



**PATIENT**

Kiwi Snyder

**SPECIES**

Canine

**BREED**

Miniature Schnauzer

**SEX**

Female Spayed

**AGE**

4.5.10

**WEIGHT**

27lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**HOSPITAL NAME**

Banfield Timonium

**REFERRING VET**

Dr. Kameka

**INVOICE**

24667

**DATE**

6.8.22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Grade 4/6 murmur.

-Current medications: Enalapril 2.5mg 1.5 BID, Pimobendan 2.5mg 1 AM, 1.5 PM.

-Blood pressure: 160/99, 161/97 and 163/96mmHg.

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

-Pertinent previous ultrasound results (7/2021MML): Moderate to severe MR, moderate LAE, borderline LV, trace TR. LA: 2.7, LV: 4.3.

-STAT: Declined.

-Imaging performed by: Stephanie Pearce RDCS, RVT.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with no prolapse into the left atrial lumen. Moderate to severe eccentric mitral regurgitation with moderate to severe left atrial dilation. Normal MR velocity. Mild LV dilation with adequate myocardial function. The tricuspid valve appears subjectively normal, with trace tricuspid regurgitation. Normal velocity. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. Trace aortic and no pulmonic 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	6.2	2.7	NM	1.9	46	78	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	176	1.4	0.8	12.2	3.0	4.5	2.4
*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

Chronic degenerative valve disease persists with moderate to severe mitral and trace tricuspid regurgitation. Compared to the prior study, there is evidence of slight progression in both left heart dimensions. The remainder of exam is unchanged without pulmonary hypertension or other concurrent issues.

Given these findings, it is reasonable to continue Pimobendan and ACE-I as prescribed. Additionally consider use of Spironolactone for potential long term benefit. Continued assessment of progression in the future will help predict long term prognosis, which remains guarded at this stage (late B2). Patient will always be at risk for progression to CHF, development of arrhythmias and/or sudden death going forward. Monitoring of sleeping breathing rates is advised to screen for decompensation at home.

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

Elective anesthesia is not advised due to risk for complication.

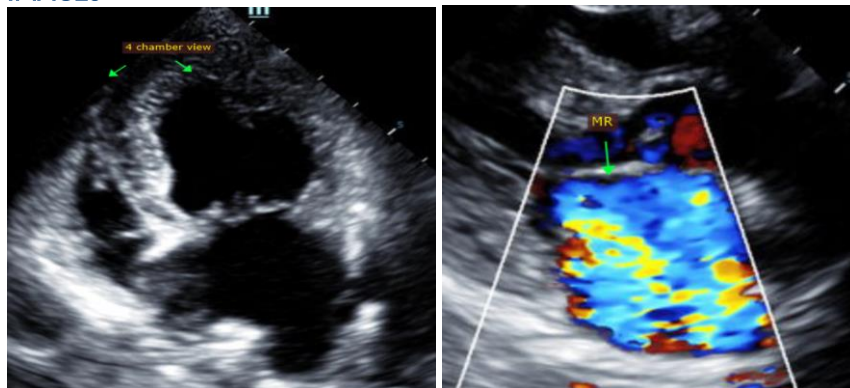
## PLAN

Continue Pimobendan and Enalapril as prescribed. Consider spironolactone 1-2mg/kg PO q12h.

Monitor renal values/BP every 3-4 months lifelong.

Recommend conservative monitoring 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.

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