

Metropolitan Veterinary Hospital

Akron Veterinary Internal Medicine/Oncology Practice

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Transitional Cell Carcinoma

Client Handout

Transitional cell carcinoma is a cancer of the urinary system. It commonly affects the bladder and may affect the urethra as well. Transitional cell carcinoma, or TCC, is the most common bladder cancer of dogs and comprises approximately 2 percent of all cancer in dogs. Tumors typically form in the portion of the bladder known as the trigone, where urine flows out of the bladder into the urethra.

TCC is more common in female dogs than in male dogs and is more commonly seen in older dogs (average age= 10years) Risk factors include obesity, exposure to insecticides (such as flea dips), and certain breeds appear to be particularly prone (most notable in Scottish terriers).

Clinical signs of TCC typically involve frequent urinations, straining to urinate, or blood in the urine. In advanced cases, urinary obstruction may occur and owners may notice straining without urine production. These symptoms may temporarily respond to antibiotics but often quickly recur once medication is discontinued.

Initial diagnostics typically involve a urinalysis and urine culture. In as many as 30 percent of cases, tumor cells may be detected on microscopic examination of the urine. There is also a commercial test available to detect TCC in urine but this test may yeild false positives and therefore results should be confirmed with further testing.

Definitive diagnosis of TCC is determined via biopsy. Further diagnostics may involve an ultrasound or cystoscopy. An ultrasound allows visualization of the bladder and may demonstrate the presence of a tumor but does not allow for a biopsy to be taken at the same time. Cystoscopy, while being a more invasive procedure, allows an inspection of the urethra to determine if tumor is present, allows for direct visualization of the tumor, and allows for biopsy to be taken at the same time.

If possible, surgical removal of the tumor is ideal. Unfortunately, TCC tends to be invasive and may metastasize (spread to other parts of the body). As many as 50% of cases will have evidence of metastasis at time of diagnosis. The fact that this tumor tends to invade other structures (urethra, prostate, etc.) and location of the tumor generally makes surgery impossible for curative purposes.

Traditional chemotherapy drugs are considered to have a poor effect on TCC. Only about 35-50% of dogs will respond with chemotherapy and average survival has been found to range from 4 to 8 months depending on the exact protocol used.

Piroxicam, a non-steroidal anti-inflammatory drug in the same class of drugs as aspirin, has been shown to be effective for TCC. Studies have shown clinical improvement in signs in up to 75 percent and survival rates of just over 6 months on average.

Radiation treatment has also been used in treatment on TCC. Currently palliative external beam radiation therapy is being investigated to treat TCC. The studies looking at radiation therapy are being done with radiation therapy in combination with Piroxicam and chemotherapy and survival rates are approximately 8 months.