Presentation and Management of Periodontal Diseases

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ALL PETS DENTAL
Weston Florida

Periodontal Diseases
- What are they?
- How to diagnose?
- How to treat?
- How to prevent?
Periodontal Diseases what are they?

- Stages 1-4
- Pocket/ Non-Pocket
- Pseudopocket- Gingival Hyperplasia
- Cleft/Fenestration
- Periodontal Fistula

Stage 1 Periodontal Disease (Gingivitis) appears as inflamed gingiva without evidence of support loss.

Stage 2 (<25% support loss)
Pocket vs. Non-Pocket vs. Pseudopocket

- Non-pocket = Gingival Recession
- Pocket
- Pseudopocket
Diagnosing Periodontal Disease

Stage 3

Stage 4
OraStrip®

- OraStrip’s pad contains a detection reagent that develops a yellow color in the presence of thiols
- Thiols are a byproduct of anaerobic bacteria metabolism
- The intensity of the color reaction is directly related to the concentration of thiols

What to do with the results?
- Score of 0 indicates absence of thiols
- Score of 1 through 5 is a positive result for the presence of active periodontal disease
OraStrip test score of 3 or above
77% of patients with an OraStrip result of 3 or above were found to have periodontal disease with attachment loss (Stage 2, 3, 4).

OraStrip test score of 5
100% of patients with an OraStrip result of 5 or 6 were found to have periodontal disease with attachment loss (Stage 4, 5, 6).

HOMETOWN Animal Hospital and Dental Clinic

Molly (14538) 02-08-13

Oral examination results:
- Right upper canine before teeth cleaning
- Right upper canine after teeth cleaning before bonding
- Right upper canine after bonding
- Right upper third premolar bleeding on probing
Multirooted Tooth Furcation Exam
Furcation Involvement F1

Depression in the furcation area that extends less than half way under the crown in a multirooted tooth.

Stage 2 Furcation involvement
Depression in the furcation area extends greater than half way under but not through and through.

Stage 3 Furcation exposure

In stage 3 furcation exposures the periodontal probe advances through-and-through.
Bleeding on Probing

Bleeding Needs to be Addressed

There is a reason for the bleeding
Intraoral Radiology

Stage 1

Stage 2
Stage 1: Gingivitis - inflamed gingiva without evidence of support loss.

Therapy: Remove plaque and calculus, daily home care, tooth diet, dental treats.

Stage 2

Stage 3

Stage 4

Treating Periodontal Diseases
Stage 2 periodontal disease <25% support loss (75% of root still supported)

Non pocket

Gingival recession

Pocket

Stage 2 periodontal disease <25% support loss (75% of root still supported)

Non pocket

No pocket=no treatment

Need to eliminate or reduce pocket

Pocket

Stage 2 periodontal disease with pocket

Treatment:
Gingivectomy
Cindoral Disease

No pocket=no treatment

Need to eliminate or reduce pocket

Pocket

No pocket=no treatment

Need to eliminate or reduce pocket

Pocket
Clindoral®

Clindoral Application

Stage 3 periodontal disease – between 25-50% support loss.

Choices
If owner and patient will allow home care – follow
If owner or patient will not allow home care – extract

Stage 4
Stage 4 periodontal disease

Extract
Stage 1: Gingivitis appears as inflamed gingiva without evidence of support loss. Therapy: Remove plaque and calculus, daily/weekly home care, tooth diet, dental treatments.

Stage 2: Periodontal disease <25% support loss (75% of root still supported).
Stage 2 periodontal disease <25% support loss
(75% of root still supported)

Non pocket=no treatment

Pocket

Need to eliminate or reduce pocket

Stage 2 Periodontal disease with pocket

Treatment:
Gingivectomy
Doxirobe

Stage 3 periodontal disease –between 25-50% support loss

Choices
If owner and patient will allow home care –follow
If owner or will not allow home care………………..extract
Stage 4 periodontal disease

Preliminary stages of calculus as a retentive surface for plaque.
Plaque is composed of oral bacteria, saliva, and food products which attach to the tooth surface.

Soon the deposition of salivary calcium in plaque forms rough calculus (tartar) for more plaque to accumulate.
Steps in Plaque Biofilm Maturation

Clean tooth → Salivary glycoprotein pellicle

→ Gm+ aerobic cocci attach

→ Rough surface → Mixed aerobes

→ Mixed plaque thickens → Oxygen depleted

→ Anaerobes grow → Spirochetes

24 hours

Once enough plaque attaches a Biofilm forms and does not let go unless pushed off
Slimy plaque on top of calculus irritates the gingiva

Bacteria
Inflammation
Mouth

Circulation

Distant Organs

Bacteremia
Degradation products
Disease
Cytokines
C-RP
CIC

Plaque Control

Mouth
Bacteria

Circulation

Distant Organs

Prevention is key!

Prevention is key!

Prevention is key!

Prevention is key!
Perceived Dental Disease

Only a minority of pet owners with pets age 3 or more thought their pets had any stage of dental disease.

