Dear Veterinarians,

Warm greetings from PIL!

PIL wishes that this festive season brings a lot of happiness, fun, laughter and success to you and your family.

With this issue, we are introducing a new and very innovative product to you. The product is PIL’s Pet Dentagel. Oral hygiene of pets is often overlooked which can lead to problematic and painful conditions for the pet. We have already introduced this product to fellow veterinarians through our product brochure and the product has gained a lot of appreciation in terms of the benefits it offers.

In this newsletter, we are writing on dental diseases in dogs. We hope it is of value to you.

We thank all veterinarians for using PIL products. Your support is much appreciated.

Geetika Rao  
Business Development Executive  
Animal Health Division  
Psychotropics India Ltd.

Periodontal Disease in Dogs

Vets say 85% of canines having age over 4 have some form of gum disease. Other frequent problems include crooked, cracked or loose teeth, an infection or an abscess. One may not even know that the dog has oral discomfort. This is a part of dog ancestry; in the wild, showing pain would make the dog vulnerable to attack.

While in humans, the most common disease is tooth decay caused due to loss of calcium from the enamel, the most common dental problem in dogs is Periodontal Disease.

What is Periodontal Disease?

Periodontal Disease is an infection resulting from build-up of soft dental plaque on the surfaces of the teeth around gums. The bacteria in dental plaque irritate the gum tissue if plaque is accumulated, which leads to infection of the surrounding tissue and bone. Accumulation of tartar and calculus on the teeth makes the gums recede around the base of the tooth, exposing the tooth root and tooth sockets. If left untreated, the infection spreads into the tooth socket, destroying the bone. Ultimately, the tooth loosens and falls out.

Poor oral hygiene in dogs leads to increase in the bacteria living in the dog’s mouth, namely, Streptococcus and Actinomyces. The sticky substance produced by these bacteria is called plaque. When plaque is not cleaned and bacteria not reduced, they together get hardened to form tartar or calculus.

Studies have shown that dogs with severe periodontal disease have more severe microscopic damage in their kidneys, heart muscle and liver than those dogs with less severe periodontal disease. Hence, it is important to control the proliferation of
bacteria and germs in the mouth. Thus, the dog’s teeth should be properly cleaned or some anti-bacterial agent should be introduced in the mouth so that the bacteria can be killed.

**Symptoms of Periodontal Disease in Dogs**

Halitosis or bad breath is the most common sign of oral disease. Plaque builds up on the tooth surface and surrounding tissues and gums everyday leaving bad breath if not cleaned. Drooling, difficulty in chewing, mouth sensitivity, pawing at the mouth, red, inflamed, bleeding gums, tooth loss, loss of appetite, stomach or digestive problems, irritable or depressed mood are also the symptoms of Periodontal Disease.

**STAGES OF PERIODONTAL DISEASE**

**STAGE 1: EARLY GINGIVITIS**

Gingivitis precedes periodontitis and causes irritation, redness and swelling of gums. Early Gingivitis is characterized by hyperemia or increased blood flow of the marginal gingival (of the gums) blood vessels. There is also edema (swelling caused by fluid retention) of the gingival margins. Thus, the gingival margin appears as rolled margins depicting the thickening of tissues adjacent to the teeth. The pet has stained teeth and red/pink edging around the gum line.

**STAGE 2: ADVANCED GINGIVITIS**

In Advanced Gingivitis, there is ulceration of the surface epithelium. Gingivitis is not painful. The only outward sign is redness and halitosis. In the advanced stage of Gingivitis, the gums can bleed upon probing. Blood spots may even be found on the pet’s toys or anything the pet has chewed on. Pets with advanced gingivitis have highly inflamed and/or bleeding gums accompanied by severe crust on plaque and tartar, which builds layer upon layer also creating bad breath.

**STAGE 3: EARLY PERIODONTITIS**

Early Periodontitis is characterized by early periodontal pocket formation as the supportive tissues are damaged. The pocket may extend from one third to two thirds of length of the root.

**STAGE 4: ADVANCED PERIODONTITIS**

Loss of attachment over two thirds of the root is considered severe or advanced gingivitis and is accompanied by tooth mobility and discomfort. Gingival recession, furcation exposure and alveolar bone loss can also occur.

“The final stages of early and advanced periodontitis is when bone loss and degradation occur along with pockets of infection in the gums and roots that gain access to the blood stream - these are what do damage to the heart, kidneys and liver.”

References:
1. Animal Planet: Healthy Pets: 3 Common Dog Tooth Problems
2. Dental Diseases in Dogs: http://www.vcahospitals.com
3. American Academy of Periodontology: www.perio.org
5. Plaque Attack Your Pet and Periodontal Disease, Waltham Veterinary Clinic
Periodontal Pockets

In Periodontitis, pockets are formed around the teeth. These pockets can be classified according to the severity and depth. A periodontal probe is commonly used by veterinarians to measure the depth of these pockets.

