



**PATIENT**

Tino Bedell

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Male Neutered

**AGE**

14.2 years

**WEIGHT**

8.2lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Loetitia St-Jacques,  
LVT/RVT

**HOSPITAL NAME**

Truckee Meadows  
Veterinary Hospital

**REFERRING VET**

Dr. Zsumel

**INVOICE**

28994

**DATE**

2/14/23

**PRESENTING CLINICAL SIGNS**

History: Grade 4-5/6 systolic heart murmur. Chronic cough. CXR showed mild cardiomegaly and a dilated pulmonary artery. No CHF. Initially, owners declined echo and we started a trial of Sildenafil 20mg 1/4 T PO BID and cough improved significantly.

-Abnormal PE/Chem/CBC/UA Results: Heartworm test negative. BW: unremarkable.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Mild LV dilation with hyperdynamic myocardial function. The tricuspid valve appears thickened with mild tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension. Mild right heart enlargement. Mild MPA and branch dilation. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic and trace 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	4.3	NM	1.8	56	88	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	150	1.0	0.8	3.7	2.1	3.0	1.3
*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 moderate mitral and mild tricuspid regurgitation. Moderate left atrial enlargement indicates there is relatively low risk for imminent complication, however risk for progression to spontaneous congestive heart failure in the future is elevated. Moderate pulmonary hypertension is noted, likely secondary to a reported chronic cough. The right heart and MPA enlargement appear mild secondary to PAH. No additional issues are identified.



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Given these findings, it is reasonable to continue Sildenafil going forward. Additionally, Pimobendan and an ACE-I are recommended due to left-sided cardiac enlargement. The reported cough likely reflects concurrent primary respiratory disease in this predisposed breed which should also be addressed. Options include Hydrocodone, a course of Baytril, Theophylline, etc. It is important to note that Sildenafil does not directly address the cough; rather this lowers pulmonary pressures to avoid clinical signs such as exertional syncope.

Assessment of progression in the future will help predict long term outcome; however, prognosis is guarded at this stage (B2).

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

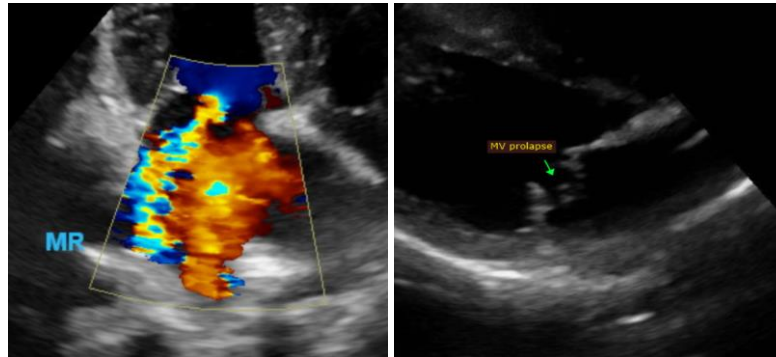
Once on the medications for 3-5 days, anesthetic risk is considered moderately elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, Propofol or alfaxalone induction, iso or sevo gas) are recommended. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

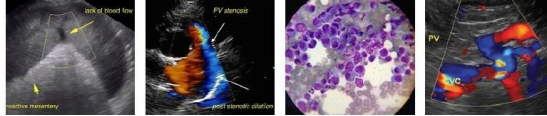
**PLAN**

Baseline BP. Continue Sildenafil 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Pending BP >130mmHg, institute ACE-I 0.5mg/kg PO q12h. Further address the cough using Hydrocodone, etc. as discussed.

Recommend monitor for progression with a recheck echocardiogram in 6 months.

**IMAGES**





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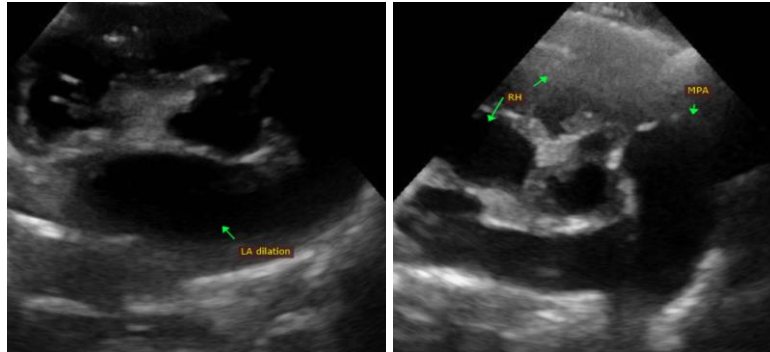
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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