



VETERINARY  
cancer care

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## ORAL TUMORS - SQUAMOUS CELL CARCINOMAS

These notes are provided to help you understand the diagnosis or possible diagnosis of cancer in your pet. For general information on cancer in pets ask for our handout "What is Cancer". Your veterinarian may suggest certain tests to help confirm or eliminate diagnosis, and to help assess treatment options and likely outcomes. Because individual situations and responses vary, and because cancers often behave unpredictably, science can only give us a guide. However, information and understanding for tumors in animals is improving all the time.

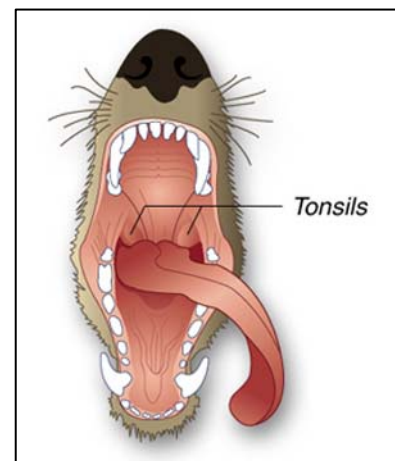
We understand that this can be a very worrying time. We apologize for the need to use some technical language. If you have any questions please do not hesitate to ask us.

### ***What are squamous cell carcinomas?***

**Squamous cell carcinomas** are malignant cancers originating from the lining cells of the mouth. They are locally invasive and often recurrent. Only 5-10% of tumors arising in the gums (gingiva) metastasize (spread) but cancers in the tongue often metastasize to local lymph nodes (glands). Cancers that originate from the tonsil metastasize quickly to the other tonsil, lymph nodes of the throat and other parts of the body.

### ***What do we know about the cause?***

The reason why a particular pet may develop this, or any cancer, is not straightforward. Cancer is often seemingly the culmination of a series of circumstances that come together for the unfortunate individual.



Cancer is a genetic disease of somatic cells with "external" contributory factors such as chemical, physical and traumatic. Papilloma viruses may be implicated in some of these tumors but the role of other viruses in cats is uncertain. Tonsillar tumors are more common in large cities but rare in rural areas suggesting environmental chemicals may cause some of these tumors. In people, it is suggested that as many as seven genetic 'hits' (episodes of gene damage) are required to induce full cancerous growth, a process that takes approximately five years.

### ***Why has my pet developed this cancer?***

Some animals have a greater tendency (genetic susceptibility) to cancer and some breeds have far more of these cancers than others. Your pet may have been infected with species-specific papilloma viruses or have had contact with everyday environmental chemicals that can help to induce or promote cancer.

### ***Are these common tumors?***

The gingival tumors are common and occur in adult dogs and cats without breed or sex predilection. Dogs are usually middle-aged and slightly younger than those developing other

types of malignant tumors at this site. Large dogs are more likely to have tumors and male dogs, particularly German Shepherd dogs, have the highest prevalence of tonsillar tumors. Oral tumors are common in cats. Ten percent of all feline neoplasms occur in the mouth and of these almost 90% are malignant. 75% of oral tumors are squamous cell carcinomas.

### ***How will this cancer affect my pet?***

These tumors are usually noticed as swellings on the gums that frequently ulcerate and bleed and may become secondarily infected. Other common clinical signs, include drooling saliva, difficulty in eating, displacement or loss of teeth and facial swelling. These are often noted before lumps in the tongue or tonsils are noticed. There may be pain and swelling of the local lymph nodes (glands). Tumors in the back of the throat (pharynx) are particularly painful and will prevent swallowing. A few tumors induce signs that are not readily explained by local or distal spread of the tumors. These are known as 'paraneoplastic syndromes'. In cats, abnormal hormone production by some cancers has induced increased blood calcium levels.



### ***How is this cancer diagnosed?***

Clinically, malignant oral tumors often have a fairly typical appearance. Clinical growth rate of oral tumors is a very important diagnostic factor. X-rays may be useful in detecting whether tumors have invaded the bones and to guide surgery. Loss of bone adjacent to the tumor usually means a poorer outlook (prognosis) because malignant gum tumors destroy bone whereas benign ones tend to make the adjacent bone grow.

