



**PATIENT**

Lily Angus

**SPECIES**

**BREED**

Minature Poodle

**SEX**

Female Spayed

**AGE**

12 years

**WEIGHT**

13.2lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Mark van Campen,  
DVM

**HOSPITAL NAME**

Mississippi Hills  
Animal Hospital

**REFERRING VET**

Dr. van Campen

**INVOICE**

24001

**DATE**

5/3/22

**PRESENTING CLINICAL SIGNS**

History: Diagnosed with CHF in 2018. Grade V/VI holosystolic heart murmur. Diagnosed with hypertension in 2021. BP: 165mmHg. Assess prior to dental.

-Current medications: Furosemide , Vetmedin 1.25mg, Fortekor 2.5mg, Apoquel,

-Abnormal PE/Chem/CBC/UA Results: UPC 1.27 (was 3.8 in 2018).

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with marked prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with marked left atrial dilation. Normal MR velocity. Moderate LV dilation with hyperdynamic myocardial function. The tricuspid valve appears thickened with mild TR. Mild right heart enlargement, consistent with early pulmonary hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic and pulmonic outflow velocities with laminar flow. No AI/PI. No pericardial or pleural effusion noted. No obvious cardiac masses.

**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	5.1		2.2	2.8	33	60	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	NM	1.5	NM	6.0	2.9	3.1	1.1
*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)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The cause of the murmur is chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Marked left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. Early pulmonary hypertension is noted, which is not surprising given the degree of disease. No additional issues are identified.

Given severity of disease seen here, a previous diagnosis of congestive heart failure is supported, and medications should be continued lifelong as below. Spironolactone is recommended for long-term benefit. Monitoring of sleeping respiratory rates will be paramount to screen for congestive



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heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time 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.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

Elective anesthesia is not advised, as there is high risk for complication. Risk: benefit ratio should be considered. Consider consultation with and/or referral to a facility with an anesthesiologist. Should you elect to proceed, cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, iso or sevoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O<sub>2</sub> cage. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Moderate IV fluid restriction is recommended to avoid fluid overload, while considering comorbidities, hydration status, BP, etc. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

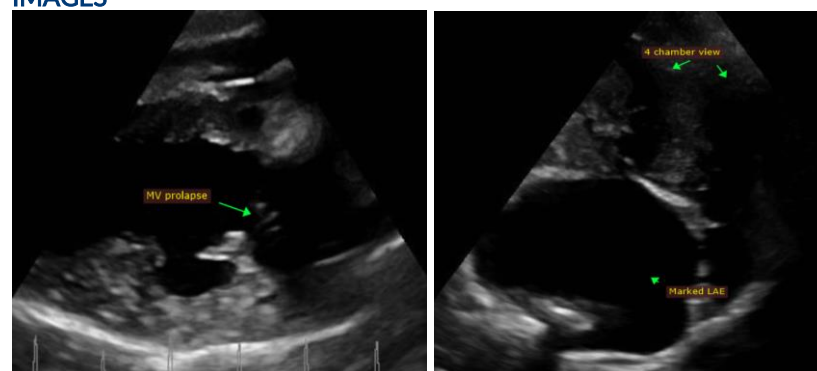
**PLAN**

Administer Pimobendan 0.3mg/kg PO q12h. Administer Furosemide 1-2mg/kg PO q12h. Administer ACE-I 0.5mg/kg PO q12h. Institute spironolactone 1-2mg/kg PO q12h.

Monitor SRRs at home. Monitor renal values and BP every 3-4 months lifelong.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.

**IMAGES**





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Lily Angus

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.

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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

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