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## PROSTATE 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.

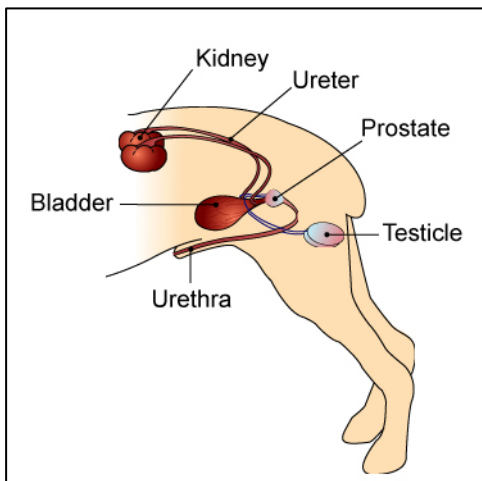
### ***What is this tumor?***

The prostate gland stores sperm after they have been made in the testicles and produces fluid that contains essential nutrients for the sperm. Cancers of the prostate are rare but usually involve the cells that make the fluid. Although true cancer is rare, non-cancerous overgrowth (hyperplasia) of the gland is common. Both the non-cancerous and cancerous growths have similar clinical signs. There is usually pain in the area and pressure on the back passage (rectum) interfering with passing faeces. Occasionally there is infection or interference with passing urine.

The true cancers frequently spread (metastasize) to the lymph nodes ("glands") and bones so there may be difficulty in walking.

### ***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.



Hormonal imbalance is important in the first stage of overgrowth (hyperplasia). Both excess female hormone (estrogen) (for example where there is cancer of a testicle) and excess male hormone (testosterone) can cause hyperplasia. Testosterone is converted to dihydrotestosterone within the prostate and then absorbed by the cell nuclei to activate genes required for cell growth. Hyperplasia of the gland occurs in all non-castrated male dogs as they age. Why a few dogs then develop cancer is uncertain.

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

All entire male dogs have some degree of enlargement of the prostate gland as they age. When corrected for age, there is usually a consistent relationship between the size of the gland and body weight. The exception is the Scottish terriers, which has a prostate on average four times the relative weight of that of other breeds. However, this breed does not have a higher incidence of prostatic cancer than other dogs.

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

Hyperplasia is a universal condition in older, non-castrated male dogs and causes clinical problems in some. Cancer of the prostate is rare.

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

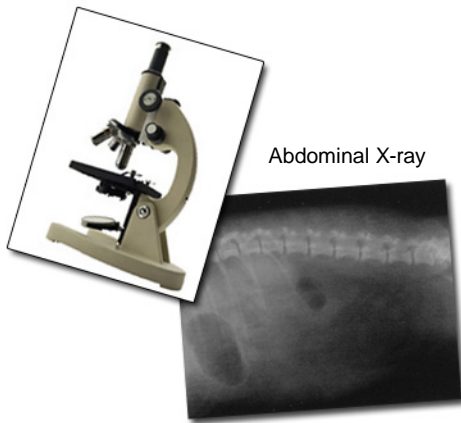
Enlargement of the prostate gland may be evident at 4-5 years of age and the incidence increases with age. Both the non-cancerous and cancerous growths have similar signs with pressure on the back passage (rectum) interfering with passing feces more common than interference with passing urine. There may be pain and secondary infection in the urine.

Malignant cancers may spread through the body by invading the lymph transport system and then seeding in bones, brain and other organs. Difficulty walking and weight loss due to loss of body fat and muscle may be seen.

Some of the malignant tumors induce signs that are not readily explained by the spread of the tumor. This is a paraneoplastic syndrome due to abnormal hormone production by the cancer. There may be increased blood calcium levels and deposits of excess bone on some limbs.

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

Cancer is often suspected from clinical signs (pain, difficulty passing feces, infection or blood in the urine and difficulty passing urine). X-rays may be useful in detecting the enlarged gland or the spread from a malignant cancer but a rectal examination is usually the best way of diagnosing the problem. In order to identify why the gland is enlarged (which hormone is likely to be implicated, whether there is infection or whether a malignant tumor is present), it is necessary to obtain a sample of the tumor itself. The usual method is by prostatic massage and urinary catheterization. Cytology, the microscopic examination of these cell samples, can then identify the most probable cause of the swelling. Histopathology, the microscopic examination of specially prepared and stained tissue sections, may be done if the gland is removed surgically. The histopathology is done at a



specialized laboratory where the slides are examined by a veterinary pathologist.

Malignancy is often shown by the tumor name ending in "carcinoma". This and the stage (how large it is and extent of spread) indicate how the cancer is likely to behave.

### ***What types of treatment are available?***

The best treatment for an enlarged prostate is castration. This removes the hormonal stimuli and hyperplasias will reduce in size except in the rare cases where the hormones are due to cancer of another gland, the adrenal. There are also drug treatments that act by blocking the formation of hormones or hormonal actions.

The malignant tumors are not responsive to castration, hormonal treatments or common chemotherapy agents. Surgery and radiotherapy are very difficult but surgical removal of the affected gland early in the disease combined with intra-operative irradiation has been reported to have some success.

### ***Can this cancer disappear without treatment?***

Cancer rarely disappears without treatment but as development is a multi-step process, most of the overgrowth of this gland stops before it becomes cancerous. The body's immune system is not effective in causing this type of tumor to regress. Rarely, loss of blood supply to a cancer will make it die but this is unlikely to be total.

### ***How can I nurse my pet?***

Ensuring your pet is able to pass feces and urine frequently is an important part of the management of these conditions. You may be recommended to change the diet and encourage your pet to drink more. After catheterization, ensure he is able to urinate freely.

After any 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 can pass urine and feces or to give treatment to facilitate this.



If you require additional advice on post-surgical care, please ask.

### ***How will I know how this cancer will behave?***

Cytology and response to castration will be a good indication that your dog does not have cancer. Cytology and/or histopathology may indicate cancer is present and, in most cases, surgical removal will only give remission and the cancer will recur or spread.

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

No, these are not infectious problems and are not transmitted from pet to pet or from pets to people.