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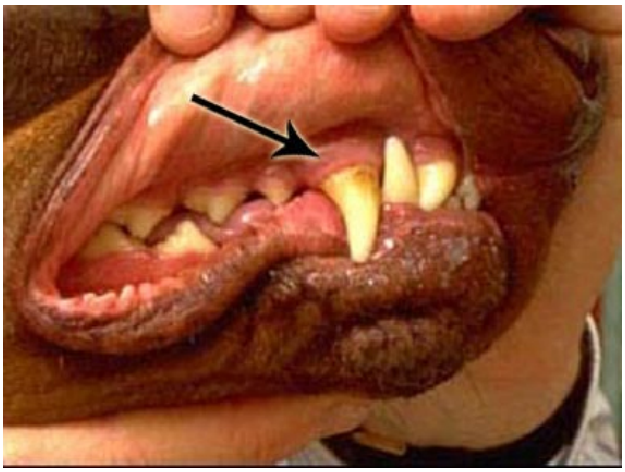
# Oral Tumors - Melanoma

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 about tumors and their treatment in animals is improving all the time.

We understand that this can be a very worrying time. If you have any questions please do not hesitate to ask us.

## What is an oral melanoma?

Oral melanoma ("**malignant melanoma**" or "**melanosarcoma**") is a tumor of melanin pigment producing cells (melanocytes) in the mouth. In the mouth, these cancers are rapidly growing and unfortunately are rarely completely cured by surgical removal. Recurrence in the mouth and spread to other parts of the body (metastasis) are common.



## 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 the culmination of a series of circumstances that come together for the unfortunate individual.

In people, environmental and host factors are important in the development of melanoma. Ultraviolet irradiation from the sun is the most important environmental factor. In people, cancers associated with irradiation occur in areas of the body that have not been directly exposed; irradiation before birth and radiation hyperthermia treatment have been followed by tumor growth in people. We do not know if this is the case in dogs and cats.

**Melanomas behave differently when they occur in different parts of the body, indicating that local host factors influence their behavior.**

## Why has my pet developed this cancer?

Melanocytes are fragile cells and easily damaged. Cancer mutations develop in response to cell damage and, because the more divisions a cell undergoes the more probable is a mutation to occur, cancer is more common in older animals.

## Is this a common tumor?

Melanomas are the most common malignant oral canine tumor. The gums and inside of the mouth are the most common sites. Tumors are most frequent in animals with a lot of pigment and male dogs may be more predisposed to develop the cancers. Studies on breed prevalence have varied between countries but the average age of affected dogs is 11 years.

Malignant melanomas are rare in the cat.

## How will this cancer affect my pet?

These tumors are usually noticed as swellings on the gums. Many melanomas are black in color. The swellings frequently ulcerate and bleed, and may become secondarily infected, causing bad breath. Bad breath is characteristic of melanomas but can occur with other tumors, or with tooth and periodontal gum disease. Other common clinical signs of an oral tumor include drooling saliva, difficulty in eating, bleeding, displacement or loss of teeth, facial swelling, pain and swelling of the local lymph nodes.

## How is an oral melanoma diagnosed?

Clinically, malignant oral tumors often have a typical appearance. The pigment is not an infallible guide as some are not pigmented ('amelanotic') and other types of tumors may also contain pigmented or appear dark.

X-rays (and CT scan when available) may be useful to detect whether tumors have invaded the bones and to guide surgical decisions. Loss of bone adjacent to the tumor usually means a poorer outlook (prognosis).

Accurate diagnosis of these tumors requires microscopic examination of tumor tissue. Cytology, the microscopic examination of a small sample of cells, may be diagnostic in some cases. However, definitive diagnosis, prediction of behavior (prognosis) and an assessment of the completeness of tumor removal rely on microscopic examination of tissue (histopathology). Histopathology also rules out other cancers. Your veterinarian will submit either a small part of the mass (biopsy) or the whole lump to a specialized laboratory, where a veterinary pathologist will examine and diagnose the lesion. If your veterinarian submits the entire mass, the pathologist may be able to indicate whether the cancer has been completely removed.

Most malignant oral melanomas invade the bone of the jaw. For complete removal, they need wide surgical margins usually including substantial parts of the jawbone. Tissue samples that contain bone will need decalcifying so it may take be a few weeks before the final histopathology results are available. The pathologist may also need to remove (bleach) the pigment to check malignancy with greater certainty.

## What types of treatment are available?

Surgical removal is the standard method of treatment for all oral tumors. The invasive cancers are difficult to remove completely so large pieces of the jawbone may be taken out (hemimaxillectomy or hemimandibulectomy). If your pet requires one of these complex and extensive surgeries, your veterinarian may refer you to a specialist at a veterinary referral center, The surgeon may want to have a CT scan performed (if available) to determine how much tissue to remove to achieve complete excision.

"Melanomas do not respond well to chemotherapy or radiation therapy."

Melanomas do not respond well to chemotherapy or radiation therapy. Immunotherapy with interferons has not improved survival in people. Currently, research is focussed on combining immunotherapy (cytokine and gene therapy) with other treatments.

"In 2007, the first therapeutic vaccine for the treatment of canine oral melanoma was conditionally approved for use in the United States."

In 2007, the first therapeutic vaccine for the treatment of canine oral melanoma was conditionally approved for use in the United States by the USDA. During the conditional time period, this vaccine will only be available for use by veterinary oncologists, but over time may become more widely available. Your veterinarian will advise you its availability in your area.

## Can this cancer disappear without treatment?

Treating secondary infections and healing ulcers will help reduce superficial swelling and discomfort, but will 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 regress.

## How can I nurse my pet?

After surgery, your pet will need to wear an "Elizabethan collar" to prevent damage to the surgical site. If your pet also requires a special diet, this will be discussed with you. Your veterinarian may request that you do not try to examine the surgery site in the early post-operative period. However, if your pet is unable to eat or develops significant swelling or bleeding, you need to contact your veterinarian immediately. If you require additional advice on post-surgical care, please ask.

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

"The histopathology report will give your veterinarian the diagnosis that helps to indicate how it is likely to behave."

The histopathology report 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). If the complete mass was submitted for examination, the pathologist will also assess the completeness of excision out.

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

The outlook for dogs and cats with oral melanomas is poor. The underlying bone is invaded by over half of these tumors. Approximately 70% of tumors metastasize to regional lymph nodes (glands) and almost the same percentage to distant sites, usually the lungs.

The average post surgical survival time has been only about three months with three out of four afflicted dogs dying within six months and nine out of ten within 24 months. Survival rates are however improving. Survival is unrelated to sex, site, rate of growth, histological type, amount of pigment or cancer size.

Tumor stage (how far it has spread) is correlated with survival time. If there is no involvement of the local lymph nodes and no X-ray evidence of lung tumors, survival time is improved by surgery (242 days versus 65 days). Partial removal of the jaw reduces local recurrence of the tumors but does not always prevent the spread elsewhere.

**At this time, no data is available about the efficacy of the canine oral melanoma vaccine.**

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

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

*This client information sheet is based on material written by: Joan Rest, BVSc, PhD, MRCPath, MRCVS*
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