Oral presentations

Can we screen UK Dobermanns for Dilated Cardiomyopathy (DCM) with cardiac biomarker blood tests?

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OBJECTIVES

Dobermanns have high prevalence of DCM. Gold-standard screening is annual echocardiographic (E) and Holter monitoring (H). Cardiac Troponin I (cTnI) and N-terminal pro-BNP (NTproBNP), have been reported individually to identify affected Dobermanns. The objectives were (i) to investigate whether both cTnI & NTproBNP were superior to either alone (ii) to report sensitivity (Se) and specificity (Sp) of each biomarker in identifying DCM.

METHODS

Prospective study. High sensitivity cTnI and 2nd generation NTproBNP were assayed (IDEXX). Dogs were selected for gold-standard screening by participating cardiologists. ROC curve analysis to give area under the curve (AUC) for each biomarker. Cut-offs to optimise both sensitivity (Se) and specificity (Sp) were determined. A combined analysis included a combined score of biomarker abnormalities.

RESULTS

118 Dobermanns were included (55 male, 63 female), aged 2.13–12.23 years old. 59 were normal, 52 had DCM. 7 equivocal (excluded).

ROC analysis: cTnI AUC = 0.87, NTproBNP AUC = 0.81. Se & Sp for the current laboratory reference ranges for cTnI was 0.77 and 0.86, and for NTproBNP was 0.69 and 0.81. To optimise both Se & Sp, cut-offs of 0.06 ng/mL for cTnI (Se/Sp 0.838) and 626 pmol/L for NTproBNP (Se/Sp 0.787) are proposed to identify both forms of DCM in Dobermanns. Using the combined score and the new cut-offs, the AUC increased to 0.876.

STATEMENT (CONCLUSIONS)

Cardiac biomarker screening using both cTnI and NTproBNP may identify Dobermanns with DCM, and both biomarkers may be superior to either alone. Further evaluation is indicated in dogs with abnormal cardiac biomarker results.

Pulmonary Hypertension in cats: Causes and Echocardiographic Assessment

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OBJECTIVES

To document the underlying causes of pulmonary hypertension (PH) in cats and to evaluate the accuracy of the most common echocardiographic variables used in dogs to predict PH. A secondary objective was to assess progression after treatment of the primary cause.

METHODS

A retrospective review of cats with PH presented to one referral centre. Cats were enrolled if they had PH, diagnosed by tricuspid regurgitation (TR) >2.8 m/s or pulmonary regurgitation > 2.2m/s. Cats without PH (TR < 2.5m/s or without measurable TR) were selected as a control group. Ten quantitative echocardiographic variables were assessed in all groups, including: main pulmonary artery/aorta ratio (MPA/AO); Pulmonary acceleration time; Pulmonary acceleration time/ ejection time ratio; tricuspid annular plane systolic excursion (TAPSE), Tei Index, and four right ventricular TDI variables. Receiver operating characteristic (ROC) curves were performed for each variable.

RESULTS

PH was diagnosed in 29 cats. Left-sided heart disease was the most common cause (14/29), with restrictive cardiomyopathy and hypertrophic cardiomyopathy being the most represented diseases, with 6 cases each. Congenital and respiratory diseases were diagnosed in 7 cases each. MPA/AO was the best parameter tested

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with an area under the curve of 0.81 followed by TEI index and TAPSE ($p < 0.05$). Three cats from the left-sided heart disease group and 1 from the pulmonary group showed less TR velocity after treatment

STATEMENT (CONCLUSIONS)

Left-sided heart disease was the most common cause of PH in cats in this study. MPA/AO showed the best agreement with TR velocity. PH was reversible in 3 cats.

Development of atrial fibrillation and ventricular tachycardia in an adult cat with cor triatriatum sinister

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OBJECTIVES

To report the first documented case of development of atrial fibrillation and ventricular tachycardia, with R on T phenomenon in an adult cat with cor triatriatum sinister.

METHODS

An eleven-year-old, 5.3kg castrated male domestic short hair cat had an acute history of syncope and recently developed lethargy and inappetence. On initial presentation, the cat was bright, alert and responsive with severe generalized paresis. Auscultation revealed a tachycardic rhythm and weak femoral pulses were palpated. An initial

ECG showed runs of ventricular tachycardia with R on T phenomenon. Following stabilization, a 6-lead ECG showed atrial fibrillation (heart rate — 182beats/min). Cor triatriatum sinister (CTS) was diagnosed by 2D echocardiography, colour flow and continuous wave Doppler modes. Marked stenotic blood flow was noted through the perforation of the fibrous membrane, dividing the two atria, resulting in severe proximal atrial chamber dilation.

RESULTS

The cat was treated initially with esmolol (0.25mg/kg) intravenously once, followed by atenolol (6.25mg) orally. Following resolution of ventricular tachycardia, further diagnostics determined atrial fibrillation was the consistent rhythm, with intermittent, rare ventricular premature complex beats. Treatment and prognosis for CTS was discussed with the owners. However, in this case, humane euthanasia was elected.

STATEMENT (CONCLUSIONS)

This is the first case report to describe consequent sequelae of CTS in an adult cat. Previous case reports have only described this congenital abnormality in cats under the age of one year. Despite the outcome of this case, this case report describes both medical management and niche surgical options for the management of CTS in a cat.

Association between neutering status and cardiac changes secondary to myxomatous mitral valve disease

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OBJECTIVES

To determine if neutering status affects cardiac remodeling in male and female dogs with myxomatous mitral valve disease (MMVD).

METHODS

A retrospective study was conducted including 582 dogs who were diagnosed with MMVD between January 2008 and December 2016. Dogs were categorized into four groups: female entire, female neutered, male entire and male neutered. Transthoracic two-dimensional echocardiographic studies were performed by board-certified (ECVIM or ACVIM) cardiologists or cardiology residents under their supervision. For each dog four echocardiographic measurements were retrieved: left atrial dimension to aortic root diameter in diastole (LA:Ao), left atrium maximal dimension to the aortic root

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