

Canine Lymphoma with Multiple Osteolysis and Hypercalcemia

Jinsoo Lee¹, Hyunwook Kim¹, Jihye Choi¹, and Ulsoo Choi^{2*}

¹*Haemaru Referral Animal Hospital, Seongnam, Gyeonggi do;* ²*Department of Veterinary Clinical Pathology, Chonbuk University, Jeonju, Korea*

Signalment: An 18-month-old, neutered male, golden retriever was presented with progressive tetraplegia, osteolytic lesions at right femur and hypercalcemia (15mg/dL; reference range, 7.8-12.6mg/dL) from the local veterinary clinic.

Results: Based on radiograph findings, multiple bone involvement including femur, ilium and spinous processes along with lumbar vertebra was confirmed. Cytologic and histopathologic findings of the bony lesions revealed round cells with lymphoglandular bodies, which impression of lymphoma was given. On immunohistochemical staining, CD3 (T cell) and CD79a (B cell) antigen were not expressed. With additional staining for CD20 (B cell lineage) and CD45a (leukocytic marker with predilection from lymphoid cells) as well as IgG and lambda immunoglobulin light chains for evidence of plasma cell differentiation, neoplastic cells are immunoreactive for cytoplasmic IgG, but they stained negative for CD20, CD45a, and lambda light chains. These results reflected the possibilities of atypical multiple myeloma or B-cell lineage lymphoma. Without hyperglobulinemia and monoclonal gammopathy, however, atypical B-cell lymphoma was more appropriate differential, especially considering cytologic findings. This case was treated by multidrug chemotherapy, including vincristine, doxorubicin, cyclophosphamide, and prednisolone, through which clinically good response was seen. But the patient eventually died after 4th cycle following severe thrombocytopenia and lymphedema at hind limbs.

Clinical relevance: Recent studies demonstrated more detail mechanisms about interaction of stromal cells, osteoclasts, and tumor cells, mediated by OAFs such as receptor activator of NF-kappaB (RANK) ligand (RANKL), macrophage inflammatory protein-1 alpha (MIP-1 α) and MIP-1 β . The expression of these OAFs by reverse transcriptase-polymerase chain reaction (RT-PCR) should have been evaluated to elucidate the cause of hypercalcemia.

Key words: lymphoma, multiple osteolysis, hypercalcemia, IgG, RANKL