

TOP 5

Oral & Dental Lesions

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Most patients hide signs of pain associated with dental infections. Disease in the oral cavity may manifest in small, yet obvious, lesions. Clinicians should be aware of the subtle signs that often present with oral or dental disease and indicate the need for further evaluation. Overlooking these common pathologies is a missed opportunity to provide care and treat infection and pain in patients. When a clinical lesion is identified, general anesthesia and intraoral radiographs are required to confirm diagnosis and develop a comprehensive treatment plan.¹⁻³

Top 5 Oral & Dental Lesions

1. Fractured teeth
2. Parulis
3. Tooth resorption
4. Maxillary draining tracts
5. Stomatitis

1

Fractured teeth

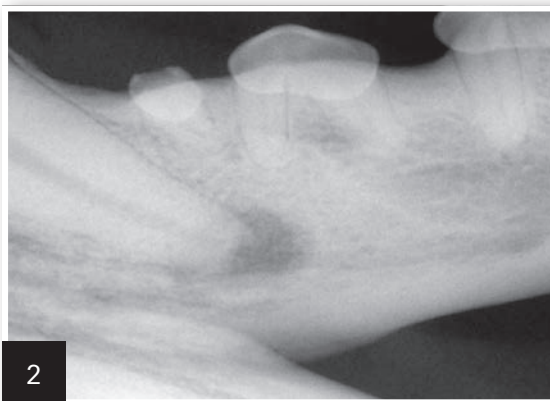
Approximately 25% of dogs are presented with one or more fractured teeth, and 10% have a complicated crown fracture indicating the pulp canal is exposed (Figure 1).⁴⁻⁶ Once exposed to the oral cavity, the canal pulp becomes contaminated, infected, and necrotic, eventually resulting in periapical infection and pain. An oral examination of the patient while under general anesthesia can detect exposed canal pulp; a dental explorer will stick or drop into the open pulp. If open pulp is identified, intraoral radiographs are required to assess the periapical tissues (eg, periapical lucency, root resorption) and the size of the pulp canal (eg, may be wider compared to the contralateral tooth; Figure 2). Necessary treatment options for a pulp-exposed, infected tooth include root canal treatment or surgical extraction.

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1

A complicated crown fracture of the left maxillary canine tooth (tooth 204). The only options are root canal treatment or surgical extraction.



2

Left mandibular canine tooth root (tooth 304) that had a complicated crown fracture. A periapical lucency, external inflammatory apical root resorption, and a relatively widened pulp canal are present, indicating the tooth has been dead and infected for months. The chronically exposed pulp results in periapical infection and inflammation.

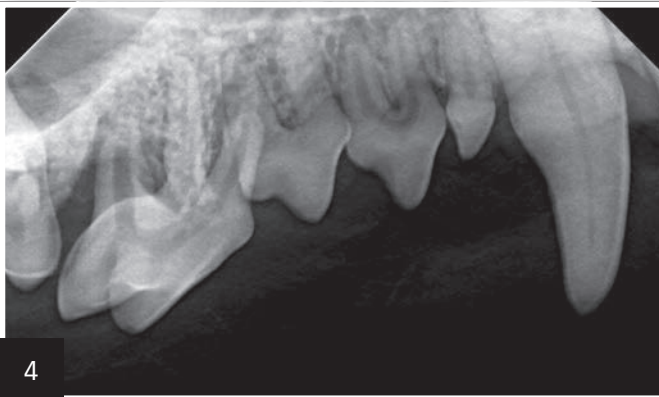
2

Parulis

A parulis is an opening of an intraoral sinus tract in the oral mucosa; hidden periodontal disease is often indicated if the parulis is within the gingiva (Figures 3 and 4). Periodontal disease is caused by a subgingival biofilm (an adherent bacterial community living in an exopolysaccharide matrix that protects the bacteria and allows cooperation of the microorganisms) that results in loss of attachment of the periodontium (ie, gingiva, alveolar bone, periodontal ligament, cementum), regardless of the amount of plaque or calculus on the supragingival crown. Periodontal disease is predominately a subgingival disease, so general



Parulides at the mucogingival junction of the right maxillary fourth premolar (tooth 108). Although the crown does not appear clinically fractured or to have significant plaque and calculus, the presence of the parulides indicates infection resulting in sinus draining tracts exiting in these regions. Intraoral radiographs are indicated.



Combined vertical and horizontal bone loss of the distal and buccal roots of tooth 108 from the patient in Figure 3, resulting in almost complete bone loss. The tooth has a wide pulp canal compared with other teeth, indicating the pulp in this tooth died a long time ago (combined periodontal–endodontic disease). Surgical extraction is the only option in this case. The pulp chambers in tooth 106 wider than the other teeth, indicating that the pulp in this tooth is also necrotic and requires extraction.

anesthesia and intraoral radiographs are required. Extraction is often necessary for periodontal disease associated with a parulis. If the parulis is within the oral mucosa, it is likely caused by endodontic disease, and root canal treatment may be an option. A parulis at the mucogingival junction might be caused by either periodontal or endodontic disease.

