



**PATIENT**

Daisy Staehle

**SPECIES**

Canine

**BREED**

Maltese

**SEX**

Female Spayed

**AGE**

14.3 years

**WEIGHT**

4.6lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Kristen Carpenter,  
DVM

**HOSPITAL NAME**

Penridge Animal  
Hospital

**REFERRING VET**

Dr. Peters

**INVOICE**

47843

**DATE**

5/13/26

**PRESENTING CLINICAL SIGNS**

History: Grade 4-5/6 heart murmur. History of CHF 12/2025; managed with Pimobendan, Lasix, and Benazepril. - Recent worsening of cough. Improved but persistent despite addition of Hydrocodone. Cough sounds more consistent with collapsing trachea. - Sleeping RR while in hospital day of echo was 12bpm. On grain inclusive kibble. Labs (1/2026): BUN 35, creat 0.9. Overall WNL  
-Current medications: -Lasix suspension (10mg/ml) 0.22ml PO BID, Pimobendan 2.5mg, 1/2t AM, 1/4t PM, Benazepril 10mg, 1/4t PO BID, Hydrocodone 5mg/ homatropine 1.5mg /5ml: 0.3ml BID-TID ( increased today to 0.5 mL TID).  
-CXR (4/20/26): Cardiomegaly, no overt evidence of repeat CHF but interpretation limited d/t motion artifact, dorsal deviation of the trachea, intrathoracic collapsing trachea (severe).

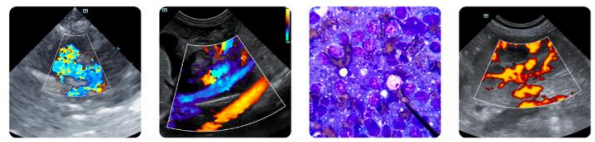
**ECHOCARDIOGRAM FINDINGS**

2D, m-mode and Doppler imaging are available. Diffuse thickening of mitral valve leaflets (anterior> posterior) with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial dilation. Significant LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened, with no tricuspid regurgitation. Normal right heart. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and 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)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	5.0	NA	NM	2.0	58	92	0.1
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)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	NM	1.5	0.8	2.1	1.9	2.8	1.2
*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)
*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



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## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing severe mitral regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. No additional issues such as systolic dysfunction are identified.

The described cough is likely multi-factorial in origin, including a mechanical component due to cardiomegaly, possible concurrent airway disease and/or recurrent CHF given the severity of disease. Even without obvious CHF on recent CXR, full lifelong cardiac support should be continued going forward. Cough suppression is also warranted, as the cough is more likely to be mechanical in origin. Monitoring of sleeping breathing rates in the future will be paramount to determine the origin of any future cough. The average survival of canine patients with active pulmonary edema is 8-9 months on medications; however, they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Monitoring of renal values is recommended lifelong.

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

Elective anesthesia is not advised, as there is high risk for complication.

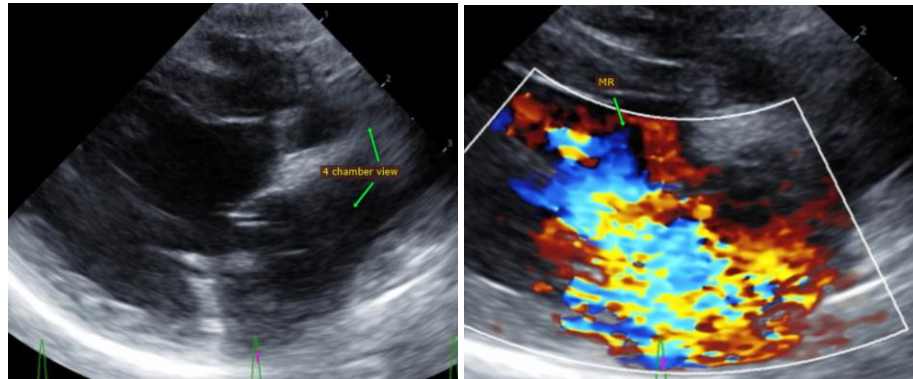
## PLAN

Continue Pimobendan 0.3mg/kg PO q12h. Continue Lasix 1 mg/kg PO q12h. Continue ACE-I 0.5mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Consider more aggressive Hydrocodone if needed.

A renal panel and BP are recommended in 10-14 days, then every 3-4 months on diuretics to ensure tolerance of medications.

A recheck echocardiogram is recommended in 6 months to screen for progression, sooner if clinical signs arise/persist.

## 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**  
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