



**PATIENT**  
Edgar Cinquegrana

**SPECIES**  
Canine

**BREED**  
Chihuahua

**SEX**  
Male Neutered

**AGE**  
9 years

**WEIGHT**  
13.5lbs

**INTERPRETED BY**  
Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING PERFORMED BY**  
Pamela Harrigan,  
RDCS

**HOSPITAL NAME**  
Mass Veterinary Services

**REFERRING VET**  
Dr. Masloski

**INVOICE**  
30073

**DATE**  
4/5/23

**PRESENTING CLINICAL SIGNS**

History: Edgar is referred for a heart murmur and coughing. Chest films revealed cardiomegaly with some compression of his mainstem bronchus. He was started on both pimobendan and enalapril with improvement in the cough. He has a normal RR at home. Appetite somewhat less than normal; his activity remains normal. On exam: NSR, grade IV/VI murmur with PMI left apical area radiating to right, PSS, lung fields clear, mm pink, moist, CRT<2, BP: 80mmHg x 5. Current medications: 1) Pimobendan/vetmedin 5mg 1/2 tab am with 1/4 tab pm 2) Enalapril 5mg 1 tab daily \*No sedation for study.

**ECHOCARDIOGRAM FINDINGS**

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

**Left ventricle:** The LV diameter is moderately increased with hyperdynamic function. LV wall thicknesses are normal.

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

**Mitral valve:** The mitral valve is diffusely thickened with mild prolapse into the left atrial lumen. 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. 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 mildly thickened with trivial tricuspid regurgitation.

**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 150bpm.

**2-Dimensional Measurements**

Ao diam (cm)	1.4
LA diam (cm)	2.6
LA:Ao (Swe)	1.9
IVS thickness (cm)	0.5
LVID diastole (cm)	3.7
PW thickness (cm)	0.5
LVID systole (cm)	1.8
FS (%)	51

**Doppler Measurements**

PV Vmax (m/s)	0.77
AoV Vmax (m/s)	1.8
MR Vmax (m/s)	5.3
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

**INTERPRETATION OF THE FINDINGS**

Chronic degenerative valve disease causing severe mitral and trivial 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. No additional issues are identified.

Given LA dilation, continued Pimobendan is recommended as below. The patients' blood pressure is extremely low and if this is considered accurate, Enalapril must be discontinued. Reassessment may be reasonable if the patient is not lethargic. Assessment of progression in the future will help predict long term outcome, however prognosis is guarded at this stage (B2).



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Edgar Cinquegrana

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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Canine

**RECOMMENDATIONS**

- Continue Pimobendan 0.3mg/kg PO q12h.
- Assuming BP is considered accurate, discontinue Enalapril.
- Consider CXR, hydrocodone, etc. as discussed.
- 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 (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.

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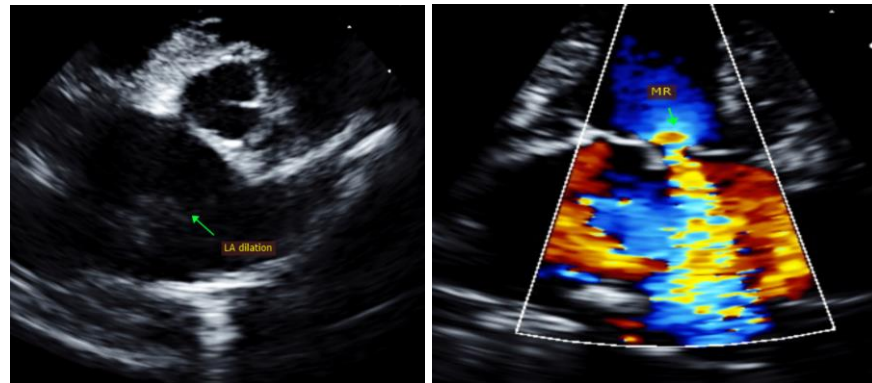
**PLAN**

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

**INTERPRETED BY**

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DACVIM (Cardiology)

**IMAGES**



**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS

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Services

**REFERRING VET**

Dr. Masloski

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.

**INVOICE**

30073

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**DATE**

4/5/23

**Echocardiogram performed by:**

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