Cardiopulmonary evaluations in *Dirofilaria immitis* naturally infected cats

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INTRODUCTION

Cats are less susceptible to *Dirofilaria immitis* infections than dogs and mostly infected cats are asymptomatic or present non-specific signs (Litster and Atwel, 2008 J Feline Med Surg). The aim of this work was to describe thoracic radiographs, ecodopplercardiogram (ECO) and the proBNP level of *D. immitis* antigen seropositive cats.

MATERIALS AND METHODS

Seven *D. immitis* antigen positive cats (Feline Triple®, IDEXX Laboratories Brazil) presenting no clinical signs of infection were submitted to thoracic radiographs, ECO and proBNP testing (SNAP Feline proBNP®, IDEXX Laboratories Brazil) in blood samples.

RESULTS

The included cats age ranged from 2-12 years old ($\bar{x}$ =5), including three males and four females. X-rays showed that all cats presented at least one of the radiographic findings. Frequency of radiographic findings are presented at figure 1.

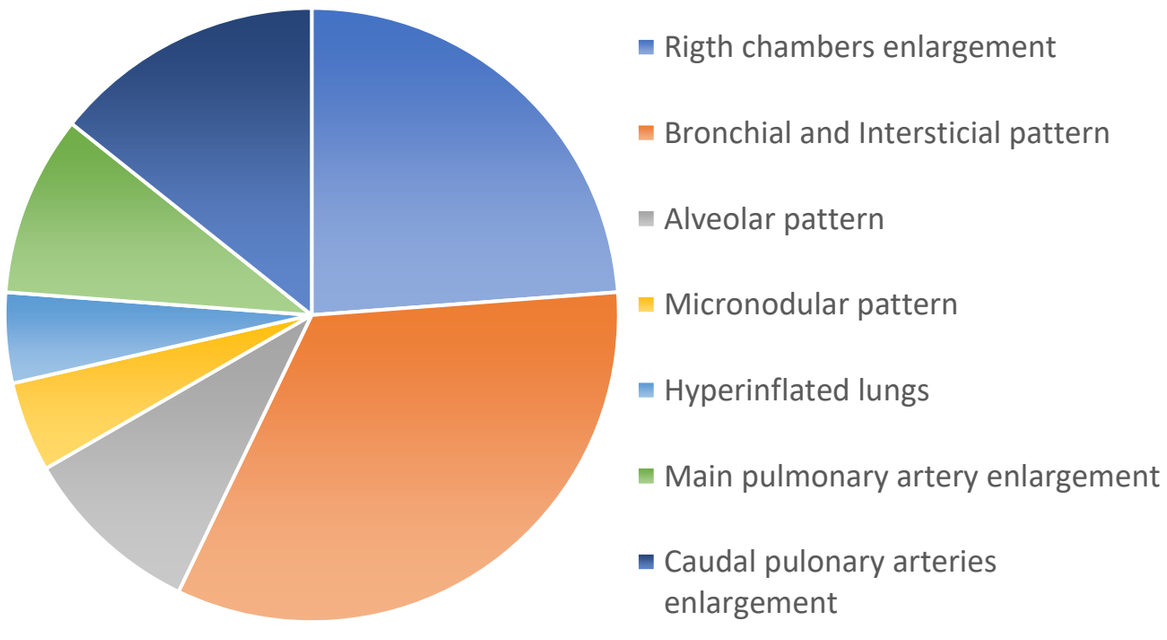

Figure 1. Frequency of radiographic findings in heartworm infected cats

Only five cats were examined with ECO. None of them presented signs of cardiomyopathy. Worms could be visualized in one cat only (Figure 2A), which was also the only one presenting pulmonary and tricuspid insufficiency (Figure 2B). All cats presented asymmetric pulmonic flow. The mean results of other right ventricle parameter analyzed are presented as following: right pulmonary artery distensibility index: $\bar{x}$ =37,2%±4,7; pulmonary artery and aorta ratio: $\bar{x}$ = 0.69±0.38; and tricuspid annular plane systolic excursion (TAPSE) $\bar{x}$= 7,4 ±1.8.

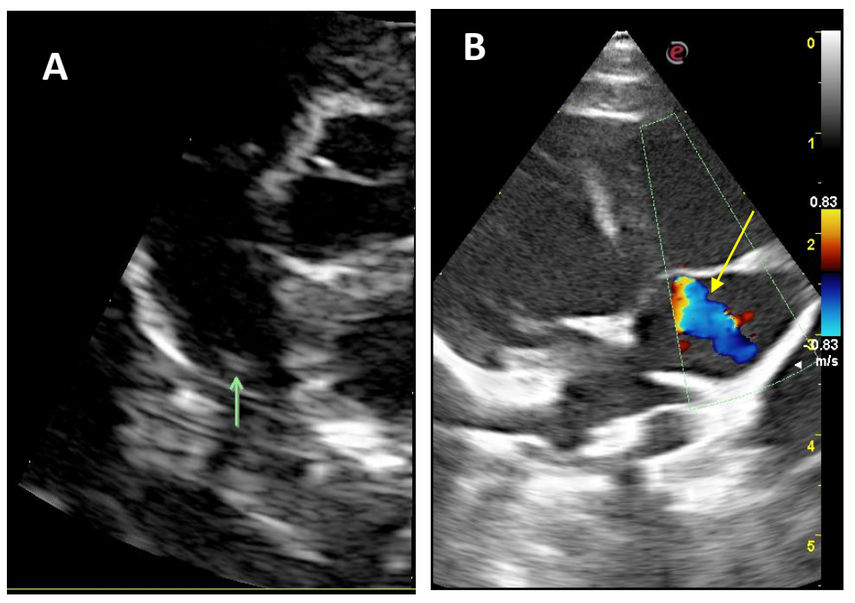

Figure 2.A. Presence of hyperecoic paralel lines (green arrow) inside of main pulmonar artery (*D. immitis*); B. Tricuspid regurgitation (yellow arrow).

TAPSE results are similar to those of subclinical CM cats reported before (Spalla et al, 2018 J Vet Cardiol, 20(3):154-164) suggesting that these cats could present reduced TAPSE due to HTW disease. Levels of proBNP were within the normal range for six cats and elevated in one (figure 3), suggesting that although lung disease was evident, heart lesions were incipient. The results suggest that feline *D. immitis* infection can cause lesions that are only detected by specific exams and that ECO of heartworm infected cats needs to be further studied.

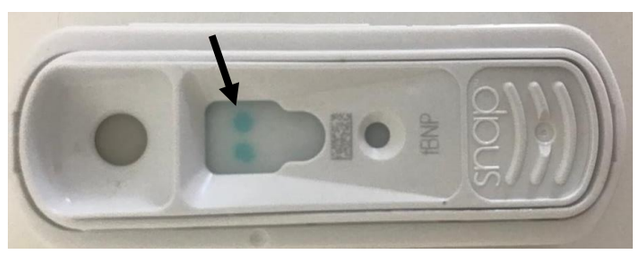

Figure 3. Incresead proBNP test (arrow) (Snap Feline proBNP® IDEXX Laboratories Brazil)

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