



Veterinary Cancer Care, P.C.

2001 Vivigen Way

Santa Fe, NM 87505

www.vetcancercare.com

Phone: (505) 982-4492 Fax: (505) 982-1701 info@vetcancercare.com

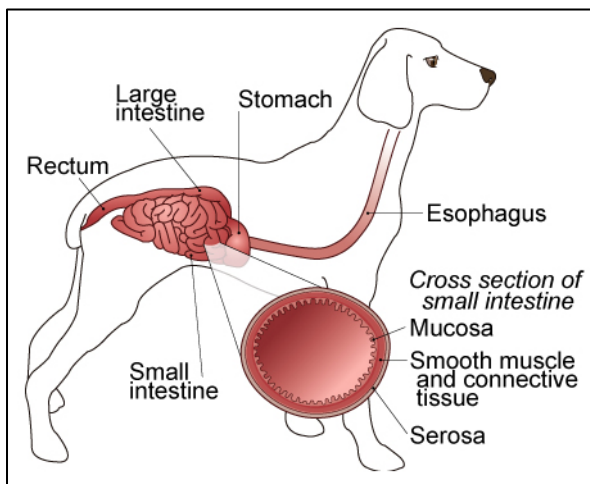
DIGESTIVE TRACT MUSCLE AND CONNECTIVE TISSUE TUMORS

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.

What are these tumors?

Muscle (called "smooth muscle") and fibrous connective tissues form the framework (stroma) that holds other tissues together in the organs of the body. They enable these organs to contract and stretch as part of their function, for example in digestion of food. A number of different tumors can develop from the cells of these tissues.



Granular cell tumors are rare, slow growing tumors, probably originating from primitive, precursor cells that have the ability to make many different types of connective tissue cells including muscle and fibrous tissue. This tumor is usually in the tongue and only one has ever been recorded as spreading (metastasizing) so they are almost always benign (non-spreading).

Benign (**leiomyoma**) and malignant (**leiomyosarcoma**) tumors originate from the muscle of the digestive tract, usually in the stomach or intestines. They form nodules

that obstruct the passage of food. Some contain fibrous tissue and some other tumors are formed only from fibrous tissue or from other supporting tissues such as nerves. Benign tumors end in "-oma" and malignant ones in "-sarcoma".

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 induction is a multistep process called tumor progression. Some cancers never progress past the first stages so remain benign. Others progress rapidly.

Why has my pet 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. The more divisions a cell undergoes, the more probable is a mutation so cancer is more common in older animals.

Are these common tumors?

Granular cell tumors are uncommon in dogs but most common in the tongue with a mean age of 9 years. They are rare in cats.

Leiomyomas are rare but most common at the junction of the oesophagus and stomach. The tumors may be multiple. In the intestine they are usually solitary. Malignant tumors are even less common. All the other stromal tumors are rare.

How will these cancers affect my pet?

Granular cell tumors are slow growing and because they cause so few problems, have often been present for years before removal.

Leiomyomas cause obstruction and ulceration of the gut. In the stomach they may be multiple but small tumors rarely cause clinical signs. In the intestine, they are usually solitary. Occasionally they bleed sufficiently to cause anemia and blood in the feces. Local inflammation of the inside lining of the abdomen (peritonitis) is present in up to half the cases. An unusual feature of these tumors is their ability to induce low blood sugar concentrations. This can produce clinical signs including weakness, confusion and collapse.

How are these cancers diagnosed? How is this cancer diagnosed?

Cancer is often suspected from the clinical signs. X-rays may be useful in detecting abdominal tumors. Blood tests are not diagnostic but sometimes indicate low blood sugar or if the tumor is bleeding internally.

In order to identify the tumor, it is necessary to obtain a sample of the tumor itself. Small biopsies taken via an endoscope may not be diagnostic and a larger surgical specimen may need to be obtained by exploratory surgery. This is then examined by histopathology (microscopic examination of specially prepared and stained tissue sections). This is done at a specialized laboratory where the slides are examined by a veterinary pathologist. Examination of the whole lump will also indicate whether the cancer has been fully removed. Histopathology also rules out other more serious cancers.



Abdominal X-Ray

What types of treatment are available?

Treatment is surgical removal of the tumor.

Can these cancers disappear without treatment?

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Cancer rarely disappears without treatment but as development is a multi-step process, it may stop at one of these stages. The body's own immune system can kill cancer cells but it is rarely 100% effective. Rarely, reduced blood supply will make leiomyomas partly die and become fibrous. This may reduce the size of the cancer.

How can I nurse my pet?

After surgery, the operation site 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. Your pet may require a special diet and you may be asked to check that your pet can pass urine and feces or to give treatment to aid this.

If you require additional advice on post-surgical care, please ask.

How will I know how the 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).

When will I know if the cancer is permanently cured?

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

Granular cell tumors are benign and usually cured by surgical removal.

Leiomyomas and leiomyosarcoma are a continuum from benign to malignant so prediction of behavior is not always easy. However, although they may spread (metastasize), this is late in the disease and often only to the local lymph nodes (glands). The outlook is usually good following surgery.

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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