

**PATIENT**

Purdy Hutchings

**SPECIES**

Canine

**BREED**

Australian Shepherd

**SEX**

Female Spayed

**AGE**

16 years

**WEIGHT**

25.4lbs

**INTERPRETED BY**

Maggie Machen  
 Lamy, DVM, DACVIM  
 (Cardiology)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Vetco Total Care  
 #1296

**REFERRING VET**

Dr. DeMarco

**INVOICE**

31630

**DATE**

6/29/23

**PRESENTING CLINICAL SIGNS**

History: Presented with heart murmur, heavy breathing, weakening back legs. P was seen at an ER clinic on 2/24/23 for having fainted. ER prescribed Vetmedin 5mg - 1/2-tab BID (#20), Carprofen 100mg - 1/2-tab SID for 10 days (#5). Has since finished those medications and has not continued them, no further fainting episodes. Diet includes Purina One canned - 1/3 can once daily, & Pepperoni sticks. P is a picky eater per O and sometimes no appetite. Normal findings on exam: Ears, eyes, general appearance - BCS 4/9, lymph nodes, abdomen, mucous membranes, musculoskeletal, rectal, respiratory, skin, coats & nails, urogenital, behavior. Abnormal findings on exam: Mouth/Dental - Significant dental calculus, Circulatory - Tachycardia, Grade 4-5/6 L systolic murmur, skipped beats. Pulses are synchronous. Current Medications Gabapentin 100mg - 1/2 cap 9 hours before appt, 1/2 cap 90 min before appt.

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

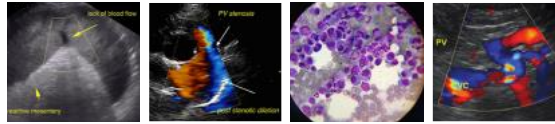
A single lead ECG is available; 50mm/s, 20mm/mV. The average heart rate is 210bpm with a largely regular rhythm (range 200-230bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed. ECG diagnosis: Normal sinus tachycardia.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Mild to moderate eccentric mitral regurgitation with mild left atrial dilation. Elevated MR velocity. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with trace tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. 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. Trace aortic and no 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	6.9	3.0	1.1	1.5	52	90	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	205	1.6	1.1	11.5	2.7	3.6	1.8
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)



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**BODY WEIGHT DEPENDENT PARAMETERS**

Adapted from June Boon, Veterinary Echocardiography, 1998  
 Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435  
 Hansson et al, Vet Rad and Ultrasound 2002  
 Bonagura et al. Echocardiography: principles of interpretation, Vet  
 Clin North Am 15:1177, 1995

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)
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 mild to moderate mitral and trace tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Mild aortic insufficiency and an elevated MR velocity may suggest systemic hypertension and a baseline BP is strongly recommended. Finally, mild pulmonary hypertension is noted, which may be due to primary respiratory disease in this case. No additional issues are identified.

Given these findings, Pimobendan is not yet indicated and those not need to be reinstated. Pending BP assessment, no obvious cause for current clinical issues is identified in this study. Baseline CXR are also recommended. The ECG does confirm a sinus tachycardia is present. This a benign physiologic response to systemic or environmental changes. If not performed, baseline lab work is also strongly recommended +/- systemic workup.

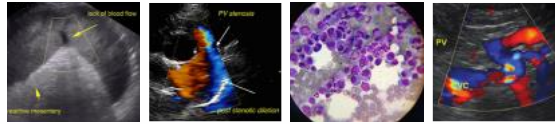
Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse 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**

No indication for Pimobendan at this time. **Baseline BP**, lab work and CXR are strongly recommended.

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



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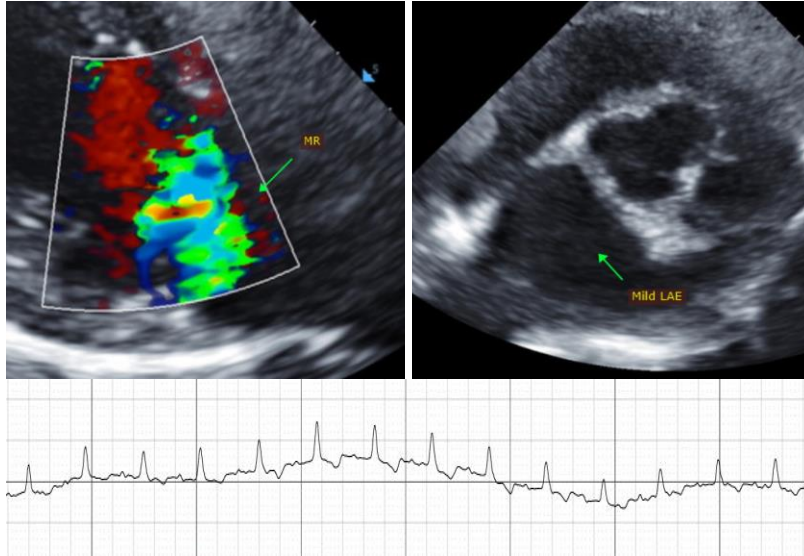
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**IMAGES**



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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