Cytology, the microscopic examination of small samples of cells, rarely helps in the diagnosis of these tumors. Definitive diagnosis, prediction of behavior (prognosis) and a microscopic assessment of whether the tumor has been fully removed rely on microscopic examination of tissue (histopathology). This is done at a specialized laboratory by a veterinary pathologist. The piece of tissue may be a small part of the mass (biopsy) or the whole lump but only examination of the whole lump will indicate whether the cancer has been fully removed. Histopathology also rules out other cancers.

Most of these tumors invade the bone of the jaw. These need wide surgical margins usually including substantial parts of the jaw bone. This type of tissue will need decalcifying so it may take be a few weeks before the final histopathology results are available.

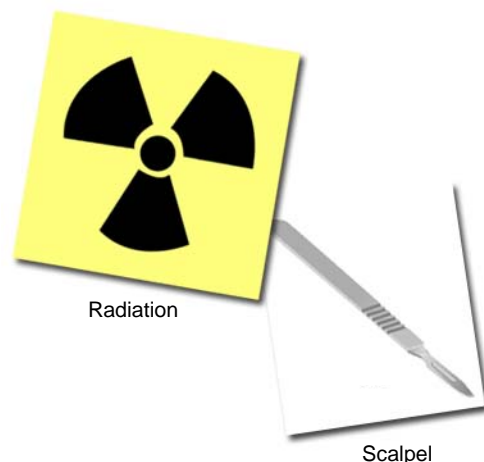
### ***What types of treatment are available?***

Surgical removal is the standard method of treatment for all these tumors. The invasive cancers are difficult to remove completely so large pieces of the jaw bone may be removed (hemimaxillectomy or hemimandibulectomy). The complex and extensive surgery is often done at a referral treatment centre.

Surgery with post-operative radiotherapy is considered the best treatment in people but radiotherapy sometimes needs to be given every eight hours and is rarely available for animals.

Chemotherapy does not improve survival. Photodynamic therapy is used for superficial tumors in people but is not yet available in animals and most tumors are too deep at presentation for this treatment.

These tumors provoke an inflammatory reaction and reducing this can bring some clinical relief. Tumors of the tonsils and throat are painful and pain relief is needed.



### ***Can this cancer disappear without treatment?***

Curing infections, reducing inflammation and healing ulcers will help reduce superficial swelling but not cure the cancer. Very occasionally, spontaneous loss of blood supply to the cancer can make parts of it die but the dead tissue will still need surgical removal. The body's immune system is not effective at making these tumors to regress.

### ***How can I nurse my pet?***

After surgery, you will probably be provided with an "Elizabethan collar" to prevent your pet from interfering with the operation site. You may be requested not to examine the surgery but inability to eat or significant swelling or bleeding should be reported to your veterinarian. Your pet may require a special diet. If you require additional advice on post-surgical care, please ask.



### ***How will I know how this cancer will behave?***

Histopathology will give your veterinarian the diagnosis that helps to indicate how it is likely to behave. The veterinary pathologist usually adds a prognosis that describes the probability of local recurrence or metastasis (distant spread). The completeness of excision will be assessed and other diagnoses ruled out.

### ***When will I know if the cancer is permanently cured?***

'Cured' has to be a guarded term in dealing with any cancer.

In dogs, gingival tumors usually invade the bone and often recur after surgery but few metastasize. Survival twelve months post-surgery is 44%. Tumors closer to the front of the mouth are usually easier to treat so have a better prognosis. 50% of tongue tumors recur. They metastasize to the local lymph nodes but rarely further.

Tonsillar squamous cell carcinomas almost invariably metastasize to local lymph nodes and two thirds show distant metastasis, to the lungs for example. They often present as a lump in the throat that may indicate they are already present in the lymph nodes. They spread to many different organs, including the bones. Survival time is months at the most.

These cancers have a poor prognosis in cats because of surgical complications post-operatively. Only 20% of these cats will survive beyond 12 months. Combinations of surgery, radiotherapy, chemotherapy and hyperthermia treatments do not significantly affect survival rates. Staging of the tumor may be predictive with greater spread at the time of surgery, indicating shorter survival. Tumors at the front of the mouth, and not crossing the midline if they are in the upper jaw, have the best outlook.

### ***Are there any risks to my family or other pets?***

No, these are not contagious tumors and are not transmitted from pet to pet or from pets to people.