



**PATIENT**

Clover Graber

**PRESENTING CLINICAL SIGNS**

History: Grade 3/6 heart murmur. Assess prior to dental.

**SPECIES**

Canine

**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; 50mm/s, 20mm/mV. The average heart rate is 120bpm (range 81-166bpm). P waves cannot be identified consistently throughout; however, a sinus origin is suspected. P for every QRS complex and vice versa. The P and QRS morphologies are positive.

**BREED**

Cavalier

No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Profound respiratory sinus arrhythmia.

**SEX**

Male Neutered

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Mild eccentric mitral regurgitation with mild left atrial dilation. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with no tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

**AGE**

13 years

**WEIGHT**

19.6lbs

**CARDIAC CHART**

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

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>	NM	NA	1.6	1.5	31	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)	
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW	
<b>PATIENT</b>	NM	1.7	0.9	8.9	2.4	3.4	2.4	
*Normal chamber parameters expressed as a mean value (SD)								
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>								
*Note: All measurements based upon multi-modal images and methods. An average value is reported.								
Adapted from June Boon, Veterinary Echocardiography, 1998					5	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435					10	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
Hansson et al, Vet Rad and Ultrasound 2002					15	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995					20	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
					25	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
					30	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
					35	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
					40	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
					45	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)

**IMAGING PERFORMED BY**

Dana Alterman,  
RDCS, LVT

**HOSPITAL NAME**

Eubank Animal Clinic

**REFERRING VET**

Dr. Gonzales

**INVOICE**

27197

**DATE**

10/31/22

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease causing mild mitral regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. No concurrent issues such as systolic dysfunction or pulmonary hypertension are noted in this study.



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The ECG is most consistent with a respiratory sinus arrhythmia, secondary to high vagal tone or sedation. Correlation with respiratory phase and/or a normal response to exercise/stress should be assessed.

**SPECIES**

Canine

In an asymptomatic dog with no significant left atrial enlargement, no cardiac medications are clearly indicated. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage. 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.

**BREED**

Cavalier

**SEX**

Male Neutered

Anesthetic risk is considered mild if needed. Pre-medicate with a vagolytic. 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.

**AGE**

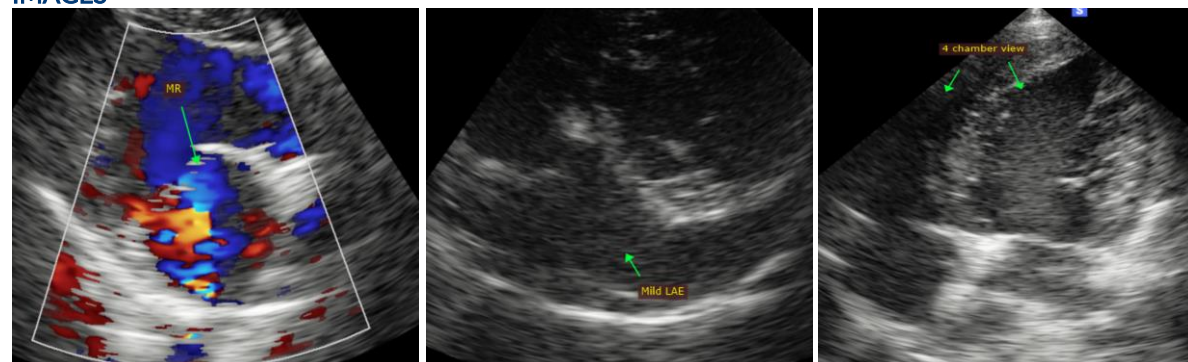
13 years

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

**IMAGES**

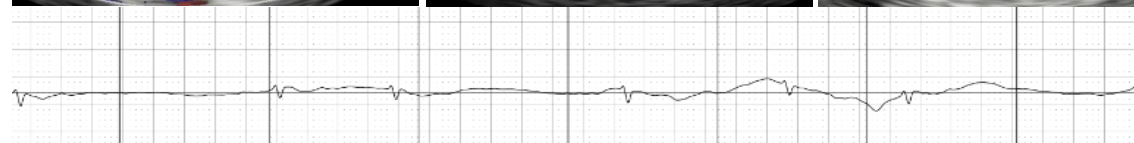
**WEIGHT**

19.6lbs



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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.

**REFERRING VET**

Dr. Gonzales

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.

**INVOICE**

27197

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**DATE**

10/31/22