3

Tooth resorption

While tooth resorption is becoming increasingly common in dogs, feline tooth resorption affects 27% to 72% of all domestic cats.⁷⁻¹² Cats rarely exhibit overt signs of oral pain associated with tooth resorption; however, tooth resorption may be so painful that patients may become hyporexic or anorexic, drop food, have exaggerated jaw movements, abruptly stop eating, and/or paw at the face while eating and drinking. Lesions start subgingivally, so subtle lesions at the free gingival margin (Figure 5) may be missed, particularly when on the lingual and palatal sides of the teeth. General anesthesia, full-mouth intraoral radiographs, and indicated treatment should be recommended.

Tooth resorption may be so painful in cats that patients may become hyporexic or anorexic, drop food, have exaggerated jaw movements, abruptly stop eating, and/or paw at the face while eating and drinking.



Feline tooth resorption lesion located at the buccal gingival margin of the right mandibular canine tooth (tooth 404). Identification of this lesion at examination warrants full-mouth intraoral radiographs and treatment as indicated in this patient.

4

Maxillary draining tracts

A maxillary extraoral draining tract rostral to the eye is most commonly associated with chronic infection (periodontal or endodontic) of a maxillary premolar or molar tooth (Figure 6). In brachycephalic breeds, it might even be the canine tooth. Dental disease is subgingival, and both periodontal and endodontic infections can result in maxillary draining tracts. There may be associated bone proliferation or reaction, and the region may be firm on palpation. Dental disease should be the top differential for these lesions before dermatologic conditions, ophthalmologic conditions, or tumors are considered. The infected tooth can be identified with general anesthesia, oral examination, periodontal probing, and intraoral radiographs of the maxillary regional dentition on the ipsilateral side of the draining tract (Figures 7 and 8) with similar radiographs of the contralateral side for

comparison. Surgical extraction of the infected tooth or teeth is often necessary. The carnassial tooth is not always at fault; therefore, intraoral radiographs are needed to diagnose the infected tooth, which could be any of the ipsilateral dentition (eg, first maxillary molar).

5

Stomatitis

Infectious or inflammatory conditions can cause inflammation of the gingiva and oral mucosa. Unfortunately, the term *stomatitis* has historically been and continues to be used loosely, blurring the discussion and treatment of inflammatory conditions in the feline oral cavity; the true definition of stomatitis is inflammation of the oral cavity.⁴ Biopsy and histopathology findings of the oral cavity are often reported as variants of

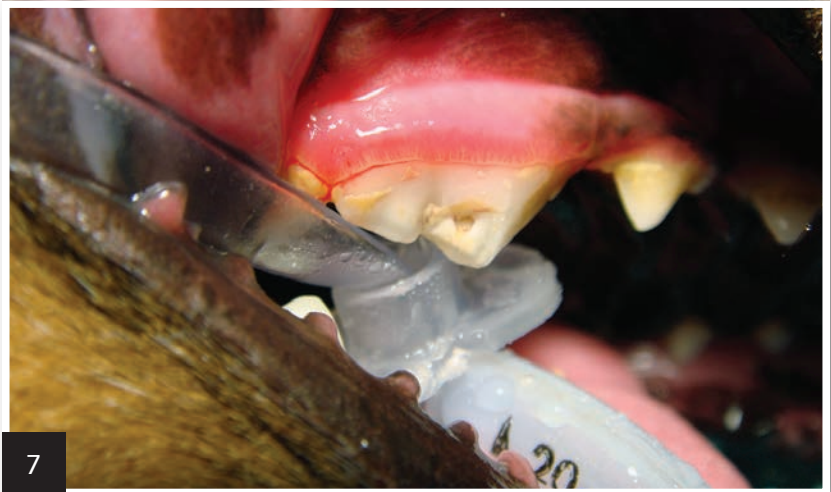
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6

Chronic right maxillofacial draining tract in a dog. The top differential diagnosis should be dental disease before other differentials relating to dermatologic, ophthalmologic, or cancerous conditions.

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7

Patient presented in Figure 6 after the calculus was removed from the crown. Note that tooth 108 has a chronic complicated crown fracture clearly evident, suggesting the tooth as the cause of the maxillofacial lesion.



8

Patient presented in Figures 6 and 7; note the periapical lucencies associated with all 3 roots of tooth 108. Surgical extraction or endodontic treatment (uncommon) of this tooth is often necessary at this stage of the disease. Identifying the complicated crown fracture earlier, during annual examination or dental cleanings, would have made the tooth a better candidate for root canal treatment.



