

Canine Bladder Tumors



Tumors of the lower urinary tract are relatively uncommon in dogs and even more rare in cats. The most common type of bladder tumor we see is called **transitional cell carcinoma**, which arises from the cells lining the bladder and urethra. The most common clinical signs of lower urinary tract cancer often mimic that of a urinary tract infection—increased frequency and urgency of urination (pollakiuria), blood in the urine (hematuria), and/or loss of bladder control (incontinence). In fact, many pets with bladder tumors have concurrent bladder infections and treatment with antibiotics results in a temporary response and “masking” of clinical signs. This often leads to a delay in the diagnosis of most bladder cancers giving the cancer time to progress. Therefore, the majority of cases we see are clinically advanced, and thus difficult, if not impossible, to cure.

Diagnosis of bladder cancer is often tentatively made via ultrasonographic imaging of the bladder but definitive diagnosis requires biopsy. Once a pet has been tentatively diagnosed with a bladder tumor by ultrasound, the next step often involves additional imaging to obtain a tissue sample for biopsy. This is often done using a small scope and camera (cystoscope) to directly visualize the mass and obtain image-guided biopsies in a minimally invasive manner. A diagnosis can also sometimes be obtained through ultrasound-guided catheterization, which is often cheaper and less invasive. Therefore, this latter method is often attempted first in the diagnostic work-up of suspected bladder tumor.

Transitional cell carcinoma is locally invasive within the bladder and has a relatively high rate of spread to other sites within the body, including the adjacent tissues (prostate, urethra, and ureters), local lymph nodes and lungs. Evidence of spread beyond the bladder, has been shown to result in a poorer response to therapy and a shorter survival times. Therefore, prior to initiation of therapy, it is important to accurately stage the pet to best determine which treatment(s) are necessary as well as the expected prognosis with such treatment(s).

In those cases where the tumor is small, located in a region within the bladder amenable to surgery (i.e. away from the urethra and ureters) and confined to the bladder itself (i.e. no metastatic disease present), surgery is the treatment of choice. When “complete” surgical removal can be performed, the average survival time with surgery alone is approximately 1 year with the majority of cases either recurring within the bladder despite aggressive surgery or spreading to other organs. Unfortunately, the majority of cases are too extensive or already metastatic at the time of diagnosis for surgical excision. Thus we are often faced with the need for additional, non-surgical treatment modalities including medical therapy (i.e. anti-inflammatory medications and chemotherapy), radiation therapy and palliative stenting. Thankfully, the majority of such non-surgical therapies are well tolerated, and while they rarely cure a pet of the disease, they can provide good quality of life for varying periods of time.

In cases where surgery is not an option, medical therapy is often the most useful treatment modality (either as a single agent or in combination with radiation and/or stenting) for these patients. Perhaps the most commonly prescribed drug that has been proven to benefit patients with transitional cell carcinoma is an aspirin-like drug, or NSAID, called **piroxicam (AKA Feldene)**. Piroxicam has been shown to improve 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. This drug is administered orally on a daily basis and is well tolerated by most pets. For more specific information on NSAIDs, please visit our website at <http://www.aspenmeadowvet.com/education/nsaids.html>. A more aggressive option for medical management includes the administration of traditional chemotherapy in addition to the previously mentioned piroxicam. The most commonly administered IV chemotherapeutic in dogs with bladder cancer is **mitoxantrone**. Other commonly used chemotherapeutics include **doxorubicin and carboplatin**. Reports show that dogs treated with piroxicam plus mitoxantrone survive on average 1 year from the time of their initial diagnosis.

In addition to these more traditional therapies, marked advances in **targeted radiation therapy** have allowed for additional treatment options for dogs with bladder tumors. Currently there are only a select few institutions with such radiation technology. Fortunately, this technology is available to our clients at Colorado State University Veterinary Teaching Hospital in Fort Collins.

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. For animals that do not experience significant improvement in clinical signs from piroxicam, chemotherapy and/or radiation therapy, or progress despite such therapy, **palliative urethral and/or ureteral stenting**, or placement of a **cystostomy tube** (a tube that allows the bladder to drain through a surgically placed port through the body wall) can be performed to help alleviate clinical signs. Most owners and pets are very satisfied with this procedure.

In summary, bladder tumors are often initially misdiagnosed as urinary tract infections and masking by treatment with antibiotics allows advancement of the cancer. Definitive diagnosis requires imaging and biopsy. Prognosis is determined by tumor location, stage of the disease as well as treatments employed. Treatments include surgical removal, chemotherapy, radiation, and/or stenting. Regardless of the treatment, transitional cell carcinoma is difficult to cure and the primary goal of any of these modalities is to delay tumor progression while alleviating clinical signs.

For more information about these various treatment options for bladder tumors in dogs, please feel free to contact us. We are happy to provide initial consultation over the phone or via email at jperry@aspenmeadowvet.com.