



**PATIENT**

Gibbs Schreiner

**SPECIES**

Canine

**BREED**

Maltese

**SEX**

Male Neutered

**AGE**

11 years

**WEIGHT**

8.9lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

26226

**DATE**

9/7/22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. History chronic valvular disease - Stage B2. Currently, daily coughing, but inconsistent. He does not tolerate hycodan---drools and vomits. Gibbs continues to eat well with normal activity and no other clinical issues. On exam: NSR, grade IV/VI murmur with PMI left apical area, PSS, lung fields clear, no cough with tracheal palpation. Medications: Pimobendan/vetmedin 3.75mg 1/3 tab twice a day \*No sedation for study.  
-Pertinent previous echo findings 3/15/22 Maggie Machen Lamy, DVM, DACVIM-Cardiology) LA 2.1 cm; LA:Ao 1.8; LV 2.6 cm; moderate LAE; mild LVE; moderate MR; trace TR.

**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; 25mm/s, 20mm/mV. The average heart rate is 130bpm (range 83-166bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. Following sinus pauses/brief bradycardia the P wave appears briefly inverted, consistent with a wandering pacemaker. No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Respiratory sinus arrhythmia with a wandering pacemaker due to high vagal tone.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and Doppler imaging is available.

**Left ventricle:** The LV diameter is mildly increased with adequate myocardial function. LV wall thicknesses are normal.

**Left atrium:** The left atrium is moderately dilated.

**Mitral valve:** The mitral valve is diffusely thickened with significant prolapse into the left atrial lumen. Moderate to severe eccentric mitral regurgitation with a normal velocity.

**Aortic valve/aorta:** The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. Mild aortic insufficiency.

**Right ventricle:** Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.

**Right atrium:** Normal RA dimension.

**Tricuspid valve:** The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Velocity consistent with early pulmonary hypertension.

**Pulmonic valve/pulmonary artery:** The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.

**Pericardium/other:** No pericardial or pleural effusion noted. No obvious cardiac masses.

**2-Dimensional Measurements**

Ao diam (cm)	1.2
LA diam (cm)	2.2
LA:Ao (Swe)	1.8
IVS thickness (cm)	0.6
LVID diastole (cm)	2.5
PW thickness (cm)	0.7
LVID systole (cm)	0.9
FS (%)	64

**Doppler Measurements**

PV Vmax (m/s)	1.1
AoV Vmax (m/s)	1.7
MR Vmax (m/s)	6.5
TR Vmax (m/s)	3.0
TR PG (mmHg)	36



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**INTERPRETATION OF THE FINDINGS**

Chronic degenerative valve disease persists with overall stability. The aortic leak is slightly increased, and a blood pressure should be assessed. The left heart dimensions are similar to previous without obvious progression. Finally, early pulmonary hypertension is documented, which is a new finding. This is likely secondary to a combination of elevated LA pressure and a reported cough. No additional issues are identified.

The ECG shows a respiratory sinus arrhythmia with presumably respiratory variation. Of some interest, the P wave morphology is variable throughout the tracing; however, this is closely correlated with heart rate (i.e., following a brief pause, the P wave inverts). This is most consistent with a wandering pacemaker, which is a normal finding in dogs with high vagal tone. In this particular case, high vagal tone is likely secondary to respiratory disease. No treatment or follow-up is warranted.

Given these findings, continue Pimobendan is recommended as below. Pending BP assessment, if >150mmHg, an ACE-I is also recommended due to increase in aortic insufficiency. Prognosis remains guarded long-term.

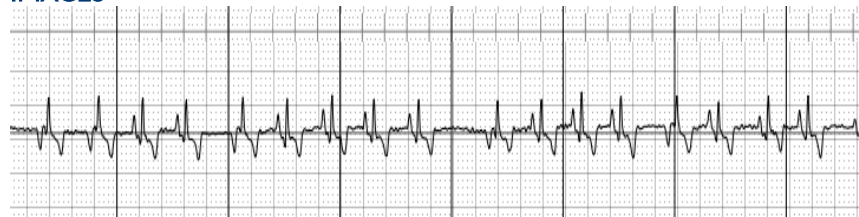
**RECOMMENDATIONS**

- Continue Pimobendan 0.3mg/kg PO q12h.
- Baseline BP recommended, if >150mmHg, institute ACE-I 0.5mg/kg PO q12h.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Anesthetic risk is considered mild; however, premedicating with a vagolytic is recommended due to high vagal tone. . 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.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

**PLAN**

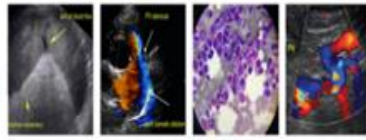
- Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

**IMAGES**





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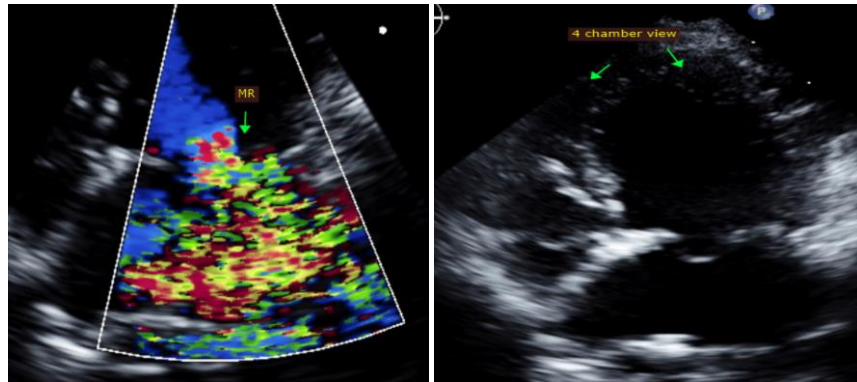
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

**Echocardiogram performed by:** Pamela Harrigan, RDCS  
Pet Animal Ultrasound Service (4paus.com)