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Management of Oral Tumors in Cats

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Malignant neoplasms of the mouth and pharynx represent approximately 3% of all feline tumors. A variety of neoplastic lesions occur, including both odontogenic and non-odontogenic tumor types. Non-neoplastic masses and swellings such as gingival hyperplasia, infectious conditions, and eosinophilic granuloma may be confused with oral tumors. Conversely, oral neoplasms may present as non-healing, ulcerated lesions instead of "typical" prominent masses. Oral tumors frequently go unnoticed by the client until the tumor reaches a fairly advanced stage of development; it is therefore important to make an accurate diagnosis at the first time of presentation. Furthermore, the correct patient selection for a particular method of treatment depends on an accurate assessment of the nature and extent of the condition.

An accurate assessment requires a systematic approach and is achieved by using the so-called TNM system, whereby the clinician sequentially evaluates the tumor, the regional lymph node and any possible distant metastases. Clinical staging enables the clinician to intelligently estimate the extent of the disease. The assessment should be complemented by obtaining a biopsy to determine the histopathological nature of the lesion.

The choice of treatment is determined by the stage and histopathological nature of the tumor. Once the type and stage of the oral malignancy have been assessed, the clinician should select the modality that has the most proven clinical success, and which is applicable. Surgical excision remains the most frequently indicated and most practical method of treatment. If surgical excision is impossible or not elected by the client, the options of radiotherapy, chemotherapy, and palliative medical treatment are available.

Non-Odontogenic Tumor Types

Squamous Cell Carcinoma

Squamous cell carcinoma (OSCC) is diagnosed in 61% of oral tumors in the cat, and typically occurs in older cats. Squamous cell carcinoma most often originates on the gingiva and infiltrates deeply; another common location is the ventral aspect of the tongue. With gingival tumors bone invasion is usually evident on radiographs. Especially in the cat, the extent of bone involvement is often much greater than was anticipated from the clinical appearance of the lesion. In the cat regional lymph node metastasis is common, contrary to the dog, but pulmonary metastasis occurs infrequently.

The therapeutic options for OSCC in the cat are limited, and the prognosis generally poor. Because of the highly invasive nature of this tumor in cats, it is often very difficult if not impossible to obtain surgical margins of adequate width, resulting in local recurrence. Oral squamous cell carcinoma in the cat is also much less radiosensitive compared to the dog. Overall, the one-year survival rate in cats is less than 10% and the median survival time in the order of two months. Palliative radiation has not been found to provide comfort or slow down the disease process.

Palliative medical treatment remains the treatment of choice for most OSCC feline patients. In general, the aim is to provide comfort and maintain an adequate nutritional status. For this, non-steroidal...
anti-inflammatory drugs (NSAIDs) and feeding tubes are generally used. Some studies have demonstrated that COX enzymes (COX 2 in particular) are overexpressed in OSCC and that its inhibition with NSAIDs may slow tumor growth. However, not all cats with OSCC show increased expression of these enzymes, and thus the rationale for the use of COX inhibitors remains a controversial topic.

**Fibrosarcoma**

Fibrosarcoma is the second most common oral tumor type in the cat (13%). In spite of its relatively common occurrence, little is known about its biologic behavior and response to treatment. It is generally accepted that fibrosarcoma typically occurs in older cats without a specific predilection site. This tumor is locally very invasive; the regional lymph nodes are rarely involved but lung metastasis occurs occasionally. Wide or radical excision is generally the treatment of choice for oral fibrosarcoma in the dog and cat. The prognosis for the individual patient largely depends on whether tumor-free margins can be obtained.

**Osteosarcoma**

Osteosarcoma of the mandible or maxilla, presenting as an oral tumor, is much less common in the cat than in the dog, only accounting for 2.4% of oral tumors. The radiological picture is usually atypical. Similar to squamous cell carcinoma and fibrosarcoma, osteosarcoma occurs more frequently in older cats. The recommended treatment is wide or radical excision, but the prognosis is poor, with a reported mean survival time of 5.5 months. The metastatic potential for osteosarcoma of the skull would appear similar to that of appendicular osteosarcoma.

**Malignant Melanoma**

Malignant melanoma is rare in the cat, accounting for only 0.8% of oral tumors, but it would appear to carry a grave prognosis in this species. In one study, all 5 cats with oral malignant melanoma died or were euthanized within 135 days with metastases present.

**Odontogenic Tumors**

Odontogenic tumors are generally considered to be rare in all species, including the cat. Unique to the cat is the feline inductive odontogenic tumor.

**Feline Inductive Odontogenic Tumor**

This tumor type was originally described in young cats as inductive fibro ameloblastoma. This tumor is characterized by ameloblastic epithelial cells arranged around dental pulp like stroma. The rostral maxilla is the most common site of occurrence. The tumor may be locally invasive, but metastasis has not been recorded.

**Amyloid Producing Odontogenic Tumor**

This tumor type is rare in dogs and cats and may also present clinically as an epulis. It has previously been referred to in the veterinary literature as a calcifying epithelial odontogenic tumor (CEOT), although it was found that it is not the counterpart of the human CEOT. The term, amyloid producing odontogenic tumor, would therefore seem more appropriate for this lesion. The tumor bears some resemblance to an ameloblastoma. The most prominent feature is the presence of amyloid which tends to calcify. Recurrence after excision has been reported, but metastasis does not take place.

**Ameloblastoma**
The central or intra osseous ameloblastoma is one of the most common odontogenic tumors in man, but it is uncommon in dogs and rare in cats. Ameloblastoma in the dog is often characterized by focal keratinization, and this may also occur in the cat. Metastasis has not been described.

**Epulides**

The term epulis is a descriptive clinical term applied to a variety of neoplastic and non neoplastic tumors that appear on the gingiva as circumscribed elevated lesions, and that are especially common in dogs. In all species, the nature of these lesions should be determined histologically. Epulides in cats are rare and may include peripheral odontogenic fibroma, amyloid-producing odontogenic tumor, peripheral giant cell granuloma, and focal fibrous hyperplasia. Focal fibrous hyperplasia is non neoplastic and coincides with what has been referred to as fibrous or fibromatous epulis. Chronic gingivitis may lead to nodular proliferation and granulation tissue. These lesions may be associated with underlying periodontal disease.

**Tongue and Salivary Gland Tumors**

**Tongue Tumors**

Tongue tumors in the cat are usually squamous cell carcinoma and typically arise on the ventral surface. Successful treatment is rare and the prognosis is very poor in this species.

**Salivary Gland Tumors**

Salivary gland tumors in cats are rare, and typically occur in older animals with no apparent breed or sex predilection. Most salivary gland tumors are epithelial in origin and malignant. Effectiveness of treatment for salivary gland tumors in cats has not been determined. The incidence of local recurrence after surgical excision would appear to be high and metastasis is common. Radiation therapy can be an effective adjunctive treatment.

**References**


