INTRODUCTION

Disease of the oral cavity is a common problem, particularly in middle-aged to older cats. Some disorders (e.g. lymphoplasmacytic gingivitis/stomatitis) may begin very early in life in some purebred cats. This presentation will not delve into the area of primary dental disease although dental lesions may be associated with some of these disorders. There are usually no specific clinical signs for any of these disorders but a number of signs are common to them all. These include halitosis, ptyalism (drooling), difficulty eating (food falls from mouth or refusal to eat dry food), anorexia, gagging, sneezing, nasal discharge and/or sneezing, and pain on opening the mouth.

LYMPHOPLASMACYTIC GINGIVITIS/STOMATITIS (LPS)

The underlying etiology of this disorder is not known. Most scientific evidence has pointed to the role of calicivirus and possibly herpesvirus in initiating and perpetuating these inflammatory changes. Other theories suggest that the lesions arise from an immune-mediated reaction of the body to the tissues of gingival attachment to the teeth. This, however, does not explain the severe lesions seen in the fauces of the mouth in some cats. A recent theory to be advanced is that LPS is caused by Bartonella henselae. There is, to date, no published scientific evidence to support this contention. The fact that LPS lesions do not resolve with antibiotics alone is further evidence for a cause other than bacterial infection.

LPS occurs most frequently in middle-aged to older cats. However, some purebreeds such as Abyssinian, Somali, and others, may have LPS gingivitis starting as early as 6 months of age. The breeders are aware of this condition and many consider “red gum” to be normal for their breeds of cats. Lesions may occur along the gingival margins and when present in this location, may be associated with underlying FORL lesions. If FORLs are present, they may be overgrown by the proliferative gingival tissue so these areas must be examined carefully. Many of the more severely affected cats will have very proliferative and painful hyperplastic tissue in the fauces of the mouth. Lesions are usually bilateral which will help to distinguish this condition from neoplasia. Occasionally, polyp-like lesions can be found in the internal commissures of the lips.

Complete blood counts are usually normal in affected cats unless other concurrent disorders are present. A biochemistry profile often reveals hyperproteinemia with hyperglobulinemia. This is probably due to the immunologic
reaction and lymphoid proliferation in this condition. FeLV and FIV are not significantly associated with LPS but testing for all cats with oral disease is recommended. The diagnosis is suspected by the history and clinical appearance of the lesions. However, definitive diagnosis should be made by biopsy of affected tissue. Be sure to get a biopsy deep enough to get to the heart of the lesions rather than just the most superficial, secondarily infected portions of the lesions.

Treatment of LPS is frustrating because there is no one approach to treatment that will be effective for all cats. If there is significant dental disease and/or FORLs, this should be managed first. If the LPS tissue is very proliferative and impairing eating, swallowing, or interfering with medication it should be resected with electrosurgery (radiosurgery) or laser. Care should be used to avoid damaging tooth roots during gingival resection. Other recommendations for management include using ceramic or metal food bowls (avoid plastic), and feeding a limited antigen or hypoallergenic diet. Bovine lactoferrin (Allergy Research Group – see HerbsMD, www.herbsmd.com and other internet nutraceutical suppliers) applied topically in the oral cavity (350 mg/day) has improved some cats with LPS and LPS associated with FIV. Lactoferrin appears to inhibit infection of cells with feline calicivirus thus adding additional support for the role of this agent in causing LPS. (J Appl Microbiol 95:1026-1033, 2003). Although herpesvirus isn’t usually the main cause for this disorder, oral lysine (500 mg PO q12h) can be given. Various antibiotics have shown some benefit including metronidazole and azithromycin. Doxycycline has some anti-inflammatory effects on matrix metalloproteinases (MMPs) and may be useful in some cats. Corticosteroids are often the cornerstone of therapy for LPS. Oral administration is recommended. Repositol steroids can be used if the mouth is too painful for owners to medicate the cat. For resistant cases, chlorambucil (1 mg PO q24h, or 2 mg PO q48h) can be used to combat the lymphoid proliferation. Doses of both of these latter two medications should be tapered as the condition responds. Often a combination of various approaches is required to bring this condition under control if possible. One practitioner has reported some success with pentoxifylline (Trental) at 100 mg (1/4 tablet) PO q12h. Pain management should be considered an important part of therapy for this and other painful oral conditions. Control of pain will make eating more comfortable for the cat and medicating much easier for the owner. Useful drugs include meloxicam suspension (0.1 mg TOTAL dose, PO, q24-48h) [do NOT use NSAIDs if concurrently on corticosteroids], tramadol, or oral buprenorphine. Full mouth extraction of all teeth as recommended by some veterinary dentists is a very traumatic procedure and rarely resolves fauces lesions.

**EOSINOPHILIC GRANULOMA COMPLEX**

EGC is another disorder of obscure etiology. It is generally believed that it represents a hypersensitivity reaction but the underlying trigger is rarely identified. The most common oral lesions are the eosinophilic ulcer and eosinophilic plaque. Linear granuloma has rarely been identified in the oral cavity.
Cats of any age may be affected. There may be a genetic component to this reactivity because we have found a predisposition to these lesions in some inbred lines of research (purpose bred) cats. EGC lesions are often found on the upper lip (“rodent ulcer, indolent ulcer”), tongue, hard palate, and occasionally at the commissures of the lips. Eosinophilic ulcers on the upper lip usually have a carved out, depressed appearance with a yellowish appearing center. These lesions seem surprising non-painful and are not pruritic. Plaques are usually more raised with an overall red appearance. They tend to be more painful and may be pruritic.