Caudal mucositis (inflammation in the caudal oral mucosa) consistent with a true immune-dysregulated stomatitis. In addition to the gingivitis and buccal mucositis, the caudal mucositis is a clinically distinguishing finding to help differentiate a true immune-dysregulated stomatitis from aggressive periodontitis-causing oral inflammation. Surgical and medical treatment plans and prognosis, both short- and long-term, depend on correct diagnosis.

lymphoplasmacytic gingivitis, mucositis, or stomatitis, which implies chronic inflammation. The more common age-related periodontal disease and aggressive periodontitis, caused by subgingival plaque biofilms, should not be mistaken for the less common, true immune-dysregulated stomatitis (Figure 9).^{13,14} True immune-dysregulated stomatitis has a component of caudal mucositis. Corticosteroids and antibiotics are inappropriate for the treatment of periodontal bacterial-induced oral inflammation. General anesthesia, oral examination with periodontal probing, and full-mouth intraoral radiographs are necessary to differentiate periodontally inflamed tissue from true immune-dysregulated oral mucosa. Short- and long-term surgical

and medical treatment plans are based on accurate diagnosis. Although stomatitis is often discussed in relation to feline patients, there are painful stomatitis conditions that also occur in the dog.

Closing thoughts

Correct assessment of these clinical lesions requires general anesthesia, oral examination with periodontal probing, and intraoral radiographs. Patients often suffer quietly with hidden pain and infection, so clinicians need to identify these lesions, advocate for patient health, educate the client, and develop and recommend a treatment plan. ■ **cb**

See **Aids & Resources**, back page, for references & suggested reading.

EASOTIC®

Otic suspension

(hydrocortisone aceponate, miconazole nitrate, gentamicin sulfate) Anti-inflammatory, antifungal, and antibacterial

For Otic Use in Dogs Only

CAUTION

Federal law restricts this drug to use by or on the order of a licensed veterinarian.

BRIEF SUMMARY: Please consult package insert for complete product information.

INDICATIONS

EASOTIC® suspension is indicated for the treatment of otitis externa in dogs associated with susceptible strains of yeast (*Malassezia pachydermatis*) and bacteria (*Staphylococcus pseudintermedius*).

CONTRAINDICATIONS

Do not use in dogs with known tympanic membrane perforation.

EASOTIC® suspension is contraindicated in dogs with known or suspected hypersensitivity to corticosteroids, imidazole antifungals, or aminoglycoside antibiotics.

WARNINGS

Human Warnings: Not for use in humans. Keep this and all drugs out of reach of children.

Humans with known or suspected hypersensitivity to hydrocortisone, aminoglycoside antibiotics, or azole antifungals should not handle this product.

Animal Warnings: As a class, aminoglycoside antibiotics are associated with ototoxicity, vestibular dysfunction and renal toxicity. The use of EASOTIC® suspension in a dog with a damaged tympanic membrane can result in damage to the structures of the ear associated with hearing and balance or in transmission of the infection to the middle or inner ear. Immediately discontinue use of EASOTIC® suspension if hearing loss or signs of vestibular dysfunction are observed during treatment (see **ADVERSE REACTIONS**).

PRECAUTIONS

Do not administer orally.

Concurrent administration of potentially ototoxic drugs should be avoided.

Use with caution in dogs with impaired hepatic or renal function (see **ANIMAL SAFETY**).

Long-term use of topical otic corticosteroids has been associated with adrenocortical suppression and iatrogenic hyperadrenocorticism in dogs (see **ANIMAL SAFETY**).

The safe use of EASOTIC® suspension in dogs used for breeding purposes, during pregnancy, or in lactating bitches, has not been evaluated.

ADVERSE REACTIONS

In a field study conducted in the United States, there were no adverse reactions reported in 145 dogs administered EASOTIC® suspension.

In foreign market experience, reports of hearing loss and application site erythema have been received. In most reported cases, the hearing loss and erythema were transient and resolved with discontinuation of EASOTIC® suspension.

To report suspected adverse drug events, or for technical assistance contact Virbac at 800-338-3659.

ANIMAL SAFETY

Aural administration of EASOTIC® suspension to 12 week old Beagle dogs at 1, 3, and 5 times the recommended dose (1mL/ear/day) for 15 days (three times the treatment length) was associated with alterations of the hypothalamic-pituitary-adrenal axis as evidenced by the ACTH stimulation results. Other findings considered to be related to treatment include the development of aural hyperemia; the presence of renal tubular crystals and possibly renal tubular basophilia and atrophy; elevated liver weights; the development of otitis externa and media; and elevations in alanine aminotransferase, alkaline phosphatase, total protein, albumin, and cholesterol levels.

STORAGE INFORMATION: Store at temperatures between 20°C-25°C (68°F-77°F), with excursions permitted between 15°C-30°C (59°F-86°F).

HOW SUPPLIED: EASOTIC® suspension is supplied in a polyethylene canister, with a soft applicator canula.

Distributed by:

Virbac AH, Inc., Fort Worth, TX 76137 USA

NADA 141-330, Approved by FDA.

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