



Piroxicam, Mitoxantrone, and Hypofractionated Radiation Therapy with Volumetric Modulated Arc Therapy for Treating Urinary Transitional Cell Carcinoma in a Dog: A Case Report

Tae-Sung Hwang¹
Soyon An¹
Moon-Young Choi²
Chan Huh²
Joong-Hyun Song³
Dong-In Jung¹
Hee Chun Lee^{1,*}

¹Institute of Animal Medicine, College of Veterinary Medicine, Gyeongsang National University, Jinju 52828, Korea

²Yangsan S Animal Cancer Center, Yangsan 50638, Korea

³College of Veterinary Medicine, Chungnam National University, Daejeon 34134, Korea

*Correspondence: lhc@gnu.ac.kr

ORCID

Tae-Sung Hwang:
<https://orcid.org/0000-0001-6730-6061>
Soyon An:
<https://orcid.org/0000-0002-9994-8760>
Moon-Young Choi:
<https://orcid.org/0000-0001-5069-0714>
Chan Huh:
<https://orcid.org/0000-0001-8127-0341>
Joong-Hyun Song:
<https://orcid.org/0000-0001-9961-6451>
Dong-In Jung:
<https://orcid.org/0000-0002-5116-6006>
Hee Chun Lee:
<https://orcid.org/0000-0001-5936-9118>

Copyright © The Korean Society of Veterinary Clinics

Abstract A 12-year-old spayed female beagle dog was presented with pollakiuria and stranguria. Abdominal ultrasonography identified irregular a marginated, hyperechoic mass in the urethra and trigon area of the bladder. Computed tomography (CT) revealed a heterogeneous mass in the trigone area leading to a urethra. There was no evidence of regional or distant metastasis. Cytologic analysis suspected transitional cell carcinoma (TCC). The patient was treated with piroxicam, mitoxantrone, and once weekly fractionated radiation therapy (RT) with volumetric modulated arc therapy (VMAT). A follow-up CT scan at 6 months after RT revealed a reduction in tumor size. At 17 months after the start of RT, the patient became severely anorectic and lethargic. Ultrasound examination revealed a hyperechoic mass in the apex area of bladder while the trigone area of the bladder and urethra appeared normal. Multiple hypoechoic nodules of various sizes were found in the liver and spleen. The patient was humanely euthanized at the request of the owner. A combination of piroxicam, mitoxantrone, and hypofractionated RT with VMAT protocol was well tolerated. This case described tumor response and survival time of a canine TCC treated with piroxicam, mitoxantrone, and once weekly palliative RT using computer-assisted planning and VMAT.

Key words canine, palliative, radiotherapy, transitional cell carcinoma, VMAT.

Received October 19, 2021 / Revised January 27, 2022 / Accepted January 28, 2022



This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.