The complete blood count may reveal peripheral eosinophilia but this finding is not always present. Biochemical profiles are usually normal. FeLV and FIV tests are usually negative. The lesions of eosionophilic ulcer on the upper lip is usually classical in appearance and is rarely confused with anything else. EGC lesions in other locations, however, can be confusing and biopsy is required for definitive diagnosis. Cytology may be useful if superficial material is removed from the lesion prior to scraping or imprint so that the eosinophilic infiltrate can be detected. Note that herpetic dermatitis in cats can also have an eosinophilic infiltrate and may mimic EGC lesions.

Parasites are always implicated in eosinophilic diseases so control of external and internal parasites is an important first step in attempts to manage EGC. As with LPS, attempting to reduce allergenic stimulation is an important approach to treatment and includes changing food and water bowls (if appropriate) and diet. Oral TMPS has been beneficial in some patients as has doxycycline at 10 mg/kg PO q24h. Corticosteroids have been the primary mode of treatment for EGC for many years. Oral administration is less effective than Depo-steroids. One approach that has been effective is the administration of 20 mg of Depo-Medrol IM q2weeks for 3 treatments. Unfortunately, the side effects of this approach may be significant and even if remission occurs, the lesions often recur. Intrallesional depo-steroids may be useful for small lesions. Cyclosporin A is reported to be useful in EGC in cats. Cats should be treated for 60 days with 25 mg/cat (4.9 to 12.5 mg/kg), given 2 h before a meal. Additional therapies that may benefit some cats include antihistamines, chlorambucil (more effective on lymphocytes), gold salts, cryosurgery/laser surgery, and radiotherapy. One practitioner has had success using Prozac in one patient with oral EGC that was refractory to all other treatments. The prognosis for this disorder must be guarded because of the recurrent nature of this problem if the underlying cause for the hypersensitivity has not been identified.

ORAL NEOPLASIA

Squamous cell carcinoma (SCC) is the most common malignancy of the feline oral cavity and is the one on which this section will focus. Other neoplasms, including fibrosarcoma, osteosarcoma, epulides, lymphoma, and mast cell tumor are much less common but the general principles of diagnostic investigation also apply to these diseases.
SCC usually occurs in older cats with no particular breed or gender predilection. The most common locations in the oral cavity are the gingival margins, under the tongue, fauces, and tonsillar crypts. Therefore, the oral cavity should always be thoroughly inspected for small lesions whenever an older patient is examined. SCC in particular should be suspected if any teeth are suspiciously loose when the remainder of the dentition is good. In addition to the signs previously described for oral cavity disease, regional lymphadenopathy, particularly if it is asymmetric, should raise concern about the possibility of oral cavity malignancy.

Laboratory profiles are not specific and usually reveal changes associated with the age of the cat. Rarely, hypercalcemia can be found with oral SCC. Detailed dental radiographs should be taken of the oral cavity to help define the extent of the lesion and involvement in the deeper hard tissues. CT or MRI may be useful in some cases for the same reasons. Regional lymph nodes should be evaluated for metastasis by aspiration/core biopsy for cytology. Although oral neoplasms (except for malignant melanoma) generally metastasize late and regionally, thoracic radiographs are recommended as part of the patient assessment. Biopsy of affected tissues will confirm the diagnosis.

The treatment of oral cavity neoplasia depends on the type of neoplasm, the degree of tissue involvement and metastasis, and the location of the lesion. Tumors of the rostral mandible or those involving less than 50% of one side can sometimes be cured with partial mandibulectomy. Tumors invading bone of the maxilla or involving deeper tissues more caudally may be debulked, but cure cannot be expected. Various non-surgical approaches to therapy include radiation (most useful for SCC and localized LSA), chemotherapy, photodynamic therapy and possibly immunotherapy.

**NASOPHARYNGEAL POLYPS**

Although not strictly a lesion of the oral cavity, nasopharyngeal polyps can cause similar signs including halitosis, gagging, difficulty eating or swallowing, as well as dyspnea and stridor. These polyps are inflammatory, probably the result of viral or other infectious stimulation. Nasopharyngeal polyps originate in the osseous bulla and extend to either (or sometimes both) the nasopharynx via the Eustachian tube or the external ear canal through the tympanum. Additional signs with these lesions can include head tilt, Horner’s syndrome, and facial palsy.

Affected cats are usually young to middle-aged (generally less than 6 years). There is no particular breed or gender predilection.

Laboratory findings are usually unremarkable. Diagnosis is made by thorough nasopharyngeal examination. In order to adequately evaluate behind the soft palate, the cat generally must be under anesthesia. The soft palate can be pulled forward with a spay hook and the nasopharyngeal polyp will often come into view. If it is...
small, a fiberoptic endoscope or a dental mirror and penlight can be used to examine this area.

Treatment is by traction removal of the polyp. These polyps have a tough, relatively avascular stalk so hemostasis is not a problem. Some clinicians recommend CT/MRI assessment and/or bulla osteotomy on all polyp patients. I have found recurrence after polyp removal alone less common than is reported in the literature. Therefore, I remove the polyp and if it recurs, I then address the middle ear as the source of the problem and recurrence. Post-removal complications can include Horner’s syndrome (which may be temporary or may persist), head tilt, and mild facial palsy (usually temporary).

**MISCELLANEOUS ORAL CAVITY LESIONS**

Other lesions of the oral cavity include fungal or bacterial granulomas or abscesses, foreign bodies, uremic ulcers, FeLV-associated ulcers, viral ulcers (acute feline URI), etc. Retained dentition or abnormal dention can result in proliferative lesions or malocclusion.