



O-10. EVALUATION OF THORACIC COMPUTED TOMOGRAPHY FINDINGS IN DOGS NATURALLY INFECTED BY *DIROFILARIA IMMITIS*

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The development of thoracic lesions such as pulmonary thromboembolism, eosinophilic pneumonia, lymphadenomegaly, pulmonary hypertension (PH), and bronchiectasis are common disorders in canine heartworm. However, there have been few reports of computed tomography (CT) imaging findings in heartworm disease. The objective of this study was to show the main thoracic CT findings in a group of dogs parasitized by *D. immitis*.

In this study were evaluated 36 naturally-infected dogs and 30 healthy dogs on the island of Gran Canaria, between September 2019 and July 2022. The presence of PH was determined echocardiographically through the estimation of the right pulmonary artery distensibility index (RPADi<29.5%). Secondly, thoracic CT images with contrast were acquired with a helical CT scanner. Lung and soft tissue reconstructions and adjustments to the width and level of the imaging window were reviewed. Analysis of DICOM CT images was performed on a dedicated image viewing station using commercially available viewing and analysis software.

The measures evaluated by CT were the ratio between the pulmonary trunk and the ascending (PT:AAo) and descending (PT:DAo) Aorta, the ratio between the pulmonary vein and the pulmonary artery (PV:PA), the ratio between the right and left ventricles (RV:RL) and the bronchoarterial ratio (BA), following previously published protocols. In addition, normalized measurements of the diameter of the pulmonary trunk (PTn), right ventricle (RVn), and lobar pulmonary arteries (PAN) were displayed. Finally, the presence of pulmonary alterations such as bronchointerstitial lung pattern, nodules/thickening, alveolar infiltration, bronchiectasis, consolidation, pleural effusion, pneumothorax, peribronchial cuffing, atelectasis and lymphadenopathy was recorded if present.

The RPDi determined the presence of PH in 63,9% of the parasitized animals. The presence of heartworm and PH showed significant results (increased values in PT:AAO, PTDAO, RV:RL, PTn, PAN and RVn, and lower values in PV:PA and BA) compared to healthy animals or infected dogs without PH. 59,1% of the infected animals presented pulmonary lesions, with peribronchial cuffing (66,7%) and bronchointerstitial lung pattern (61,1%) being the most notable findings. Significant results were reported between the presence of PH and other thoracic injuries ($P<0,1$).

In general, the results showed a high presence of cardiorespiratory lesions in dogs with heartworm disease. Chronic and reinfection processes generate PH and multiple thoracic lesions in most of the animals studied. CT can be a useful tool to assess thoracic alterations in patients with heartworm disease. New studies are indicated with a larger sample size, being able to standardize protocols and obtain reliable reference values.

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