<table>
<thead>
<tr>
<th>% of Dogs and Cats Aged 3 or More Years</th>
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</thead>
<tbody>
<tr>
<td>Actual is 60%</td>
</tr>
<tr>
<td>Actual is 70%</td>
</tr>
<tr>
<td>60% Gap!</td>
</tr>
<tr>
<td>54% Gap!</td>
</tr>
</tbody>
</table>

Do you believe your dog/cat is in any stage of dental disease? Actual rates are based on American Veterinary Medical Association Report.

What have they done?

Those who’ve taken steps to provide dental healthcare for their pets in the past year were most likely to have purchased treats/chews with a dental benefit.

Which of the following have you done to provide dental healthcare for your dog/cat in the past year? Please check all that apply.

<table>
<thead>
<tr>
<th>What have they done?</th>
<th>Treats</th>
<th>Food</th>
<th>Brushed</th>
<th>Veterinarian</th>
<th>Groomer</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogs</td>
<td>80%</td>
<td>60%</td>
<td>70%</td>
<td>50%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Cats</td>
<td>70%</td>
<td>50%</td>
<td>60%</td>
<td>30%</td>
<td>20%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Net Losses and Gains

Purchasing treats with a dental benefit was the only methodology that gained traction over the past year.
Mechanical Cleaning
Before calculus forms

• Tooth brushing-gold standard

• Dental Diets (some mechanical only others mechanical and chemical)
• Dental Treats
• Rawhide chews-(some mechanical only)

Why Won’t Folks Brush Dog and Cat’s Teeth?

• Clients not willing to put their hands inside of pets mouths
• Some pets not willing to accept active plaque control
• Clients do not know what to do with the tooth brush after
• Zoonotic risk (airborne, contact, injury)

Claims made on dental treats:

Acts like a natural tooth brush
Cleans teeth
Reduces bad breath
Keeps the mouth healthy
Scales the teeth naturally
Prevents tartar build-up
Freshens breath

No standards, little risk of regulatory review
Ingredients = efficacy?

These?
Our peppermint flavored spray removes plaque and tartar from your pet's teeth—no toothbrush required! Made with all-natural, holistic ingredients, Oral Care Spray safely removes plaque and tartar, reverses oral disease, promotes healthy gums, brightens teeth and kills the bacteria that causes bad breath. When sprayed in your pet's mouth, the ingredients mix with your pet's saliva and completely coat their teeth and mouth. This process kills harmful bacteria and loosens plaque and tartar. Safe for both cats and dogs of all breeds. Made in the USA.

Important Information

Ingredients

Ingredients include grapefruit seed extract, grape seed extract, thyme oil, neem oil, rosemary oil and peppermint oil.

Safe?

Ingredients

Ingredients: Natural plant marine algae D1.070, minerals and trace minerals 22%, fibre 6%, proteins with all amino acids 6%, Omega-3 fatty acids 2%. Free of artificial coloring, preservatives, gluten, salt and sugar.

Composition: 52% Polysaccharides, 22% Minerals and Trace Elements, 6% Fiber, 6% Proteins and Amino Acids, 2% Omega 3 Essential Fatty Acids

Mineral Content per Scoop (in micrograms): Sulphur - 10,000, Magnesium - 2,000, Iodine - 330, Arsenic (low toxicity organic) - 13.3, Cobalt - 1.7
What is needed was a way for the public to know how to choose an effective dental treat/diet

1. Should be safe
2. Should be effective in decreasing the progression of either plaque and/or calculus (tartar)

For human oral health care products, the "gold standard" is the ADA Accepted Seal

ADA Seal of Acceptance
Current Minimum Superiority Definitions

<table>
<thead>
<tr>
<th>Manual or powered toothbrushes, interdental cleaners</th>
<th>15% reduction of gingivitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemotherapeutic agents to control plaque and gingivitis</td>
<td>15% (±stat. sig.) reduction in gingivitis in each of two trials</td>
</tr>
<tr>
<td></td>
<td>20% min. mean reduction of gingivitis between the two trials</td>
</tr>
<tr>
<td>Statistically significant reduction in plaque</td>
<td></td>
</tr>
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<td>15% (±stat. sig.) reduction in gingivitis in each of two trials</td>
</tr>
<tr>
<td></td>
<td>20% min. mean reduction of gingivitis between the two trials</td>
</tr>
<tr>
<td>Fluoride-containing dentifrices</td>
<td>10% improvement in caries reduction</td>
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</table>
FDA Position

- FDA recognizes three levels of dental claim:
  - “Disease” (gingivitis, periodontitis)
  - “Structure-Function” (plaque and calculus accumulation)
  - “Cosmetic” (cleans teeth, freshens breath)
- FDA encouraged establishment of a voluntary review system for Structure-Function claims in dogs and cats.
- FDA restricts disease claims to FDA

Veterinary Oral Health Council

- Purpose: To provide a means of reviewing veterinary dental health claims
- Pre-set standards
- Confidential review of data by statistician and review panel independent of the company marketing the product

Veterinary Oral Health Council (VOHC)
Plaque/Calculus >=20% plaque/tartar

Helping to Control the Most Common Disease in Dogs and Cats
Periodontal Disease (Gum Disease)
The VOHC Seal is awarded based on compliance with the following standards. For more information on the eligibility requirements and standards, contact us.

