**PATIENT**

Maddie Maling

**SPECIES**

Canine

**BREED**

Whippet

**SEX**

Female Spayed

**AGE**

6.13.15

**WEIGHT**

36.5lbs

**INTERPRETED BY**Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)**HOSPITAL NAME**Swan Creek Veterinary  
Clinic**REFERRING VET**

Dr. Boccanfuso

**INVOICE**

31650

**DATE**

6.30.23

**PRESENTING CLINICAL SIGNS**

History: Presented for annual exam 4/13/23 and noted a quiet grade 2/6 systolic murmur around pulmonic V. First time a murmur was noted in patient. Clinically she was doing fine rest of physical was unremarkable. Came back 6/8 for follow up and murmur is now grade 3/6 systolic can hear on both left and right side, still not clinical, rest of physical was wnl. pet was on grain free diet for a while O switched her off about 6-8 months ago.

-Current medications: None.

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

-Pertinent previous ultrasound results: No previous.

-STAT: Requested/Approved.

-Imaging performed by: Stephanie Warga RDCS, RVT.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild left ventricular dilation in both systole and diastole with moderately decreased systolic 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. Trace TR. Velocity consistent with early pulmonary hypertension. Mild right atrial or ventricular dilation. 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	6.0	3.2	NM	1.7	20	36	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	180	1.3	1.8	16.5	2.8	5.5	4.4
*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)
				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

The academic diagnosis of chronic degenerative valve disease with systolic dysfunction versus true primary cardiomyopathy could be argued in this case. The former is suspected, given the degree of regurgitation matches the degree of dysfunction. Regardless, treatment and prognosis are similar. Mild to moderate LA dilation indicates the current risk for complication is relatively low. That being said, the patient will always be at risk for progression to clinical signs. Early pulmonary hypertension is noted, which should be monitored going forward. No additional issues are identified.

Given what is seen here, Pimobendan is recommended as below. Additionally, an ACE-I would be reasonable pending BP assessment. The patient is noted to be tachycardic in hospital and an ECG and baseline CXR are recommended. Prognosis is guarded long term, with risk for progression to CHF, malignant arrhythmias and/or sudden death in the future. Consider screening for causes of LV dysfunction, including hypothyroid disease. A grain-free diet that was discontinued over 6 months ago is unlikely to be related; however, a Taurine supplement can be considered.

Monitor for development of a 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.

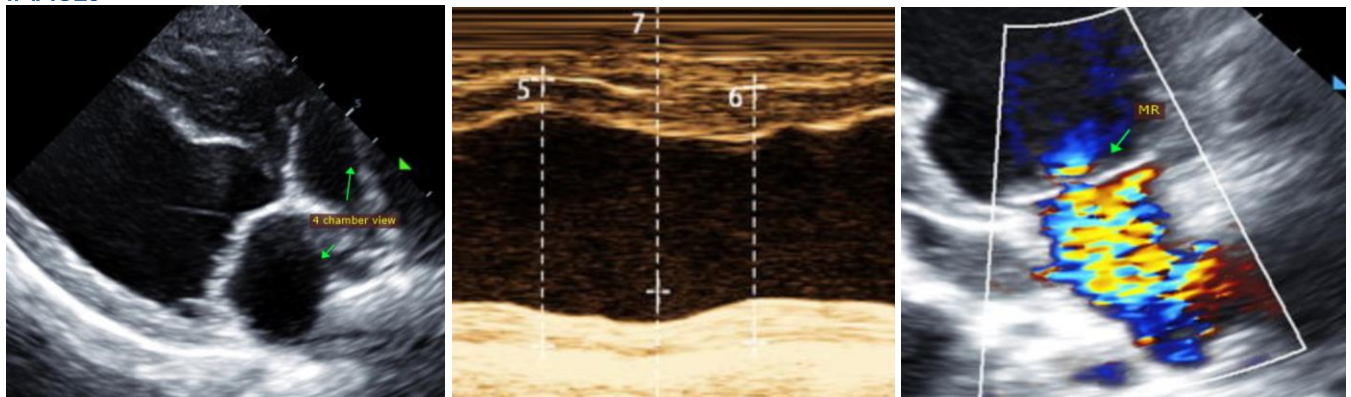
Once on the medication for 3-5 days, anesthetic risk is considered moderate if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, 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:

Institute Pimobendan 0.3mg/kg PO q12h. Screening BP is recommended, if >150mmHg, institute ACE-I 0.5mg/kg PO q12h. Consider a Taurine supplement 1000mg PO q12h. Baseline ECG and CXR are 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.

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