

Skin – Hair Follicle 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.

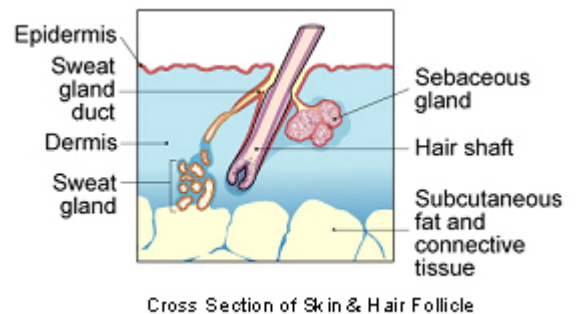
We understand that this can be a very worrying time. If you have any questions please do not hesitate to ask us.

What is a hair follicle tumor?

This is one of many similar tumors that arise by disordered growth of the hair follicles. Almost all of these tumors are benign and can be permanently cured by total surgical removal. Sometimes these tumors occur at multiple sites within the same animal.

"Almost all are benign."

Precise nomenclature or naming of the type of hair follicle tumor is usually irrelevant, as almost all are benign.



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.

A chemical called B-catenin is required for differentiation of skin cells into hair follicles. If there is over-production of this chemical in the body, hair follicle tumors develop. There is a genetic predisposition for these tumors to develop in certain breeds of dog.

Is this a common tumor?

These are common tumors in some breeds of dog.

The infundibular keratinizing acanthoma (synonyms are intracutaneous cornifying epithelioma, keratinizing epithelioma, keratoacanthoma) arises from the upper part of the follicle (infundibulum) so may have a pore opening onto the surface. These tumors may be solitary or multiple. They are mainly found on the back of the neck and trunk. The discharge is

keratin (similar to the skin's outermost layer), often with pus or blood because inflammation and secondary infection are common. Average age of affected animals is 5 years with a predominance in male animals. The Norwegian Elkhound and Keeshound are predisposed to multiple tumors.

The closely related trichoepithelioma is often multiple in German Shepherd dogs. They are usually found in middle-aged dogs but can occur in puppies. They may ulcerate and discharge pus and blood.

Trichoblastomas originate from hair matrical cells and are the most common type of follicular tumor in the cat. The rare tricholemmomas develop from the middle or lower segment of the follicle. There are numerous histological patterns for these tumors, but none of clinical significance.

Pilomatricomas (also known as pilomatrixoma, or the necrotizing and calcifying epithelioma of Malherbe) are hair matrical tumors (developing in the root of the hair), seen in dogs. They are usually solitary. The Kerry Blue, Poodle, Bedlington Terrier, Bichon Frise, Schnauzer and other breeds with continuous hair growth have higher susceptibility because of the greater mitotic (cell division) activity of their hair follicles, which are in the growth phase for longer. There is an extremely rare malignant form.

How will this tumor affect my animal?

The main problems are physical, because of the size and location of the tumor. Many superficial tumors ulcerate, ooze unpleasant bloodstained fluid and become secondarily infected.

The very rare, multiple, malignant form of pilomatricoma may spread throughout the body, often very rapidly and before the primary tumor is noted as a significant problem.

How is this tumor diagnosed?

Your veterinarian may suspect the presence of one of these tumors based on clinical examination findings. However, accurate diagnosis relies upon microscopic examination of tissue. Needle aspirates for cytology (microscopic examination of cell samples) is not diagnostic for these tumors. Diagnosis, prediction of behavior (prognosis) and assessment of whether the tumor has been fully removed rely on microscopic examination of surgically removed tissue from the suspect tumor (histopathology). Histopathology also rules out other cancers. Your veterinarian will submit the appropriate tissue samples to a specialized laboratory for diagnosis by a veterinary pathologist.

What types of treatment are available?

Treatment is usually surgical removal of the lump.

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Multiple infundibular keratinizing acanthomas are treated surgically, followed by antibiotics, clipping the entire hair coat and high doses of omega-3-fatty acids (usually from fish oil). Other anti-cancer drug treatments are expensive with potentially dangerous side effects.

Can this tumor disappear without treatment?

A tumor very rarely disappears without treatment. Very occasionally, spontaneous loss of blood supply to the cancer can make it die, but unless the dead tissue is surgically removed it will continue to ooze and smell. The body's immune system is 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 needs to be kept clean and your pet should not be allowed to interfere with the site. Report any loss of sutures or significant swelling or bleeding to your veterinarian. If you require additional advice on post-surgical care, please ask.

How will I know if the tumor is permanently cured?

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

Histopathology will give your veterinarian information to help indicate how the tumor is likely to behave. The veterinary pathologist usually adds a prognosis that indicates the probability of local recurrence or metastasis (distant spread).

Almost all these tumors are benign. They are cured by surgical excision. In some animals, it is possible that further tumors may develop at different sites.

If a trichoepithelioma is described as malignant, it is only of low-grade malignancy and unlikely to recur. They do not spread elsewhere.

"The very rare, multiple, malignant form of pilomatricoma is usually recognized very early..."



The very rare, multiple, malignant form of pilomatricoma is usually recognized very early as it spreads through the body and causes clinical illness.

Are there any risks to my family or other pets?

No, these are not infectious 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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