



**PATIENT**

Katie Roberts

**SPECIES**

Canine

**BREED**

Chihuahua Mix

**SEX**

Female Spayed

**AGE**

11 years

**WEIGHT**

13.44lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING  
PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary  
Specialty Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

21469

**DATE**

10/12/21

**PRESENTING CLINICAL SIGNS**

History: Heart murmur. Some coughing when she gets excited. The owner has also noted some occasional labored breathing. Good appetite and energy. Referring vet started Enalapril. CV/RESP: NSR, grade III/VI murmur with PMI left apical area, PSS, lung fields clear. BP: 130mmHg x 5.  
-Current medications: 1) Enalapril 2.5mg 1 tab daily 2) Prednisone 5mg 1/2-tab EOD (being discontinued) \*Sedated with propofol.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and Doppler imaging is available.  
**Left ventricle:** The LV diameter is mildly increased with adequate function. LV wall thicknesses are normal.  
**Left atrium:** The left atrium is borderline moderately dilated.  
**Mitral valve:** The mitral valve is diffusely thickened with moderate prolapse into the left atrial lumen. Moderate 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 trace tricuspid regurgitation. Velocity consistent with the 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 130bpm.

**2-Dimensional Measurements**

Ao diam (cm)	1.6
LA diam (cm)	2.6
LA:Ao (Swe)	1.6
IVS thickness (cm)	0.6
LVID diastole (cm)	3.1
PW thickness (cm)	0.6
LVID systole (cm)	2.1
FS (%)	32

**Doppler Measurements**

PV Vmax (m/s)	0.6
AoV Vmax (m/s)	1.1
MR Vmax (m/s)	4.3
TR Vmax (m/s)	2.9
TR PG (mmHg)	34

**INTERPRETATION OF THE FINDINGS**

Chronic degenerative valve disease causing moderate mitral and trace tricuspid regurgitation. Moderate left atrial enlargement indicates there is relatively low risk for imminent complication, however risk for progression to spontaneous congestive heart failure in the future is elevated. Early pulmonary hypertension is noted which is likely due to a reported cough. No additional issues are identified.

Given LA dilation, Pimobendan is recommended as below. No obvious indication for Enalapril given reasonable systemic pressures. Assessment of progression in the future will help predict long term outcome, however prognosis is guarded at this stage (B2).

The cough is suspected to be due to a combination of mainstem bronchi compression and potentially airway disease in this predisposed breed. Screening CXR, hydrocodone, etc. may be useful.



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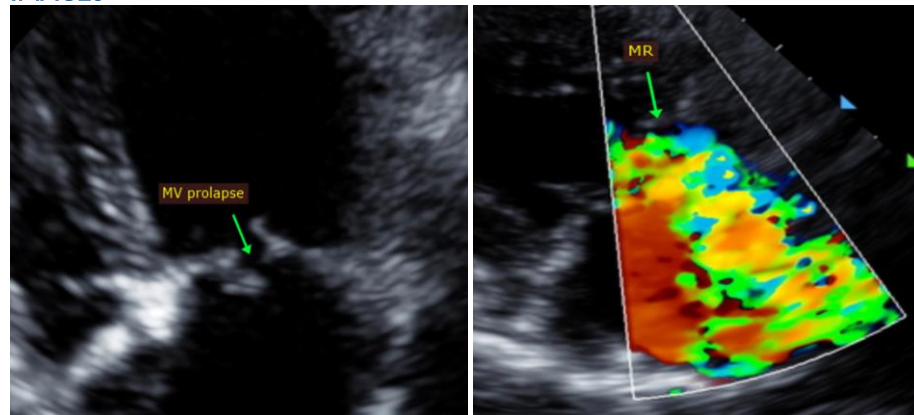
**RECOMMENDATIONS**

- Institute heart muscle support Pimobendan 0.3mg/kg PO q12h.
- No obvious indication for Enalapril.
- Consider CXR, hydrocodone, etc. as discussed.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Once on Pimobendan for 3-5 days, 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.
- 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**



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)