



# Stomatitis

## (Inflammation of the Mouth)

### Basics

#### OVERVIEW

- “Stomatitis” is inflammation of the lining tissues (known as “mucous membranes”) of the mouth
- The inflammation involves the soft tissues (such as gums and tongue) of the mouth
- Inflammation may be caused by many different stimuli of local (that is, within the mouth itself) or generalized (systemic) origin

#### GENETICS

- Oral eosinophilic granuloma (a mass or nodular lesion located in the mouth, containing a type of white-blood cell, called an eosinophil)—most commonly seen in the Siberian husky (may be hereditary)

#### SIGNALMENT/DESCRIPTION OF PET

##### Species

- Dogs
- Cats

##### Breed Predilections

- Ulcerative stomatitis in Maltese (dogs); ulcerative stomatitis is a condition in which the gum tissue is very fragile and is characterized by significant loss of surface gum tissue, frequently with inflammation (known as “ulcers”)
- Oral eosinophilic granuloma (a mass or nodular lesion located in the mouth, containing a type of white-blood cell, called an eosinophil)—most commonly seen in the Siberian husky (may be hereditary)
- Gingival hyperplasia in large-breed dogs; gingival hyperplasia is a condition in which the gum tissue increases in size, leading to thickened, enlarged gums
- Rapidly progressive inflammation/infection of the gums and supporting tissues of the teeth (known as “periodontitis”) seen mostly in young adult pets, such as the greyhound and the shih tzu
- Lymphocytic plasmocytic stomatitis in cats; “lymphocytic plasmacytic stomatitis” is inflammation of the lining of the mouth, characterized by the presence of lymphocytes and plasma cells; lymphocytes are a type of white-blood cell that are formed in lymphatic tissues throughout the body; lymphocytes are involved in the immune process; plasma cells or plasmacytes are a specialized type of white-blood cell; plasma cells are lymphocytes that have been altered to produce immunoglobulin, an immune protein or antibody necessary for fighting disease
- Localized inflammation/infection of the gums and supporting tissues of the teeth in young pets (condition known as “juvenile periodontitis”) in the incisor region of the upper jaw (maxilla) or lower jaw (mandible)—especially common in the miniature schnauzer

##### Mean Age and Range

- Juvenile-onset periodontitis in the miniature schnauzer and in young cats
- Periodontal disease associated with calculus is seen most often in older dogs and cats

### **Predominant Sex**

- Ulcerative stomatitis in Maltese—higher incidence in male dogs

## **SIGNS/OBSERVED CHANGES IN THE PET**

- Bad breath (known as “halitosis”)
- Pain
- Ulcerated lesions
- Excessive salivation/drooling (known as “ptyalism”)
- Fluid-buildup in the soft tissues, such as the gums (fluid buildup known as “edema”)
- Skin problems (such as draining lesions, redness, swelling) around the eye area (known as “periocular inflammation”) is possible, due to anatomic relationship between the teeth, sinuses, and the area near the eye
- Extensive plaque (the thin, “sticky” film that builds up on the teeth; composed of bacteria, white-blood cells, food particles, and components of saliva) and tartar or calculus (mineralized plaque on the tooth surface); ulcerated lesions may be seen on the surfaces of the lining of the mouth (for example, the lining of the cheeks) that are adjacent to teeth with large amounts of calculus

## **CAUSES**

### **Anatomic (Structural) Disorders**

- Inflammation/infection of the gums and supporting structures of the teeth (periodontal disease) due to overcrowding of teeth
- Attachment of the fold of tissue extending from the gum to the lip (located at the midline of the gum; condition known as a “lip frenulum attachment”)
- Tight-lip syndrome in the Chinese shar-pei; “tight-lip syndrome” is a condition in which the lower lip is pulled up tightly against the lower incisors

### **Metabolic Disorders**

- Excess levels of urea and other nitrogenous waste products (known as “uremia”) and high ammonia levels in saliva
- Inflammation of blood vessels (known as “vasculitis”) and dry mouth (known as “xerostomia”) seen with sugar diabetes (diabetes mellitus)
- Enlargement of the tongue (known as “macroglossia”) and puffy lips, as seen with inadequate levels of parathyroid hormone produced by the parathyroid glands (condition known as “hypoparathyroidism”)
- Lymphoma can be seen affecting the palate and/or tongue; lymphoma is a type of cancer that develops from lymphoid tissue, including lymphocytes, a type of white-blood cell formed in lymphatic tissues throughout the body; lymphocytes are involved in the immune process

