Transitional cell carcinoma is the most common form of bladder cancer in dogs and cats. Bladder cancer can be difficult to diagnose in dogs and cats since it may mimic signs of infection, which may include straining, blood in the urine, and frequent urination. Bladder cancer has been linked with flea dips and obesity in dogs, although the cause for most tumors is unknown. Tumors usually occur at the bladder opening and can block the urethra, which is the pathway for urine to leave the body. Bladder cancer may be very advanced by the time of diagnosis, and many of the dogs with this cancer will develop new lesions in the lungs, lymph nodes, or other organ systems (metastasis). Therefore, the treatment of bladder cancer must address two issues: control the cancer within the bladder to avoid blockage, and prevent metastasis.

Surgery is a common treatment to remove many cancers. Unfortunately, the location of most tumors at the bladder opening prevents complete removal of the cancer. The ureters, delicate structures which drain urine from the kidneys into the bladder, and the urethra opening interfere with the amount of tissue that can be safely removed. Surgery is useful to collect a tissue sample for diagnosis. Surgery can also be useful to create a temporary opening through the tumor or place an artificial tube into the bladder to remove urine ("tube cystotomy").

Radiation therapy involves a series of 4-6 treatments, exposing the lower urinary tract to a high-energy radiation beam. The beam must be precisely aimed, requiring a short anesthesia for each treatment. Around 60-70% of patients urinate more easily following the treatments. The length of improvement can range from a few weeks to several months.

Chemotherapy is the use of medications to directly kill the tumor cells. The chemotherapy drugs most commonly used to treat bladder cancer in dogs are carboplatin and mitoxantrone. Either medication is given as an injection directly in the bloodstream, once every three weeks. Gemcitabine may also be effective in treating this cancer. This medication is given as a weekly injection and may be combined with carboplatin.

These medications typically do NOT cause side effects in dogs. You may be familiar with the side effects of chemotherapy in people. Fortunately, dogs tend to experience few if any of the severe side effects seen in people. For instance, dogs do not lose hair from chemotherapy, unless they are terriers, poodles, or English sheepdogs. Chemotherapy may interrupt the normal replacement of cells that line the digestive tract and the white blood cells that form in the bone marrow to help our bodies fight infection. When chemotherapy drugs damage these normal cells, symptoms can range from a mild, temporary decrease in appetite to loose stools, vomiting, and fever. Again, most dogs have no symptoms. Our philosophy is that cancer patients should feel better, not worse, from their therapy!
Immunotherapy involves the use of agents that may improve the patient’s own immune system function. With successful immune stimulation, tumor cells are recognized and eliminated from the body. Piroxicam is a human arthritis medication (also known as Feldene®) that can stimulate the immune system to fight bladder cancer more effectively. It is available as an inexpensive oral capsule, given at home daily. Because of the capsule size, medicating small and medium-sized dogs (under 60 pounds) can be tricky, but the capsules can opened and the powder contents divided over several days to obtain the proper dose. Piroxicam can cause severe stomach upset (even bleeding ulcers) if over-dosed, given on an empty stomach, or given in combination with medications such as aspirin, Rimady®, Etogetic®, Metacam® or prednisone.

The BEST treatment for bladder cancer is usually a combination of the above treatments, but may be different for each patient. Surgery and/or radiation therapy are usually necessary if a patient becomes unable to urinate because of tumor blockage. Chemotherapy and piroxicam are frequently used together to target both the tumor tissue within the bladder, as well as cancer cells that may be present in other areas. Antibiotics can be helpful in controlling secondary bacterial infections in the bladder. Ultrasound examinations and radiographs (x-rays) are helpful in measuring progress against the tumor, and are usually repeated every 6-8 weeks.