



**PATIENT**

Rila Quezada

**SPECIES**

Canine

**BREED**

Australian Doodle

**SEX**

Female Spayed

**AGE**

3 years

**WEIGHT**

40lbs

**INTERPRETED BY**

Maggie Machen  
 Lamy, DVM, DACVIM  
 (Cardiology)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Santa Clara Animal  
 Hospital

**REFERRING VET**

Dr. Zulauf

**INVOICE**

21776

**DATE**

10/29/21

**PRESENTING CLINICAL SIGNS**

History: Elevated ProBNP on routine bloodwork. Patient is on a grain free diet. Otherwise WNL.  
 Heart Rate and Respiratory Rates HR: 138 RR:50  
 -Blood Pressure: 150/77 (103)mmHg.  
 -Current Medications: Carnitine (OTC) 1000mg PO BID. Taurine (OTC) 500mg PO BID.

**ELECTROCARDIOGRAPHIC FINDINGS** \*Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

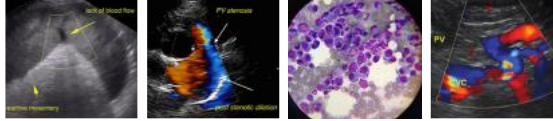
A single lead ECG is available; 12.5mm/s, 10mm/mV. The average heart rate is 130bpm with a regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed. ECG diagnosis: Normal sinus rhythm.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Mild to moderate eccentric mitral regurgitation with mild left atrial dilation. Mild LV dilation in both systole and diastole with mild LV dysfunction. The tricuspid valve is normal with no tricuspid regurgitation. Mild right atrial and ventricular dilation. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic insufficiency and trace pulmonic insufficiency. 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	NM	NA	1.3	1.4	22	40	0.64
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	160	2.1	0.8	18.1	2.5	4.4	3.4
*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)
				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
Adapted from June Boon, Veterinary Echocardiography, 1998				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Hansson et al, Vet Rad and Ultrasound 2002				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease causing mild to moderate mitral regurgitation. Mild left atrial enlargement indicates the current risk for complication is low. Of more concern is mild LV dysfunction with 4 chamber dilation. This is suspected to be dietary in origin given the young age of the patient and reported diet history. A diet change is highly recommended (see WSAVA guidelines), despite being supplemented with taurine and carnitine. Studies have shown that simply supplementing taurine independent of a diet change has various results in changing outcome. No additional issues are identified. The ECG is unremarkable with a normal sinus rhythm.

Given these findings, no cardiac medications are clearly indicated. An increased taurine supplement should be administered, although it is likely unnecessary long-term if the diet is changed. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

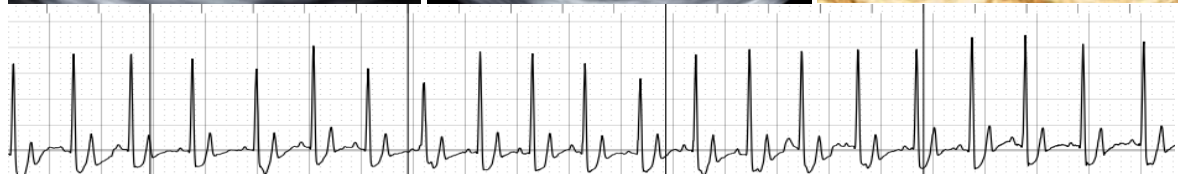
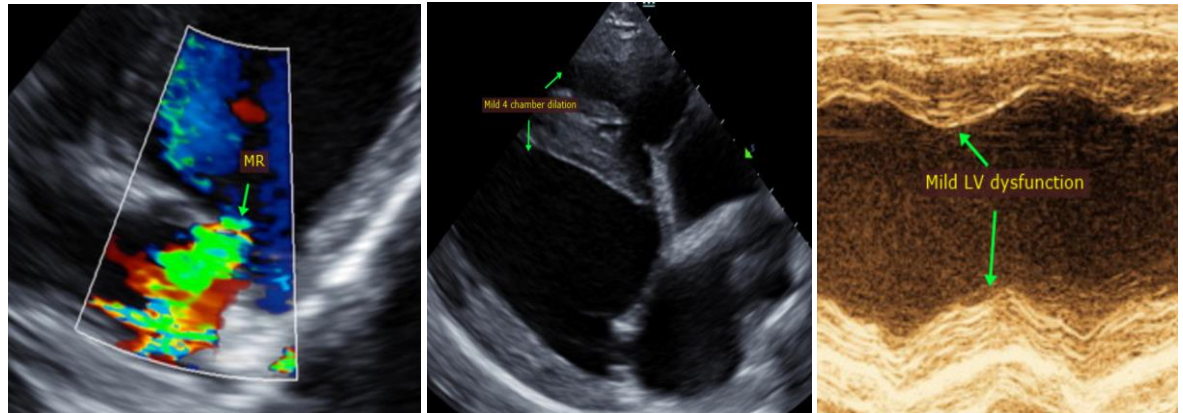
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

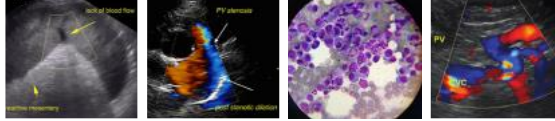
**PLAN**

Immediate diet change recommended. Increase taurine supplementation 1000mg PO q12h.

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

**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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