### **Immune-Mediated Diseases**

- Pemphigus foliaceus
- Pemphigus vulgaris
- Bullous pemphigoid
- Systemic lupus erythematosus and discoid lupus erythematosus in the dog
- Sudden (acute) allergic reaction (hypersensitivity) to drugs

### **Infectious Disease**

- Normal bacteria in the mouth can cause infection if the lining of the mouth is disrupted (for example, injured by a foreign body)
- Fungal infection of the mouth (known as “mycotic stomatitis”)
- Generalized (systemic) infections
- Leptospirosis can cause pinpoint bruises (known as “petechia”) in the mouth
- Feline leprosy (*Mycobacterium* infection) can cause raised patches (known as “plaques”) in the mouth
- Calicivirus or herpesvirus infections—cats
- Canine distemper virus—dogs
- Wart-like lesions in the mouth caused by a viral infection (known as “viral papillomatosis”)—dogs

## Trauma

- Irritation from plaque (the thin, “sticky” film that builds up on the teeth; composed of bacteria, white-blood cells, food particles, and components of saliva) and tartar or calculus (mineralized plaque on the tooth surface)
- Foreign objects
- “Gum-chewer's disease”—chronic chewing of the moist tissues lining the cheek
- Electrical cord shock
- Chemical burns
- Lacerations
- Snake bite
- Blows
- Trauma of the palate from contact with the canine teeth of the lower jaw (mandibular canine teeth) that are too close together, so they do not fit in normal location when the mouth closes

## Toxic Injury

- Certain plants
- Chemotherapy
- Radiation therapy
- Chemical irritants

## RISK FACTORS

- Poor oral health

# Treatment

## HEALTH CARE

- Dental disease or inflammation/infection of the gums and supporting tissues of the teeth (periodontal disease) should be treated
- Treatment of lymphoma (cancer of lymphoid tissue), if causing stomatitis

## DIET

- Correct nutritional or hydration deficiencies, as needed; on an inpatient or outpatient basis
- Can use feeding tube, if necessary
- Diet may need to be adjusted if the pet experiences pain when eating

## SURGERY

- Most or all teeth must be extracted to resolve inflammation of the mouth (stomatitis) in many cases

# Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Broad-spectrum antibiotics—amoxicillin-clavulanate; clindamycin; metronidazole; doxycycline
- Products applied directly to the mouth (known as “topical products”)—chlorhexidine solution or gel (CHX, VRx Products, Harbor City, CA) is a plaque retardant; Maxi/Guard (Addison Biological, Fayette, MO) zinc-organic acid solutions and gels to promote tissue healing and retard plaque accumulation
- Anti-inflammatory drugs, such as prednisolone or prednisone; may be used for treatment of inflammation of the gums and throat characterized by the presence of plasma cells (a specialized type of white-blood cell; plasma cells are lymphocytes that have been altered to produce immunoglobulin, an immune protein or antibody necessary for fighting disease) in cats; the disorder is known as “feline plasma-cell gingivitis–pharyngitis”; may improve inflammation and appetite
- Chemotherapy, if inflammation of the mouth (stomatitis) is secondary to lymphoma (cancer of lymphoid tissue)
- Omega interferon (recombinant feline interferon)

# Follow-Up Care

## PATIENT MONITORING

- Laboratory tests, when generalized (systemic) disease is involved
- Evaluate the mouth periodically to monitor for improvement or recurrence of inflammation of the mouth (stomatitis)

## PREVENTIONS AND AVOIDANCE

- OraVet (Merial, Atlanta, GA) applied weekly to calculus-free teeth may be helpful in preventing further inflammation of the mouth
- Oral rinses and brushing the teeth may be helpful; frequently used in a dental home care program, especially for inflammation/infection of the gums and supporting tissues of the teeth (periodontal disease)
- A periodontal vaccine (Pfizer Animal Health) has been developed to aid in the prevention of periodontal disease

## POSSIBLE COMPLICATIONS

- Bacteria involved with inflammation/infection of the gums and supporting tissues of the teeth (periodontal disease) can enter the blood stream (known as “bacteremia”) and can cause kidney, heart, liver, and lung disease

## EXPECTED COURSE AND PROGNOSIS

- Depends on disease causing the inflammation of the lining of the mouth (stomatitis)

## Key Points

- “Stomatitis” is inflammation of the lining tissues (known as “mucous membranes”) of the mouth
- Inflammation may be caused by many different stimuli of local (that is, within the mouth itself) or generalized (systemic) origin
- Bacteria involved with inflammation/infection of the gums and supporting tissues of the teeth (periodontal disease) can enter the blood stream (known as “bacteremia”) and can cause kidney, heart, liver, and lung disease
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## Notes

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