



PATIENT

Bridger Lyon

PRESENTING CLINICAL SIGNS

History: Recent GI issues 5/8, On a grain free diet. No heart murmur auscultated; however, cardiomegaly suspected on CXR.

SPECIES

Canine

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 100bpm (range 78-125bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The R wave is borderline increased. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.

BREED

Labrador Retriever

ECG diagnosis: Normal sinus rhythm. Borderline tall R waves.

SEX

Male Neutered

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve appears mildly thickened with no obvious prolapse into the left atrial lumen. Mild MR. Normal velocity. Mild to moderate left atrial dilation. Minimal LV dilation in diastole (LVIDdN: 1.75) with mild dilation in systole (LVIDsN: 1.32). Moderate decline in myocardial function. FS 17-20%. Normal LV wall thickness. The tricuspid valve appears normal in form and function. Mild right atrial and ventricular dilation. Mild TR. Velocity consistent with mild pulmonary hypertension. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; normal LVOT velocity with laminar flow. No aortic insufficiency. Normal pulmonic valve with no pulmonic insufficiency seen. No pericardial or pleural effusion noted. No obvious cardiac tumors.

AGE

5 years

WEIGHT

94lbs

CARDIAC CHART

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

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	3.1	1.5	1.5	19	36	0.93
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	NM	1.6	1.5	42.6	4.0	5.3	4.3
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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

IMAGING PERFORMED BY

Amanda Lacey-Crook, SDEP

HOSPITAL NAME

Rivers Edge Pet Medical Center

REFERRING VET

Dr. Gray

INVOICE

24377

DATE

5/24/22



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The primary abnormality identified is mild four chamber enlargement with a decline in systolic function. The LA is mild to moderately enlarged, indicating concern for progression in the future. Mild MR and TR are of little hemodynamic significance; however, early pulmonary hypertension is noted. No additional issues are identified in this study. The ECG is unremarkable with a normal sinus rhythm.

LV dysfunction can be primary in nature (early primary DCM) or develop secondary to taurine deficiency, myocarditis, tachycardia-induced cardiomyopathy, hypothyroidism, diet, or infiltrative disease such as lymphoma. Given the breed, age and diet history, there is great concern for correlation with a grain free diet being fed in light of recent reports. A diet change is certainly recommended as was done (see WSAVA guidelines), as this is potentially the only treatable cause of these findings. Additionally, a taurine supplementation is recommended as below. Finally, Pimobendan is warranted given LA dilation and significance of dysfunction.

Prognosis is guarded at this stage, as rate of progression will dictate true clinical implication of today's findings long term. There may be risk for development of congestive heart failure, malignant arrhythmias (AF, VT), collapse and/or sudden death in the future.

Monitor for development of a murmur, cough, labored breathing, exercise intolerance or collapse episodes.

Once on Pimobendan for 3-5 days, anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

PLAN

Baseline BP. Recommend Pimobendan (0.25-0.3mg/kg PO q12h). Supplement taurine, 1000mg PO q12h. Diet change/thyroid level as discussed.

A recheck echocardiogram is recommended in 6 months, sooner if a murmur develops or any signs of cardiac disease are noted.

IMAGES





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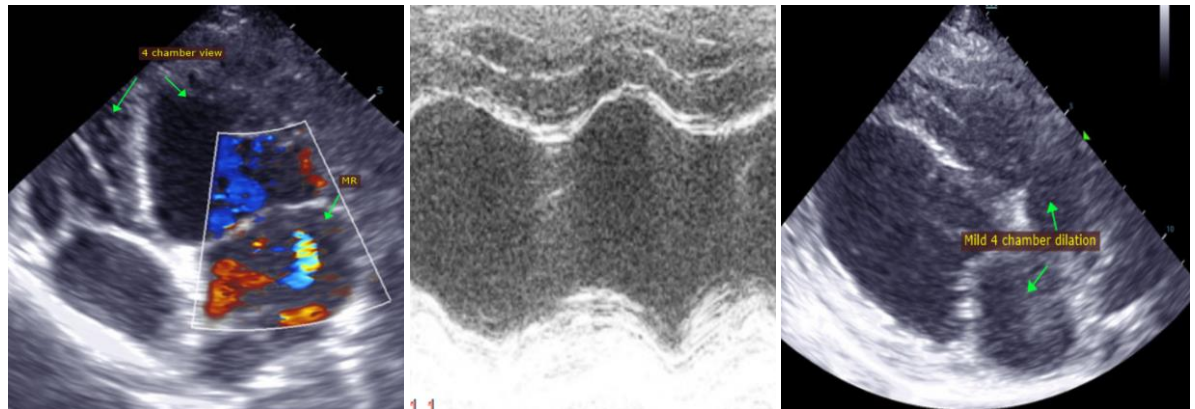
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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