### TYPES OF PERIODONTAL POCKETS

<table>
<thead>
<tr>
<th>Gingival Pocket (Pseudo or False Pocket)</th>
<th>Periodontal Pocket</th>
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<tbody>
<tr>
<td>Seen in Gingivitis</td>
<td>Seen in Periodontis</td>
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<tr>
<td>Formed by Gingiva Enlargement without extraction of underlying tissues</td>
<td>Occurs with destruction of the supporting periodontal tissues and loosening and exfoliation of the teeth</td>
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<tr>
<td>The sulcus is deepened because of increased bulk of gingiva (fig. A)</td>
<td>Periodontal Pocket may be Suprabony (bottom of the pocket is coronal to the underlying alveolar bone, fig. B) or Intrabony (bottom of the pocket is apical to the level of the adjacent alveolar bone, fig. C)</td>
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### TREATMENT OF PERIODONTITIS

Once the type of pocket is identified, the treatment plan can be established. Aims of treatment are:

- To help eliminate pockets or pseudo pockets
- To promote re-attachment of the tissues to the tooth
- To enable successful home care by the owner

The first non-surgical step is Peridontal or Deep Cleaning. It involves removal of plaque and tartar deposit on the tooth and root surfaces. This procedure helps gum tissues to heal and periodontal pockets to shrink.

Depending upon the patient’s condition, anti-biotic and/or pain killers may be recommended. A mouth rinse or any substance that reaches the periodontal pocket may also be recommended. If these procedures do not lead to a reduction in pocket size and the supporting bone is lost, surgery may be necessary to prevent tooth loss.

Bone surgery, including bone grafts are also carried out to reshape the bone destroyed by periodontal disease.

Splints, bite guards or other appliance may be used to stabilize loose teeth and to aid in the regeneration of tissue during healing.

Preventive measures to remove plaque is the key to save your dog from Periodontal Disease. Earlier it was being done by regular brushing or using products that prevent the formation and deposit of plaque and tartar. Now it can be more easily achieved by using PIL’s Pet Denta gel which does not require brushing. It mixes easily with the pet saliva providing effective oral hygiene.

- Dogs have 42 permanent teeth, 20 on the top, and 22 on the bottom. These begin to emerge at about four months of age
- Puppies should lose a puppy tooth before the corresponding adult tooth emerges. If a puppy tooth is still in place when an adult tooth begins to show, it is called a retained deciduous tooth. If this occurs, the veterinarian should see that the dog’s occlusion is not affected
- Facial swelling below the eye is usually due to an infection of the 4th premolar (carnassial) tooth
- Sneezing and nasal discharge may be due to an infection of the upper canine tooth. The infection may lead to an opening between the mouth and the nasal cavity. This is called an oronasal fistula

Source: Veterinary Periodontal Disease - www.nva.co.uk, Dental Facts - Drs. Foster & Smith

To get updates on pet issues, follow us at https://www.facebook.com/pilanimalhealthcare
Pet Dentagel for Oral Hygiene: Removes Accumulated Plaque and Calculus, Prevents Periodontal Disease

Having read the details about the problems faced by a dog due to improperly cleaned dog’s teeth, effective oral hygiene can prevent the development or progression of periodontal disease and maintain good gingival health in pets. Further, dogs are mostly companion animals who often find place inside the house, living with the master like any other companion. They share all sitting space in the house, even the bed of the master out of sheer love and affection. It is important to ensure complete hygiene of dogs to avoid infection and maintain dental aesthetics. Pet Dentagel formulation has been scientifically designed to control bad breath, plaque, calculus and tartar. Pet Dentagel is a gel formulation that easily mixes up with the dog’s saliva and thus doesn’t require troublesome brushing.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Role</th>
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<tr>
<td>Natural mint</td>
<td>Gives a cooling sensation</td>
</tr>
<tr>
<td>Green tea extract</td>
<td>Contains catechin, a flavonoid that has been shown to slow down the</td>
</tr>
<tr>
<td></td>
<td>activity of bacteria linked to tooth decay, bringing the positive</td>
</tr>
<tr>
<td></td>
<td>cleansing power of catechin right to the pet’s mouth, removing</td>
</tr>
<tr>
<td></td>
<td>plaque and controlling tartar and bad breath</td>
</tr>
<tr>
<td>Triclosan</td>
<td>Enhances inhibitory effects on bacterial metabolism in dental plaque.</td>
</tr>
<tr>
<td></td>
<td>Reduces accumulation of dental plaque, gingivitis and calculus</td>
</tr>
<tr>
<td>Peppermint oil</td>
<td>Freshens breath for a long time</td>
</tr>
<tr>
<td>Clove oil</td>
<td>Has proven antiseptic and anti-bacterial properties, helps keep teeth</td>
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<td></td>
<td>strong and gums healthy</td>
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pil’s Squeeze only

**PET DENTAGEL**

- Quickly & naturally reduces plaque & tartar in dogs & cats
- No toothbrush required
- Promotes healthy oral environment
- Soothes minor gum irritations

For Clean Teeth & Fresh Breath Everyday

For Further Information Please Contact:

[Company Logo]

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