IMAGING PERFORMED BY

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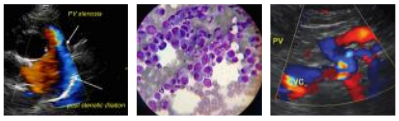

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PATIENT
Emrys Wehner

SPECIES
Canine

BREED
Doberman

SEX
Male Intact

AGE
5.1.16

WEIGHT
100lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME
Homeward Bound

REFERRING VET
Dr. Sorum

INVOICE
25492

DATE
7.22.22

PRESENTING CLINICAL SIGNS

History: Intermittent cough for past month. Not worse with exercise.
-Current medications: None.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results: No previous.
-STAT: STAT and ECG declined at this time.
-Imaging performed by: Stephanie Pearce RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Moderate left ventricular dilation with moderate to severely depressed myocardial function. Mild to moderate left atrial enlargement. The mitral valve appears mildly thickened, with no obvious prolapse into the left atrial lumen. Mild to moderate eccentric mitral regurgitation. Normal velocity. The tricuspid valve appears normal in form and function. No right atrial or ventricular dilation. No tricuspid regurgitation. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; normal LVOT velocity. No aortic insufficiency. Normal pulmonic valve with no pulmonic insufficiency seen. No pericardial or pleural effusion noted. No obvious cardiac tumors.

CARDIAC CHART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.5	NA	NM	1.4	14	29	NM
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	140	1.5	0.94	45.4	3.9	6.5	5.5
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has changes consistent with familial Dilated Cardiomyopathy (DCM). There is a decline in systolic function, with mild to moderate LA/LV dilation indicating current risk is relatively low. In the future the risk will likely increase for development of congestive heart failure, malignant arrhythmias (AF, VT), collapse and/or sudden death. Mild to moderate MR is identified, which is of little hemodynamic significance at this time. Based upon the Protect study, Pimobendan and close monitoring will help give the best prognosis possible. A baseline ECG and/or Holter monitor may also be helpful to screen for early occult ventricular arrhythmias particularly given the familial history of sudden death. Prognosis is guarded long term, with risk for progression to CHF, malignant arrhythmias and/or sudden death in the future.

Systolic failure can be primary in nature (DCM) or secondary to taurine deficiency, myocarditis, hypothyroidism, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. While primary disease is suspected in this breed, consider testing for primary causes that may be treatable such as a thorough diet history given the recent correlation with grain free/boutique brand/exotic ingredient diets, thyroid panel, etc.

Given these findings, the cough is unlikely to be cardiac in origin and primary respiratory causes should be considered. Consider further respiratory work up/treatment (hydrocodone, taper course of steroids, Enrofloxacin, TTW/BAL, etc.).

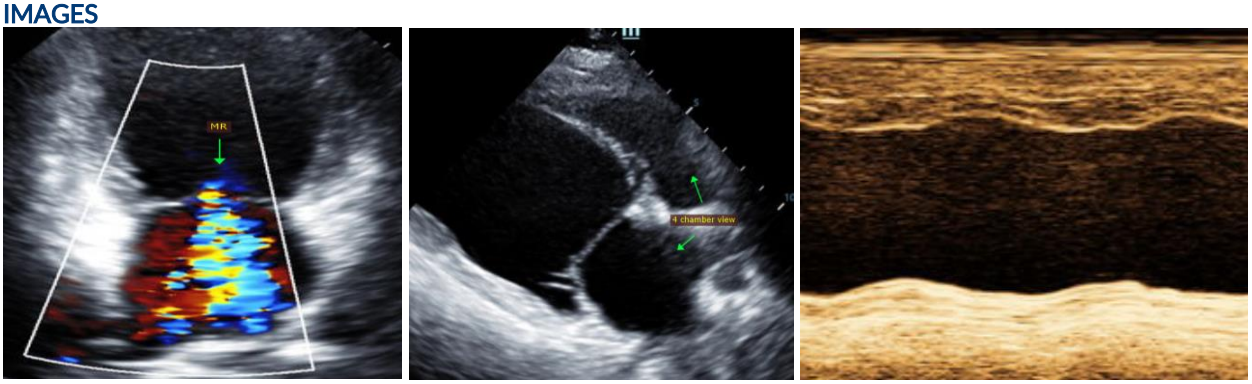
Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to screen for progression in the future. Mild activity restriction is advised. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

PLAN

Institute Pimobendan 0.3mg/kg PO q12h. Baseline CXR, BP and ECG are strongly recommended.

A recheck echocardiogram is recommended in 6 months to assess for progression, sooner if clinical signs arise.

IMAGES



The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

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