



Portable Animal Western Sonography, Inc.

IMAGING PERFORMED BY

pawsonography@gmail.com 530-786-8340

**PATIENT**

Marley Gibson

**SPECIES**

Canine

**BREED**

Pomeranian Mix

**SEX**

Male Neutered

**AGE**

5.8 years

**WEIGHT**

16lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Loetitia St-Jacques,  
LVT/RVT

**HOSPITAL NAME**

MountainView  
Animal Hospital

**REFERRING VET**

Dr. Kalivoda

**INVOICE**

23045

**DATE**

3/10/22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Presented to urgent care for increasing cough. Grade 4/6 heart murmur. Recommend Doxycycline and Hydrocodone.

-Current medications: Doxycycline 0.5ml PO BID 10 days (5mg/kg), Hydrocodone 2.5mg PO TID-QID, Vetmedin 2.5mg BID.

-Pertinent previous echo findings (7/2021 MML): Moderate MR, moderate LAE, mild TR, mild to moderate PAH: 3.4m/s. LA: 2.3, LV: 3.3.

**RADIOGRAPHIC FINDINGS** \*NOTE: Images submitted for supplemental cardiac information only. Mild cardiomegaly. No obvious evidence of CHF.

**ELECTROCARDIOGRAPHIC FINDINGS**

A six lead ECG is available at 50mm/s; 10mm/mV. The average heart rate is 150bpm (range 130-166bpm). 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 QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm with respiratory variation.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>>posterior) with minimal prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Borderline LV with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with mild pulmonary hypertension. Mild right atrial and ventricular prominence. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic outflow velocities. Normal aortic outflow velocities. No pulmonic or aortic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

**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	6.3	3.2	NM	1.8	42	75	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	170	1.6	0.9	7.3	2.5	3.1	1.8
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				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)

Adapted from June Boon, Veterinary Echocardiography, 1998



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Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435	30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease persists with evidence stability. Moderate mitral and mild tricuspid regurgitation are unchanged. Moderate left atrial enlargement is similar to the prior study with no obvious progression. Finally, pulmonary pressures are similar to previous with mild right heart enlargement. No additional issues are identified. The ECG is unremarkable with a normal sinus rhythm.

Given these findings, reasonable to continue Pimobendan lifelong. The cough remains unlikely to be cardiac in origin. The chest radiographs do not show evidence of congestive heart failure and continued respiratory therapy is recommended. Continue to monitor for signs of progressive PAH including exertional syncope or dyspnea.

Anesthetic risk remains mildly elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol induction, etc.) are recommended. Pre-oxygenate for 5 minutes prior to induction and recover in O2 if possible. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

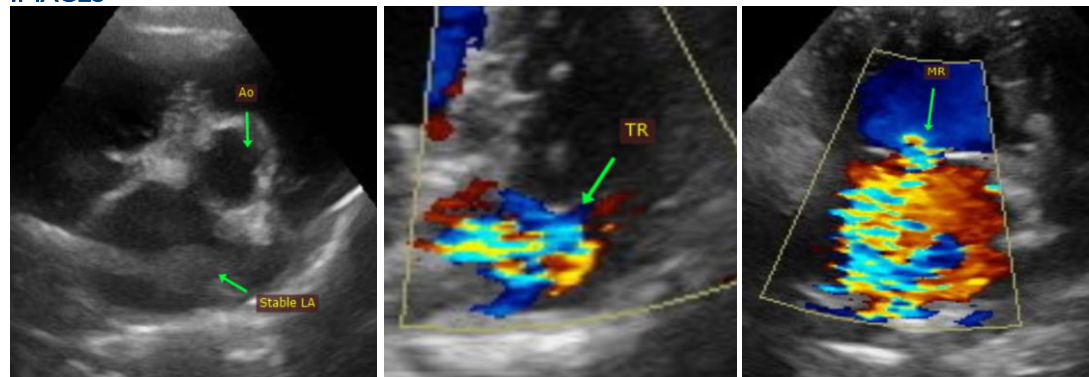
Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

**PLAN**

Continue Pimobendan, 0.3mg/kg PO BID. Continue respiratory therapy as prescribed and assess response. If minimal increase Hydrocodone and change to a Fluoroquinolone.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

**IMAGES**





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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.

Maggie Machen Lamy, DVM  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

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