

**PATIENT**

Bella Scotland

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Female Spayed

**AGE**

11 years

**WEIGHT**

5lbs

**INTERPRETED BY**Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)**IMAGING PERFORMED BY**

Amy Mayhew, LVT

**HOSPITAL NAME**

SVS Imaging MI

**REFERRING VET**Briarwood Veterinary  
Hospital**INVOICE**

25106

**DATE**

6/30/22

**PRESENTING CLINICAL SIGNS**

History: Grade 3/6 heart murmur. Syncope.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Severe diffuse nodular thickening of mitral valve leaflets with minimal prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial enlargement. MR velocity is elevated. Mild LV dilation with hyperdynamic myocardial function and evidence of volume overload. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. No significant right heart dilation (subjective). The pulmonic and aortic valves appear normal in appearance and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency noted. No pericardial or pleural effusion seen.

**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	6.5	3.0	NM	2.2	62	94	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)	
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW	
PATIENT	NM	1.1	0.7	2.3	2.2	2.6	1.0	
*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**

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe left atrial and ventricular enlargement indicates there is an elevated risk for spontaneous congestive heart failure. Mild pulmonary hypertension is noted, which is likely due to chronic left atrial pressure elevation. No comorbidities are seen such as systolic dysfunction.

Syncope in this patient is most likely cardiogenic in origin. Possible causes include poor forward blood flow leading to hypoxia, early CHF, pulmonary hypertension (only mild identified), an arrhythmia and/or blood pressure swings. A vagal event, neurologic causes, or other systemic issues are also possible. Regardless, given this severity of disease on echo life-long support is recommended including Spironolactone. Long term prognosis is guarded to poor, with risk for

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progression to CHF, development of malignant arrhythmias and/or sudden death in the future. Should syncope persist despite medications, a holter monitor and/or additional diagnostics may be warranted to rule out other contributing causes.

**SPECIES**

Canine

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or worsening collapse episodes in the future. Elective anesthesia is not advised.

**BREED**

Chihuahua

**PLAN**

Baseline BP and ECG is recommended. Administer Pimobendan 0.3mg/kg PO q12h. Institute spironolactone 1-2mg/kg PO q12h. Institute ACEI 0.5mg/kg PO q12h.

**SEX**

Female Spayed

Monitor SRRs at home. Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics. If syncope persists, a holter monitor and/or further evaluation is advised.

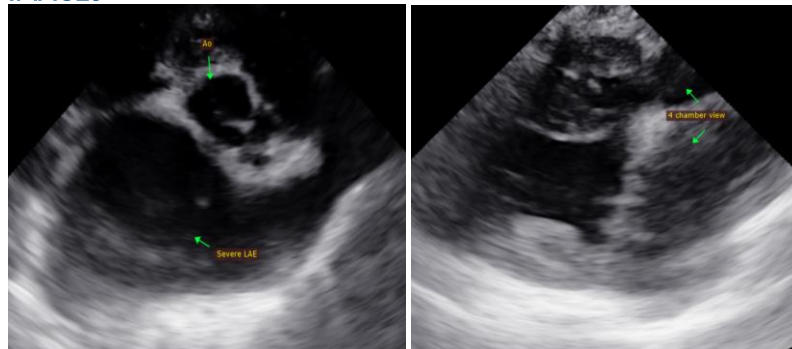
Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.

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**IMAGES****INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

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.

**IMAGING PERFORMED BY**

Amy Mayhew, LVT

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

**HOSPITAL NAME**

SVS Imaging MI

Maggie Machen Lamy, DVM  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
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