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## PLASMACYTIC TUMORS

### ***Plasma cell biology***

Plasma cells are part of the body's immune system. They are formed from 'B'- type lymphocytes. Their function is to make antibodies (immunoglobulins) to combat disease. The cells are normally found in lymphoid tissue, and within mucosal surfaces such as the intestine. They move into other tissues such as the skin when antibodies are required, for example during bacterial infection of hair follicles.

### ***What is this tumor?***

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 eliminated 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 do not understand anything please do not hesitate to ask us.

**Plasmacytomas** in the skin are usually solitary benign tumors that grow rapidly but rarely recur after surgical removal. Malignant tumors are very rare.

**Extramedullary plasmacytoma** is the name sometimes given to tumors that arise in the gastro-intestinal tract (particularly the mouth and rectal (back passage) part of the intestines). These tumors tend to be more malignant than those in skin and recur locally and spread to the local lymph nodes ("glands"). Sometimes more than one tumor is present.

**Multiple myeloma** is a rare, malignant plasma cell cancer affecting the bone marrow and other blood-producing organs.

### ***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 non-lethal genetic damage to cells (mutations in the DNA genome). Causes include radiation, chemicals, hormones and infections. We know little about the specific stimuli that make plasma cell tumors develop but in humans, risk factors include exposure to petroleum products and radiation. Chronic Herpes viral infection has also been suggested.

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

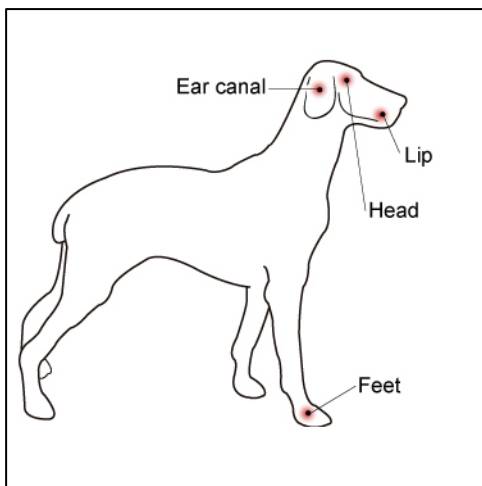
Some animals have a greater tendency (genetic susceptibility) to cancer. Some breeds have far more cancers than others, often of specific types. In other cases, an animal has been exposed to factors in the environment that cause or promote cancer.

### ***Is this a common tumor?***

These are uncommon skin tumors in dogs, but occur mainly in middle-aged to older animals with an average age of occurrence of 10 years. They are rare in cats. The tumors can be difficult to diagnose and have been given several different names so the precise incidence is uncertain.

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

Skin plasma cell tumors are lumps  $\frac{1}{4}$  to  $\frac{3}{4}$  inches in diameter. They may be hairless, ulcerate, bleed or have physical effects on the surrounding structures. Most are on the head, feet, lips and ear canal. Animals are not ill. These tumors are usually cured by surgical removal.



Oral plasma cell tumors are usually on the lips and gums and are similar in size to those in the skin. They may ulcerate and bleed and cause discomfort when your pet is eating.

Plasma cell tumors in other parts of the digestive tract usually have clinical signs associated with digestive problems or difficulties in passing motions. These clinical signs are the same for the many different types of tumors that occur at these sites.

Bone plasma cell tumors (multiple myeloma) cause pain and lameness. There are often signs of general disease such as loss of condition and fatigue.

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

Clinically, skin tumors resemble several other types of tumor so definitive diagnosis relies upon microscopic examination of tissue.

Various degrees of surgical sampling may be needed such as needle aspiration, punch biopsy and full excision. Cytology is the microscopic examination of cell samples. This is used for rapid or preliminary tests and can be diagnostic for these tumors. More accurate 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. Only examination of the whole lump will indicate whether the cancer has been fully removed. Histopathology also rules out other cancers.



In cases of multiple myeloma with bone disease, blood tests can help to indicate the nature of the tumor. High levels of monoclonal immunoglobulin (myeloma protein) are present. There may also be increased blood calcium and abnormal protein in urine.

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

Skin tumors are usually removed surgically and no further treatment is required.

Oral tumors are more difficult to remove surgically and this may account for the higher rate of recurrence. Tumors in other parts of the digestive tract are treated surgically. Occasionally chemotherapy is used following this.

Multiple myeloma may require symptomatic therapy for pain and for other signs such as kidney malfunction. Chemotherapy is sometimes used.

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

Cancer rarely disappears without treatment but as development is a multi-step process, it may stop at some stages. The body's own immune system can kill cancer cells but it is rarely 100% effective. Rarely, loss of blood supply to a cancer will make it die but the dead tissue will probably need surgical removal.

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

Preventing your pet from rubbing, scratching, licking or biting the tumor will reduce itching, inflammation, ulceration, infection and bleeding. Any ulcerated area needs to be kept clean.

After surgery, the operation site similarly needs to be kept clean and your pet should not be allowed to interfere with the site. Any loss of sutures or significant swelling or bleeding should be reported to your veterinarian. Specific advice on care following oral or rectal tumors may be given by your veterinarian. If you require additional advice on post-surgical care, please ask.



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

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

If the lump is sent for histopathological diagnosis, the diagnosis can be confirmed, the completeness of excision assessed and other diagnoses ruled out.

For skin tumors, the diagnosis usually indicates there can be a complete cure.

Oral and intestinal tumors may recur locally. A few in the intestinal tract are multiple or spread elsewhere. Both the local effects (pain and inability to function normally) and distant spread may cause significant distress to your pet, particularly in multiple myeloma.

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

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

