

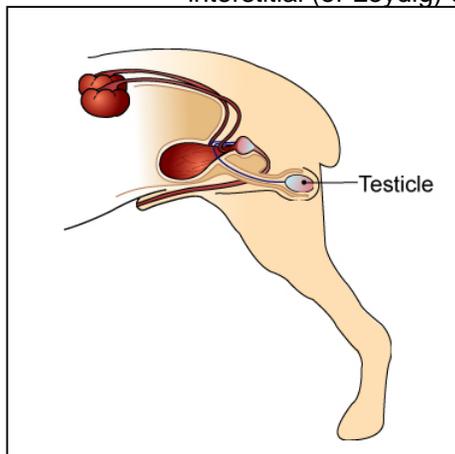
Testicular Tumors

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 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?

The testicle (testis) contains several different cell types. These include the germ cells, which make sperm, the supporting and nourishing Sertoli cells, and the hormone-producing interstitial (or Leydig) cells.



Any one or more than one of these cell types may become cancerous. The germ cells that make sperm may become cancers known as seminomas, the Sertoli cells become **Sertoli cell tumors** and the interstitial cells become **Leydig** or **interstitial cell tumors**. Most of the tumors are benign. The tumors are usually permanently cured by castration. This needs to be total (i.e. both testicles) as many tumors occur simultaneously in both testicles. Spread to other parts of the body (metastasis) is unusual if the cancer is surgically removed at an early stage.

Very occasionally, the germ cells develop abnormally to produce many different tissues and the tumor is called a **teratoma**. These are usually in younger dogs so may be congenital (present from birth). Most are benign in behavior.

What do we know about the cause?

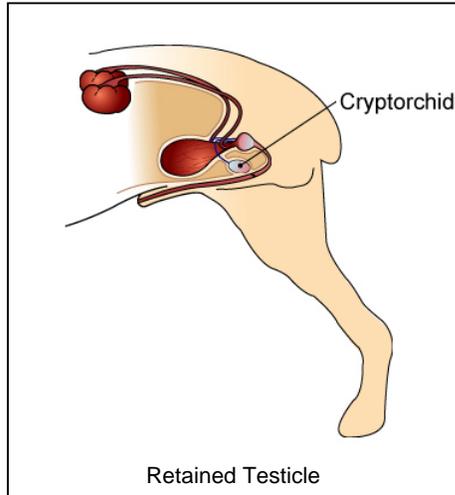
The reason why a particular pet may develop this, or any cancer, is not straightforward. Cancer is often seemingly the culmination of a series of circumstances that come together for the unfortunate individual.

Cancer causes include radiation, chemicals, hormones and infections. Some animals have a genetic tendency to develop some cancers. Little is known about the specific causes of these tumors but at some stage, they probably need hormones to enable them to grow.

Cancer induction is a multi-step process called tumor progression. Some cancers never progress past the first stages so remain benign. Others progress more rapidly.

Why has my pet developed this cancer?

Cryptorchidism (lack of descent of the testicle) is a predisposing factor for seminomas and Sertoli cell cancers.



In other cases, an animal has been exposed to factors in the environment that cause or promote cancer. These include hormones. The more divisions a cell undergoes, the more probable is a mutation so cancer is more common in older animals. Some breeds have more of these cancers than others.

Are these common tumors?

Testicular cancers are common tumors in dogs, mainly in older animals. As almost all domestic cats are castrated, the tumors are very rare in cats but similar types do exist, particularly in larger species of cats kept in zoos and not castrated.

How will the cancer affect my pet?

An effect of most tumors is an increase in size of one testicle, but sometimes shrinking of the other testicle is more obvious. Not all cancers are a visible lump. In particular, interstitial cell tumors may be small and approximately half of these are bilateral (in both testes). In other dogs, the clinical signs are those of prostate enlargement and difficulty in passing motions.

Some of the cancers, particularly those of Sertoli cell origin, produce female (estrogen) hormones. These hormones may cause hair loss, increased size of mammary glands and teats and make other dogs treat your dog as a bitch. Sometimes, this is more obvious than a change in the size of the testicles. The female hormones may also cause enlargement of the prostate.

Interstitial cells normally produce the male hormone (testosterone) but the tumor cells do not produce male hormones.

Malignant cancers are more common in undescended testicles. They are unusual in descended testicles. These cancers (usually seminomas or Sertoli cell tumors) may spread through the body by invading the lymph transport system with tumors in the pelvic area and occasionally into the body cavity. Weight loss due to loss of body fat and muscle may then occur.

How is this cancer diagnosed?

Clinically, these tumors are often suspected but they can be confused with other testicular problems including inflammation and infection.

Definitive diagnosis of the type of tumor, the stage it has reached and therefore prediction of behavior (prognosis) relies upon microscopic examination of tissue (histopathology). This is done at a specialized laboratory by a veterinary pathologist.

Blood hormone levels are not reliable for diagnosis of these tumors.

What treatment is available?

The usual treatment is surgical removal of both testicles. Other treatments have not been of assistance in the management of these tumor types.

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. Rarely, loss of blood supply (for example by twisting of the cord suspending the testicle) will make the cancer die but the dead testicle will still need surgical removal. The body's immune system is not effective in making these tumors to regress.

How can I nurse my pet?

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. Any loss of sutures or significant swelling or bleeding should be reported to your veterinarian. You may be asked to check that your pet passes urine and feces. 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).

In most cases, the diagnosis and prognosis indicate there can be a complete cure. Sadly, there are some cases where the diagnosis and prognosis indicate that surgical removal will only give remission and the cancer is already spreading. There are a few tumors that are difficult to predict behaviorally.

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.