

## Vascular 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 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 a vascular tumor?

This is a tumor of the blood vessels of the skin or subcutaneous tissue. Some are benign (**hemangioma**) but a few are malignant (**hemangiosarcoma**). The benign tumors are usually cured surgically, but a small number may undergo malignant transformation, particularly when numerous tumors are present. The malignant tumors may spread to other parts of the body (metastasize). In a few cases, the malignant tumors may already be present in internal organs such as the spleen and heart, and the skin tumor is secondary or represents a metastasis.

### 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.

Sunlight may be implicated in the cause of superficial tumors. Similarly, in cats, sunlight is a cause of malignant tumors (hemangiosarcomas). Little is known about the cause of hemangiosarcomas in dogs but sunlight may be involved in some cases.

### Is this a common tumor?

"Thin-skinned, light-colored breeds of dog have a predilection for benign tumors."

Thin-skinned, light-colored breeds of dog (whippets, greyhounds, bull terriers) have a predilection for benign tumors (hemangiomas). They are rare in cats.



Hemangiosarcomas are moderately common with a predilection for German Shepherd dog, Golden Retriever and Border Collies. The tumors are uncommon in cats but the incidence is increasing. They are usually on the ears, head or paws with a special variant found on the abdomen.

## How will this cancer affect my pet?

The most obvious effects of these tumors are dark lumps under the skin, sometimes with intermittent bleeding, particularly in cats. Some ulcerate. Both benign and malignant tumors may be multiple and a few benign tumors may become malignant in time.

When tumors are present in internal organs, heart failure, respiratory difficulty and acute collapse are common.

**"In cats, ventral abdominal angiosarcoma is an aggressive variant resulting in a diffuse "bruised" appearance to the underside of the abdominal wall."**

In cats, ventral abdominal angiosarcoma is an aggressive variant resulting in a diffuse "bruised" appearance to the underside of the abdominal wall. This tumor may originate from lymphatics or blood vessels.

## How is this cancer diagnosed?

Clinically, the tumors can be confused with inflammation, other dark-colored masses including pigmented tumors, or bleeding due to trauma (hematomas). Accumulations of sweat and keratin in hair follicles may also be dark in color and resemble these tumors. Distinction of benign and malignant vascular tumors requires microscopic examination.

In order to identify the tumor definitively, it is necessary to obtain a sample of the tumor itself. Sampling techniques may include fine needle aspiration, biopsy, or excision of the entire mass. Needle aspiration for microscopic examination of a small cell sample (cytology) is not diagnostic. Histopathology, the microscopic examination of specially prepared and stained tissue sections, is necessary for accurate diagnosis and prognosis (prediction of behavior). Your veterinarian will submit the samples to a specialized laboratory for examination and diagnosis by a veterinary pathologist. Sometimes, diagnosis of malignant tumors can be difficult on small pieces of tissue so examination of the whole lump is preferable. This will also allow staging (determining the extent of tumor spread), and assessment of the adequacy of surgical removal, which will improve prediction of its behavior.

## What treatment is available?

Treatment is surgical removal. No other treatment has been successful.

## 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 some cancer cells but is not effective against this type.

## How can I nurse my pet?

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

After surgery, you need to keep the incision site clean and dry and prevent your pet from interfering with it. Report any loss of stitches or significant swelling or bleeding to your veterinarian. If you require additional advice on post-surgical care, please ask.

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

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



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**"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).

Many of these tumors are benign and surgical removal is curative, but if left for long enough they may become malignant.

Hemangiosarcomas are potentially recurrent and metastatic. If the tumor is only in the skin, the prognosis is better than if there are other tumors in internal organs. A life expectancy of 1 to 3 years with spread to other organs in 2/10 cases was found in one survey. Some pathologists stage tumors by depth of invasion into the cutaneous structures. Stage I is the most superficial and Stage III tumors have invaded underlying muscle. Treatment of stage I tumors by complete excision is considered curative. Median survival of dogs with stage II and III tumors is quoted as 225 to 275 days following surgery with deaths due to recurrence or metastasis.

In a few cases, there may be multiple internal tumors in sites such as lung, spleen, liver, heart, skin and bone. In these cases, heart failure, respiratory difficulty and collapse from internal hemorrhage are common.

**"Feline ventral abdominal angiosarcoma infiltrates extensively and is frequently recurrent but again, metastasis is rare."**

In cats, hemangiosarcomas frequently recur locally but have a low incidence of metastasis. Feline ventral abdominal angiosarcoma infiltrates extensively and is frequently recurrent but again, metastasis is rare.

### **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 pet to people.

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

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