WHAT’S NEW ABOUT TRANSITIONAL CELL CARCINOMAS

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Introduction: Transitional cell carcinoma (TCC) of the urinary system is a common tumor of the urinary bladder, urethra or a prostate. Unfortunately despite the progress in the veterinary medicine its treatment is usually frustrating due to early relapse and only short duration of a response.

Aims: The following abstract present a summary of a current diagnostic, clinical signs and treatment.

Results:

Urinary bladder cancer in dogs is a challenging disease to diagnose, stage, and treat. Fortunately, urinary bladder cancer is uncommon in the dog, comprising < 2% of all reported canine malignancies. Transitional cell carcinoma (TCC) is the most common neoplasm affecting the urinary bladder of dogs.

The etiology of canine TCC is most likely multifactorial. Risk factors that have been identified include exposure to topical insecticides for flea and tick control, exposure to marshes that have been sprayed for mosquito control, obesity, possibly cyclophosphamide administration, female sex, and specific breeds (eg, Scottish Terrier). Canine TCC is typically a disease of older dogs.

Common presenting signs included hematuria, stranguria, and other forms of dysuria and, less commonly, lameness, lethargy, and weight loss. A diagnosis of TCC requires histopathologic confirmation. Although neoplastic cells may be present in the urine of 30% of dogs with TCC, neoplastic cells are often indistinguishable from reactive epithelial cells associated with inflammation. Urine antigen tests for TCC have been found to be sensitive, however a high number of false-positive results limits the value of the tests. Methods for obtaining tissue for histopathologic diagnosis include cystotomy, cystoscopy and traumatic catheterization.

There are several treatment options for transitional cell carcinoma. Surgery may be indicated to obtain tissue for a diagnosis, to attempt to remove the TCC within the bladder if lesions are away from the trigone and to maintain or restore urine flow. Complete surgical excision of TCC is not usually possible because of the typical trigonal location, urethral involvement, and metastases. In a series of 67 dogs that underwent surgery in only 2 cases tumour was excised with free margins. Several surgical approaches have been performed (cystectomy, enterocystoplasty with cystectomy and subtotal intracapular prostatectomy, ureterocolonic anastomosis, vaginourethroplasty) however all are connected with some side effects and due to demanding postoperative care have not been broadly used.
Information on the use of radiation therapy in TCC is limited. There are only several reports which showed moderate response. The recent studies using IMRT showed response rate about 60% and median event free survival 311 days and survival 654 days.

The gold standard of an approach to TCC still remains chemotherapy\(^3\),\(^4\),\(^5\),\(^6\),\(^7\) (combination of various chemotherapy medications and nonsteroidal antiphlogistics). Various medical therapy has been used for a treatment of TCC. To the most commonly used chemotherapeutics belong mitoxantrone, carboplatine and vinblastine. Usually in case of further progression alkylating agents, gemcitabine or even chlorambucil could be used. However as already mentioned the outcome is usually poor and most dogs with TCC still die of the disease. The median survival time usually does not exceed more than 1 year.

Dogs with TCC are at high risk for secondary bacterial infections, therefore repeated bacterial cultures (due to development of multiresistant bacterias) and long term antibiotic treatment belong to very important part of a treatment.

References:

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