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Topic: AS09 Diagnostic imaging

EVALUATION OF PULMONARY HYPERTENSION IN DOGS WITH HEARTWORM DISEASE USING THE PULMONARY TRUNK TO DESCENDING AORTA DIAMETER RATIO

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Introduction:

Dirofilaria immitis (heartworm) produces pulmonary endarteritis, which chronically leads to pulmonary hypertension (PH) and right-sided cardiac failure. The use of angiography through Computed Tomography (CT) and the measure of the pulmonary trunk to descending aorta diameter ratio (PT:Ao ratio), constitutes a quantitative measure that has already demonstrated an objective diagnosis of PH in dogs, and has improved the diagnostic performance in comparison with echocardiography in human medicine.

Objectives:

The objective was to determine the utility of PT:Ao ratio obtained by CT to stage the severity of PH in heartworm disease.

Methods:

24 heartworm-infected dogs were evaluated. Computed Tomography with intravenous contrast allowed measurement of the PT:Ao ratio according to previous authors. The correlation between the PT:Ao ratio and 4 echocardiographic parameters (tricuspid regurgitation pressure gradient, the ratio of main pulmonary artery diameter to aortic root diameter, right pulmonary artery distensibility index, and the parasite load) were evaluated to determine the presence/absence of PH using the Pearson's correlation coefficient.

Results:

A statistically significant relationship ($p < 0.01$) was observed between the presence or absence of PH > 55 mmhg ($n=11$ and $n=13$, respectively) and the PT:Ao ratio (1.88 ± 0.39 vs 1.08 ± 0.33).

Conclusions:

The results suggest the possibility of using the PT:Ao ratio as a tool to help determine the presence and severity of PH in dogs infected by *Dirofilaria immitis*. This ratio might be useful for the diagnosis, monitoring and prognosis of parasitized animals. Further studies with larger numbers of animals should be carried out.