

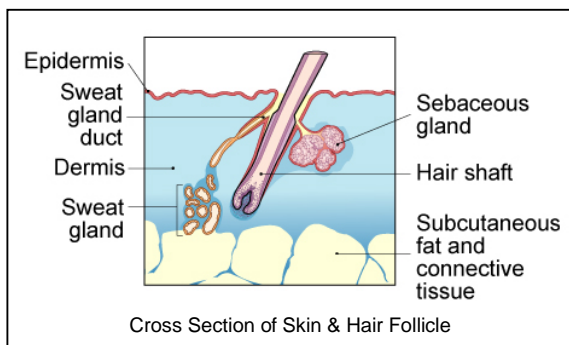
## Spindle Cell Tumors and Fibrosarcoma in Dogs

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 is this tumor?***

This is a tumor originating from the connective tissue of, or beneath, the skin. The tumor is diverse in appearance and several different cell lines produce tumors of similar appearance.



Some pathologists try to classify this group of tumors by their origin cells but this is not always possible. There are therefore several names that can be used for the tumors of this group including **fibrosarcoma**, **Schwannoma**, **peripheral nerve sheath tumor**, **neurofibroma** and **haemangiopericytoma**. Most are slow-growing and few have fibrocyte markers. The tumors often recur locally after surgical removal but spread to other parts of the body (metastasis) is rare.

### ***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.

Little is known about the cause of these tumors.

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

Some breeds have far more cancers than others, often of specific types. This tumor is more common in larger breeds of dog.

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

This is a common group of tumors in dogs, mainly in middle-aged to older animals and often on the limbs. However, incidence of the individual tumors that make up the group is uncertain because differentiation between them requires specialised and expensive marker studies. All the cell lineages within this group have the same prognosis, based on grading.

The average age of occurrence is 10 years but an aggressive fibrosarcoma (with a more serious outlook or prognosis) is occasionally reported in dogs less than one year of age.

Fibrosarcomas comprise variable percentages of the tumors diagnosed depending on an individual pathologist's criteria for inclusion. Some pathologists reserve the term "fibrosarcoma" for the most aggressive tumors of high grade. Whereas approximately 7% of tumors are diagnosed as spindle cell tumors, only about 1.5% are fibrosarcomas.

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

The tumor is nodular, usually on the limbs. It may ulcerate, bleed and become infected. The tumor often invades between adjacent structures so it can affect their function.

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

Clinically, this tumor often has a fairly typical appearance. Cytology is rarely diagnostic for this tumor type because few cells can be aspirated from the tumor and distinction from normal cells of the same type is difficult except in highly malignant tumors. Sometimes cytology can help to rule out other tumors and plan surgery. Accurate diagnosis relies upon 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. Histopathology also rules out other diseases including more serious cancers.



The histopathology report typically includes the name of the tumor and a grade. For this tumor, there are two grades, low and high, dependent upon the mitotic rate (number of cells dividing). Most are low grade. From this, the veterinary pathologist adds the prognosis (what will probably happen), which includes an indication of the probability of local recurrence.

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The pathologist is also able to indicate if the tumor has been completely removed. Many tumors appear well circumscribed but under the microscope, this is shown to be false because outside the tumor there may be further tumor cells infiltrating local structures. Many are on the limbs where large margins are surgically impossible so recurrence is the norm.

### ***What treatments are available?***

The treatment for this tumor is surgical removal, usually of the lump but occasionally more radical such as amputation of the limb.

These tumors do not respond to chemotherapy. The tumors are sensitive to radiotherapy, including interstitial brachytherapy, but direct beam radiotherapy has been discontinued because of side effects and disappointing results.

### ***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.

Lymphocytes of the body's immune system are often seen in this tumor but they are not effective in causing this type of tumor to regress.

### ***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. 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.

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).

This tends to be a recurrent tumor because it is not possible to get adequate surgical margins.

Low grade (slow growing) tumors have a recurrence rate of 25% after surgical excision. Median survival time is 2-4 years. A 2% metastatic rate has been quoted. High grade tumors (which are rare) have 62% local recurrence and median survival time of 49 weeks. Metastatic rate is quoted at 15% but this is higher than commonly experienced, probably because it is based on difficult cases referred to specialized centers.

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

No, this is not an infectious tumor and it is not transmitted from pet to pet or from pet to people.