

**PATIENT**

Merlin Preston

**SPECIES**

Canine

**BREED**

Sheltie

**SEX**

Male Neutered

**AGE**

6.1.13

**WEIGHT**

26lbs

**INTERPRETED BY**Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)**HOSPITAL NAME**Healing Paws  
Veterinary Wellness  
Center**REFERRING VET**

Dr. Preston

**INVOICE**

26559

**DATE**

9.26.22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Increased cough.

-Current medications: Hepato support liver supplement- 1 BID, Coenzyme q 10mg BID, Tramadol 50mg (cough suppressant) BID, Pimobendan 5mg ½ BID, Benazepril 5mg BID, Furosemide 20mg BID, Spironolactone 25mg ½ BID.

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

-Pertinent previous ultrasound results (5/2022 MML): Severe MR, severe LAE, moderate LVE, trace TR, mild PAH: 3.0m/s, trace AI. LA: 3.0, LV: 4.1.

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

**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. Severe eccentric mitral regurgitation with severe left atrial dilation. Normal MR velocity. Moderate LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Mild right heart enlargement. The pulmonic valve is normal in morphology and mobility. Aortic valve is normal with normal mobility. Normal pulmonic and aortic outflow velocities (variable with HR). No pulmonic and trace 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	5.4	NM	NM	2.2	43	74	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	112	1.7	1.4	11.8	3.0	4.3	2.5
*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 severe mitral and mild tricuspid regurgitation. Significant 4 chamber enlargement indicates the risk for spontaneous congestive heart failure is high, although no obvious progression is seen here. Mild pulmonary hypertension is suspected, and no additional issues are identified.

The patient reportedly has a progressive cough and repeat chest radiographs should be recommended to screen for early recurrent decompensation. A mechanical cough is best treated using Hydrocodone, as increasing the Lasix will not influence this type of symptom.

Close monitoring for recurrent clinical signs is recommended. Unfortunately, with this degree of heart disease and congestion, the prognosis is guarded to poor with an average survival time of 6mo at this point. Most dogs are able to maintain a good quality of life for some time however with medications. Going forward, patient will remain at high risk for recurrent CHF (left or right sided), LA tear, collapse episodes and/or development of malignant arrhythmias in the future. Periodic centesis is recommended if the patient experiences discomfort, drop in appetite or labored breathing.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit once stabilized. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Monitoring of sleeping breathing rates is recommended as the best way to screen for improvement/recurrent CHF at home.

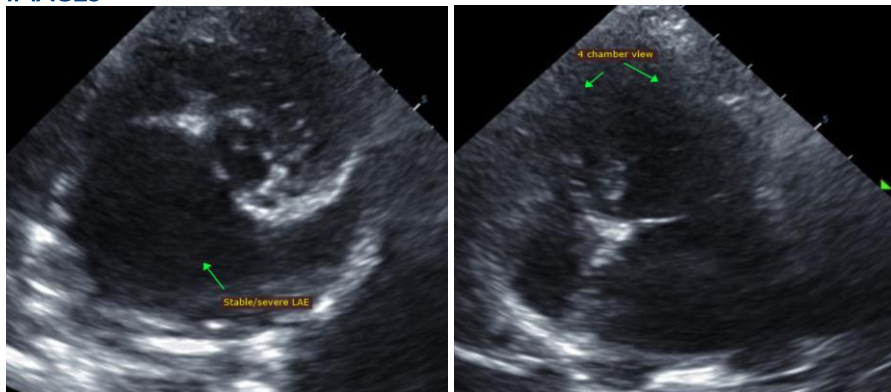
## PLAN

Screening BP and CXR are recommended. Continue 4 medications as prescribed. Consider Hydrocodone pending CXR results.

Monitor renal values and BP every 3-4 months.

A recheck echocardiogram is recommended in 6 months to screen 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.

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