Find out why the VOHC Seal is awarded to products and why it matters.
History of the VOHC

1991 - Meeting sponsored by AVDC. Presentations by AAHA, ADA, AVMA, and US FDA. Value of establishing a system was recognized.


1995 - AVMA Council on Veterinary Services endorsed the proposal in concept.

1997 - AVDC Board voted to implement the VOHC™, and the Council met for the first time in November 1997.

Protocols Available

• Limited to plaque and calculus
  – FDA has regulatory authority in USA for “disease” claims (gingivitis, periodontitis)
  • Mechanical control of plaque
  • Mechanical control of calculus
  • Chemical control of calculus
  • Chemical control of plaque

Mechanical and Chemical Effects

- Must prove that there is benefit from both
  • Three arms to study - Control diet
  • Control diet plus mechanical agent
  • Control diet plus mechanical agent containing chemical agent
- Statistical hurdle for each arm
**Protocol Requirements**

- **Two trials** (separate populations of dogs or cats) required.
- **Dry food control diet** fed dry.
- **Animals randomly assigned** to test and control groups.
- **Stratification recommended** for plaque/calculus score but not required.
- **Minimum trial periods** - one week plaque, three weeks calculus.

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** VOHC Seal - Product Safety **

If a submission is made and the product meets the VOHC standard:

- Company must provide an affidavit that the product meets current regulatory standards.
- Dental claims in advertising and on packaging are reviewed by VOHC.
- Product complaints are required to be reported to VOHC following the award of the VOHC Accepted Seal.
- FDA is the regulatory agency.

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** ACCEPTED VOHC PRODUCTS **

Products that have the Veterinary Oral Health's Council seal of acceptance:

- Bright Bites and Checkup Chews for Dogs
- Canine Greenies® - all sizes Canine Greenies” Lite
- HealthyMouth antiplaque water additive
- HealthyMouth gel
- Iams Chunk Dental Defense Diet for Dogs
- ProPlan Veterinary Diets DH Dental Health
- Science Diet Oral Care Diet for Dogs and Cats
- TarterShield Soft Rawhide Chews for Dog
- Vetradent Dog Chews 'Bluechews' and Dental Chews' - Baby Bluechews and Tiny Toy Dental Chews
Some work by mechanical means

Hills TD

Canine t/d® Efficacy
58% Less Plaque
64% Less Tartar
74% Less Stain
48% Less Gingivitis

Accumulation of Plaque
Accumulation of Tartar
Gingivitis
Halitosis

Biometrically inspired to clean as dogs chew.

Ingredients: Made with all-natural, biodegradable materials.

Features:
- Pore Structure: Enhances toothbrushing and helps break up tartar and plaque.
- Durable: Lasts longer than other toothbrushes.
- Easy to Clean: Can be rinsed with water.

The innovative design of each brush provides a unique experience for your dog.
Some VOHC products work through chemical and mechanical means.

**INGREDIENTS:**
- Wheat Starch, Glycerin, Wheat Gluten, Maltodextrin, Natural Poultry Flavor, Mono and Di-glycerides, Titanium Dioxide (color), Powdered Cellulose, Zinc Methionine Complex, Yeast Culture, Calcium Carbonate, L-ascorbyl-2-polyphosphate, Magnesium Stearate, Artificial Color (Blue #2), preserved with Mixed Tocopherols and Sodium Metabisulfite, Peppermint Leaf Powder.

**INGREDIENTS:**
- Ingredients American Beef Hide, Bacon Flavor, Sodium Tripolyphosphate, and Cetyl Pyridinium-Chloride. Each large dog Chew contains 78 calories. Made in USA.
Water Additives

- Xylitol
- Biotene
- Aquafresh
- Leba
- Healthy mouth-VOHC Accepted

<table>
<thead>
<tr>
<th></th>
<th>Healthy</th>
<th>VOHC</th>
<th>Aquafresh</th>
<th>Leba</th>
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<tbody>
<tr>
<td>Plaque Remover</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Calculus Remover</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Oral Hygiene</td>
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<td>No</td>
<td>No</td>
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<tr>
<td>Antimicrobial</td>
<td>No</td>
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<tr>
<td>Tannin/Polyphenol</td>
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<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Antioxidant</td>
<td>No</td>
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</table>

What should the veterinarian do to reduce companion animal plaque/calculus? FLIP THE LIPS

Incorporate plaque/ calculus evaluation in every examination
Schedule professional teeth cleaning visits based on calculus not on the calendar (yearly).

Eliminate Pockets