



# BLADDER TUMORS IN DOGS

## Background

Bladder tumors are uncommon in dogs and cats. Like most tumors in animals and people, we do not know why they occur. Tumors typically arise from the lining of the bladder or urethra, and can also involve the prostate in male dogs.

## Clinical Signs

The most common presenting complaints for animals with bladder tumors are increased frequency and urgency of urination, with or without blood in the urine. *These signs are identical to the signs that dogs with urinary tract infections may show.* It is common for the signs to temporarily or partially improve with antibiotics, but this does not signify that an infection or inflammation is the root of the problem, as bladder tumors can make dogs more susceptible to infection as a secondary problem.

## Diagnosis and Initial Evaluation

When a pet comes in with signs of bloody urine or increased straining and urgency to urinate, a number of tests are performed. Initially, microscopic evaluation of a sample of urine with or without blood tests to look at overall health and organ function are performed. Following these, tests to evaluate the bladder and urethra are performed. These will usually take the form of X-ray dye studies or ultrasound. Most bladder tumors in dogs arise from the trigone, or the back part of the bladder where the urethra connects. If a tumor is suspected, X-rays of the lungs will often be obtained as well, to rule out tumor spread.

Following the completion of the imaging tests, a **biopsy** is often obtained. This is typically performed under the guidance of ultrasound by inserting a catheter into the urethra and dislodging a small piece of abnormal tissue, which can be submitted for microscopic evaluation, or through a small flexible scope attached to a camera that can be passed into the bladder. Occasionally, increased bleeding may be noted after the biopsy procedure. We will achieve a diagnosis in approximately 85% of the biopsies that we take (in 15%, the biopsy does not give us a clear picture as to the cause of the signs, and additional testing may be necessary). Sometimes, enough abnormal cells can be seen in the urine that we can feel reasonably confident about the diagnosis. The most common type of bladder tumor we see is called *transitional cell carcinoma*.

## Treatment and Prognosis

In those cases where the tumor occurs in a location where surgery is possible, surgery is the treatment of choice. When “complete” surgical removal can be performed, the average survival time with surgery alone is approximately 1 year.

Unfortunately, the location of most bladder tumors (in the trigone region) makes **complete** surgical removal often impossible. Medical therapy is often the most useful therapy for these patients. One drug that is often used is the aspirin-like drug **piroxicam**. Piroxicam improves the signs of straining, bleeding and urgency in approximately 75% of dogs, and approximately 20% of dogs will actually experience meaningful tumor shrinkage. Piroxicam alone results in an average survival time of approximately 6 months. Other, more standard antitumor drugs (**chemotherapy**) have also been used, and have results roughly the same as with piroxicam (most dogs improve, 1 in 5 have tumor shrinkage, approximately 6 months average survival). Recently, piroxicam/chemotherapy combinations have been evaluated, and these combinations appear superior to either treatment alone. Most pets tolerate chemotherapy very well, with only a small likelihood of developing worrisome side effects (please see the handouts CHEMOTHERAPY IN PETS and PIROXICAM for more detailed information about these treatments).

For animals that do not experience good improvement in signs from piroxicam and/or chemotherapy, local **radiation therapy** to the bladder

Several problems can develop as bladder tumors progress. These could include: (1) signs related to tumor spread to the lymph nodes, liver or lungs; (2) kidney failure as a result of blockage of the ureters (the tubes connecting the kidneys and bladder), or; (3) An inability to urinate due to blockage of the urethra. In the case of urethral blockage, temporary measures such as a **cystostomy tube** (a tube that allows the bladder to drain through the body wall) can be placed, which relieves the blockage. Most owners and pets are very satisfied with this procedure.