



Globavet Ltd

blk b, 1/f, chung yuen mansion, no 71b waterloo rd., kln, Hong Kong, 0000

Phone: 852 2711 0332

Email: info@globavet.com

Skin – Papillomas

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 papilloma of the skin?

Papillomas are benign, sometimes multiple, tumors caused by viruses. They are commonly known as "**warts**". The tumors often disappear spontaneously because the animal slowly develops immunity to them. Some papillomas may need to be removed surgically because they have become inflamed or infected, or bleed. They are permanently cured by total surgical removal and do not spread to other parts of the body, although there may be multiple tumors.

A **squamous papilloma** resembles a viral papilloma, but is without evidence of viral infection.

What do we know about the cause?

The reason why a particular pet may develop this, or any tumor, is not straightforward. Cancer is often the culmination of a series of circumstances that come together for the unfortunate individual.

After invading the cells, papilloma viruses attach themselves to the cell DNA (nucleic acid) and upset the normal regulatory mechanisms of cell division, so that the cell divides abnormally and more frequently. The virus activates growth-promoting genes in the DNA (oncogenes), at the same time it inactivates suppressor genes that would normally limit cell proliferation and alters the genes that regulate normal, programmed cell death.

There are many different types of papilloma virus and they occur in all species of animals, including people. Each species of animal has its own viruses and their related tumors. One of the best known is the verruca of human feet (plantar wart).

Why has my pet developed this tumor?

Your dog or cat has been infected with one of these papilloma viruses. Normal animals and people carry many viruses asymptotically (without any clinical signs). Over 130 subtypes of papilloma virus have been identified in people and eighty of these have been fully gene-sequenced. However, we know little about canine and feline papillomaviruses. Only two subtypes have been fully characterized in the dog and two subtypes are recognized in cats.

"Papilloma viruses... can survive for long periods in the environment."

Sometimes the viral infection is recent but in other cases, the immune system in an infected animal becomes less competent for some reason. In these cases, a papilloma virus that has been carried by that animal for a long time is then able to induce tumors. Papilloma viruses are very resistant to adverse conditions so can survive for long periods in the environment outside an animal. They gain access to the body when the skin becomes softened by moisture, through cuts and abrasions, or with the assistance of ticks or biting insects (fleas, mosquitoes, et cetera).

Is this a common tumor?

"Papillomas are uncommon in cats but common in dogs."

Papillomas are uncommon in cats but common in dogs. Clinical syndromes include multiple oral (mouth) papillomas in young dogs, solitary cutaneous (skin) papillomas in dogs of any age, venereal (genital) papillomas, eyelid or conjunctival papillomas and fibropapillomas. There are probably different viruses associated with different sites and in young and old animals.

In dogs, we see most of these tumors on the feet, or around and in the oral cavity.

Skin papillomas in cats are usually flat and plaque-like (sometimes scaly). There is also a fibropapilloma or sarcoid in cats caused by a special subtype of papilloma virus.

How will this tumor affect my pet?

The lesions are usually inflamed polyps ("warts"), but they may be flat, scaly plaques or inward growing hard masses. They may ulcerate or bleed. The inward growing ones may cause pain, particularly if they are on the feet.

There may be some genetic subtypes of animals who fail to recognize viral protein antigens. In these animals, immunity cannot develop and the tumors persist. We do not know about genetically determined immunity in dogs – but some dogs have persistent tumors. Some viral papillomas in man are associated with cancer and papilloma viruses have been found in feline cancers (squamous cell carcinoma).

How is this tumor diagnosed?

Clinically, most papillomas of the skin have a typical appearance, although the more common sebaceous tumors of dogs are very similar. Definitive diagnosis relies upon microscopic examination of the tumor. To obtain suitable samples of the tumor, your veterinarian may recommend one or more sampling techniques such as needle aspiration, punch biopsy and full excision of the tumor. Cytology is the microscopic examination of cell samples. This is used for rapid or preliminary screening tests, but accurate diagnosis usually requires microscopic examination of tissue (histopathology). Your veterinarian will submit the appropriate samples to a specialized laboratory where a veterinary pathologist will evaluate the tumor samples, make a diagnosis and predict the prognosis. Histopathology also rules out other diseases including more serious cancers.

What types of treatment are available?

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In humans, a topically applied immune-modifying agent that stimulates interferon production has successfully been used to treat papilloma virus lesions. It may have potential use in animals.

Can this tumor disappear without treatment?

Yes, the body's immune system can cause this type of tumor to regress in time (weeks to months).

How can I nurse my pet?

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

After surgery, you will need to keep the incision site clean and dry, and prevent your pet from rubbing, licking, biting or scratching at it. Report any loss of sutures or significant swelling or bleeding to your veterinarian. If you require additional advice on post-surgical care, please ask.

When will I know if the tumor is permanently cured?

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

"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, which describes the probability of local recurrence or metastasis (distant spread).

In healthy animals, the tumor is usually cured by surgery. If the viral infection persists because an animal has incomplete immunity, further tumors may develop. Rarely, the same site is affected by repeated re-growth of the tumor.



Are there any risks to my family or other pets?

"Although this is an infectious tumor, the viruses are species specific and not transmissible to humans."

No, although this is an infectious tumor, the viruses are species specific and not transmissible to humans. The tumors in dogs, cats and people are not related nor are they transmitted between species.

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

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