



**PATIENT**

Lucy Ulrich

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Female Spayed

**AGE**

3.12.10

**WEIGHT**

7.2lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**HOSPITAL NAME**

Pet Wellness Center

**REFERRING VET**

Dr. Twardus

**INVOICE**

29543

**DATE**

3.10.23

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Increased cough. Grade 5/6 heart murmur.

-Current medications: Vetmedin 1.25mg 1 AM, ½ PM.

-Sedation used: Not required to complete full diagnostic ultrasound.

-Pertinent previous ultrasound results (3/2022 MML): Moderate to severe MR, moderate LAE, mild LVE, mild TR, mod PAH: 3.8m/s, mild RAH. LA: 1.9, LV: 2.9.

-STAT: Not requested

-Imaging performed by: Andi Parkinson, BS, RDMS.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse nodular thickening of mitral valve leaflets (anterior>>posterior) with significance prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. No LV dilation with hyperdynamic myocardial function. The tricuspid valve appears thickened with septal prolapse mild prolapse and trace tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension. Mild right atrial enlargement Mild right ventricular/MPA 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	6.5	3.8	NM	1.9	60	92	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	150	1.2	1.0	3.3	2.1	2.5	1.0
*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

Compared to the prior study, findings appear similar. Moderate MR is unchanged with stable left heart dimensions. The right heart and pulmonary pressures appear stable as well without obvious progression. No additional issues are identified.

Given these findings, it is reasonable to continue Pimobendan going forward. No indication for Sildenafil without exertional syncope or collapse. Prognosis remains guarded at this stage (B2).

The cough remains multi-factorial in origin. Repeat CXR are recommended. Consider ancillary therapy, such as Baytril, Hydrocodone, etc.

Anesthetic risk is considered moderately elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction) are recommended. 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. Pre-oxygenate for 5-10 min prior to intubation and recover in O<sub>2</sub> if possible.

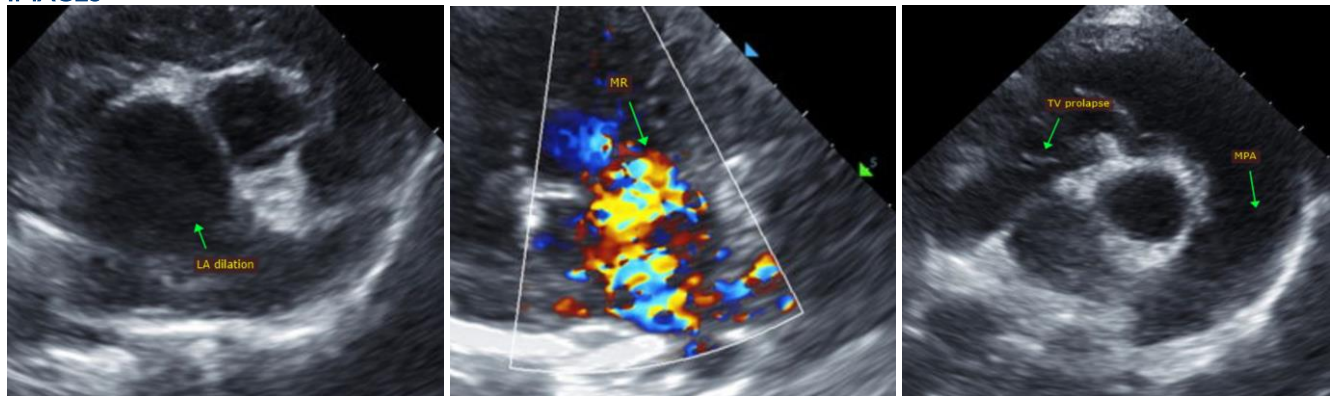
Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

## PLAN

Screening chest radiographs and BP recommended. Continue Pimobendan as previously recommended. Consider cough suppression, course of Baytril, etc. depending on CXR review. If exertional dyspnea/collapse develop, institute Sildenafil 1-2mg/kg PO q8h.

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

## 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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