment options vary depending on the stage of periodontal disease and the patients individual anatomy. Other considerations include if the owner is able and willing to pursue homecare, the patients systemic health, the client's financial budget for dental treatment,

the comfort level of the veterinarian offering the dental treatment, and if referral to a veterinary dentist is an option. Treatment should always include a supra- and sub-gingival scaling with a dental ultrasonic scaler and polishing to remove plaque and calculus. For early periodontally affected teeth, closed root planing with a placement of a periceutic for pocket treatment may be possible. For moderate to severe periodontally affected teeth, extractions or open root planing with periodontal surgery may be required. There are multiple considerations for which treatment option is the best for each patient.

There are many options for the prevention of periodontal disease in companion dogs and cats. The gold standard is daily tooth brushing, and if both the patient and client are willing, this has been shown to be the most effective plaque control method. Other options can include (but are not limited to) tooth pastes, water additives, dental diets, chews, treats, additives to food, dental sealants and oral rinses. Without homecare, the benefits of a professional cleaning are short lived. The veterinarians role in client education is very important to try and convey this and the significance of daily homecare alongside professional cleanings.

References on request at shatunen@veterinarydental.com

Cat-astrophic Mouths: Update and Review of Feline Chronic Gingivostomatitis

Target audience: RDVMs

Talk Objectives: This lecture is aimed at DVM's who are interested in refreshing their knowledge on feline chronic gingivostomatitis and ways to navigate this complex disease. The talk will cover common (and less common) clinical signs, diagnostics, treatment options, and prognosis. This talk will also cover some novel and newer treatment options in the literature.

Feline Chronic Gingivostomatitis (FCGS):
Feline Chronic Gingivostomatitis is a tenacious, persistent inflammatory condition of the oral mucosal tissue, which depending on the severity, can cause varying degrees of oral pain to the patient. It is important to understand that this inflammation is beyond gingivitis and periodontitis. The gingiva and mucosa (alveolar, labial and buccal) are most commonly affected. Lingual and sublingual tissues, and mucocutaneous junctions may be involved, and the pharyngeal and palatal mucosa is rarely affected. Inflamed, bilateral caudal oral tissue is a common feature of chronic, refractory cases.

Typically the condition is very painful, and common clinical signs include anorexia or hyporexia, halitosis, increased drooling, difficulties chewing and picking food/toys up, weight loss, dull haircoat, oral bleeding, withdrawn behavior, restricted mouth opening and/or vocalization during eating/grooming. Cats of any age, breed or gender can be affected, however there appears to be an over-representation for young adults (<8 years) reported. The reported prevalence is 0.7-12%, however true prevalence is unknown. The eitiology of this disease is unknown, however it is believed to be multifactorial involving viruses, bacteria, environmental and/or exogenous factors. It is reported that the patient's own altered immune response to oral antigenic stimuli also plays a role. Feline calicivirus (FCV) is associated in many studies to FCGS, however other infectious agents such as feline herpesvirus (FHV), feline immunodeficiency virus (FIV), feline leukemia virus (FeLV), Puma Feline foamy virus and bacteria have also been linked with the pathogenesis of FCGS.

A systematic diagnostic approach is the best way for accurate diagnosis, however once the veterinarian familiarizes themselves with the varying appearances of this disease, the classic clinical appearance is commonly suspected with an awake oral exam. A thorough diagnostic approach involves reviewing all medical records, performing a full clinical examination with a thorough awake oral examination (though many cats resent this due to their painful oral condition), blood tests (hematology, biochemistry), anesthetized oral examination with imaging and/or virus testing, bacteriology and biopsy with histopathology.

Treatment goals are aimed to decrease inflammation, controlling plaque bacteria, control pain, modulate the host immune response, reduce inflammatory factors from the oral cavity, and treat any secondary infections. A conservative approach is rarely effective in cats with severe stomatitis. Extractions is the mainstay treatment, with the literature showing that it can provide the best clinical response. It has been shown that 60-80% of cats showed a complete resolution or substantial clinical improvement with dental extractions. If partial mouth extractions are opted, then diligent homecare at the remaining teeth is recommended. Some cats may still need on-going additional medical management despite extractions. Other common medical treatments include glucocorticoid steroids, cyclosporine, analgesia (opiods, gabapentin, non-steroidal pain relief), systemic antibiotics, and/or topical use of antimicrobial gels. Some other medical management options include mesenchymal stromal cell therapy, CO2 laser of proliferative lesions and recombinant feline interferon omega. There is emerging interest in anti-viral treatment of FCGS. Prognosis is always guarded as it is difficult to truly predict how each patient will respond to treatment. Statistically it can be good with appropriate treatment, however it is important to discuss with the client that some cases require long term medical management, and a small percentage remain refractory to all treatment. Establishing a good relationship with the client can be helpful with the maintenance of these patients and managing expectations. A motivated owner and a proactive veterinarian are the best advocates for these patients.

References on request at shatunen@veterinarydental.com

Common Lumps and Bumps in the Canine & Feline Oral Cavity

Target audience: RDVMs

Objectives: Overview of oral masses commonly encountered in small animal practice, with practical guidance on recognition, communication, and referral.

Introduction & Background: Oral masses are frequently seen in dogs and cats, ranging from benign proliferative lesions to aggressive malignancies. Early detection is key: impacts treatment options, prognosis, and patient quality of life. Routine oral exams and dental procedures are ideal opportunities to identify lesions early.

Why Oral Masses Matter:

- **High risk of malignancy:** Especially in cats, most oral tumors are malignant.
- **Quality of life:** Pain, difficulty eating, bleeding, and halitosis can significantly affect daily life.
- **Treatment impact:** Early intervention improves outcomes; late detection limits options.
- **rDVM role:**
    - Identifying and initiating diagnostics ensures timely referral and management.
    - Usually have a good rapport and trust with the client and patient already

Client Communication Tips

- Provide a safe space
- Understand the owners goals
- Validate the owners feelings
- Use clear, non-alarming language.
- Discuss staging, treatment options, and realistic prognosis early.
- Balance hope with honesty - especially in aggressive malignancies.

Common Oral Masses:

Dogs

Benign:

- Gingival Enlargement
- POF/FHGL/Fibromatous Epulis
- CAA
- Odontogenic Cysts e.g. dentigerous cyst

Malignant:

- Malignant melanoma
- Oral squamous cell carcinoma
- Fibrosarcoma

Cats

Benign:

- Pyogenic Granuloma
- Gingival Enlargement
- Peripheral odontogenic fibroma (rare)
- Reactive/inflammatory lesions (eosinophilic granuloma complex)

Malignant:

- Oral squamous cell carcinoma

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