

**PATIENT**

Buttons St. Pierre

**SPECIES**

Canine

**BREED**

Maltese Mix

**SEX**

Male Neutered

**AGE**

10 years

**WEIGHT**

20.25lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

24237

**DATE**

5/17/22

**PRESENTING CLINICAL SIGNS**

History: Assess prior to anesthesia. He has had an arrhythmia in the past while under anesthesia (had been given hydromorphone, propofol). He developed bradycardia and when given atropine, developed 2nd degree AV block. Presently, good appetite and activity level. On exam today: NSR, no murmurs noted, PSS, lung fields clear. BP: 130-140mmHg. Currently, no medications. \*No sedation for study.

**ECHOCARDIOGRAM FINDINGS**

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

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

**Left atrium:** The left atrium is normal.

**Mitral valve:** The mitral valve is mildly thickened with no prolapse into the left atrial lumen. Mild 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. No 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 normal with mild 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.

**Heart rhythm:** ECG reveals a sinus rhythm with an average HR of 160bpm.

**2-Dimensional Measurements**

Ao diam (cm)	1.7
LA diam (cm)	2.0
LA:Ao (Swe)	1.2
IVS thickness (cm)	0.9
LVID diastole (cm)	2.89
PW thickness (cm)	0.84
LVID systole (cm)	1.6
FS (%)	45

**Doppler Measurements**

PV Vmax (m/s)	1.4
AoV Vmax (m/s)	2.0
MR Vmax (m/s)	5.3
TR Vmax (m/s)	3.2
TR PG (mmHg)	41

**INTERPRETATION OF THE FINDINGS**

The cause of the murmur is chronic degenerative valve disease causing mild to moderate mitral and mild tricuspid regurgitation. Early PAH is noted, which is of unknown significance in an asymptomatic dog. 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. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1).

These findings would suggest anesthetic risk is mild. The included ECG does not show any significant arrhythmias, although high vagal tone is suspected. Consider pre-medicate with a glycolytic and pre-oxygenate prior to induction.



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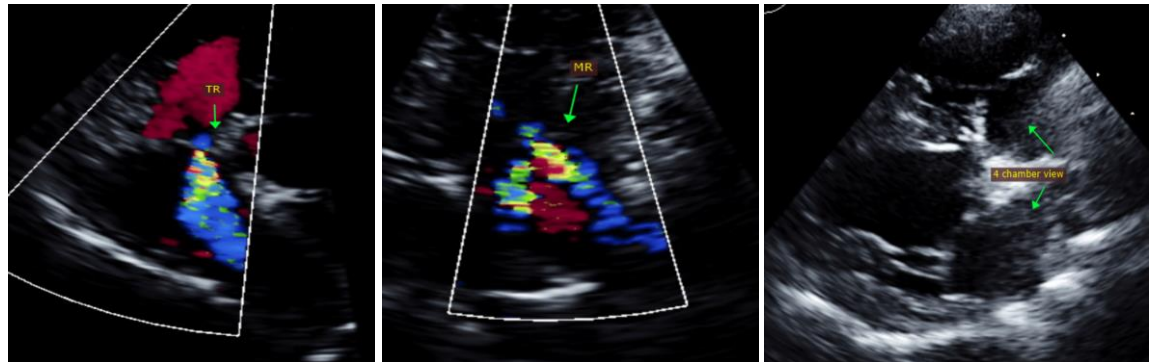
**RECOMMENDATIONS**

- In an asymptomatic dog without significant left atrial enlargement, no cardiac medications are clearly indicated.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Anesthetic risk is considered mild if needed. Cardiac protective drug choices (pre-medicate with a vagolytic due to the history) 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 6-12 months, sooner if any development of clinical signs.

**IMAGES**



**IMAGING PERFORMED BY**

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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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**Echocardiogram performed by:**

Pamela Harrigan, RDCS  
Pet Animal Ultrasound Service (4paus.com)

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