Concurrent Lymphoblastic Lymphoma, Canine Leishmaniosis and Dirofilariosis in a Doberman Dog: A Rare Triple Co-Infection Case

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Canine leishmaniosis (CanL), dirofilariosis and lymphoma are important diseases in dogs. This case presents a rare condition where three different pathologies are observed simultaneously in a single patient. An 4-year-old, female, unspayed Doberman dog was presented to our clinic with weight loss, chronic dermatitis and anorexia complaints. Physical examination revealed cachexia, periocular pustular lesions and generalized lymphadenopathy. Interestingly, while hemogram parameters were within normal limits, serum total protein level was found to be elevated at 11.4 g/dL. These findings led to a preliminary diagnosis of CanL. Fine needle aspiration cytology from popliteal lymph nodes revealed a diagnosis of lymphoblastic lymphoma. Additionally, Dirofilaria immitis microfilaremia was detected in the modified Knott test. CanL rapid antibody test was positive and Leishmania amastigotes were observed in lymph node aspirate, confirming the diagnosis. Echocardiographic evaluation revealed stage 3 dilated cardiomyopathy in the patient. Cardiac biomarkers were measured as follows: canine-specific cTnI: 1.26 ng/mL, D-Dimer: >10 µg/mL, cCRP: 13.74 mg/L, cNT-proBNP: 575.38 pmol/L. These values were consistent with dirofilariosis and cardiomyopathy. This case is significant in three aspects. First, Dobermans are known predisposed breeds for lymphoma. Second, although leishmaniosis and dirofilariosis co-infection is commonly seen in Turkey, its association with lymphoma is a quite rare condition. Third, leishmaniosis can predispose to malignancies by creating immunosuppression. The patient's elevated serum protein can be explained by hypergammaglobulinemia associated with leishmaniosis. Atypical lesions can create diagnostic challenges in leishmaniosis. In this case, pustular dermatitis can be considered as an atypical presentation. It is emphasized that co-infections require systematic evaluation in diagnostic approach, and investigation for multiple pathogens should be

conducted especially in endemic regions. This case demonstrates that complex disease presentations in veterinary practice require systematic approach, and particularly that immunosuppressive conditions increase the risk of co-infection and malignancy. Multiple pathology investigation is recommended in patients showing similar symptoms in regions endemic for CanL.

Keywords: Canine leishmaniosis, dirofilariosis, lymphoblastic lymphoma, co-infection