



**PATIENT**

Henry Cady

**SPECIES**

Canine

**BREED**

Pug

**SEX**

Male Neutered

**AGE**

12 years

**WEIGHT**

20.3lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**PRESENTING CLINICAL SIGNS**

History: Henry was noted to have a heart murmur in August 2020. He was started on Pimobendan, Lasix and Enalapril at that time. Medications seemed to help with the coughing. Over the past week, the cough has worsened, and his Lasix was increased to 2.5 tabs (3.4mg/kg) but the cough continues. Henry did have an isolated collapse episode about 3 years ago. He is still eating well with no other issues noted. On exam today: NSR, grade III/VI murmur with PMI left apical area, PSS, lung fields clear, significant honking cough noted throughout exam. BP: 80-100mmHg. 1) Pimobendan/vetmedin 2.5mg 1 tab twice a day 2) Enalapril 5mg 1 tab daily 3) Lasix/furosemide 12.5mg 2.5 tabs twice a day.  
\*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 mildly dilated

**Mitral valve:** The mitral valve is thickened with mild prolapse into the left atrial lumen. Mild to moderate eccentric mitral regurgitation. Normal velocity.

**Aortic valve/Aorta:** The aortic valve is mildly thickened with normal mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.

**Right ventricle:** Normal right ventricular diameter and morphology.

**Right atrium:** Normal RA dimension.

**Tricuspid valve:** The tricuspid valve appears mildly thickened with septal prolapse and mild to moderate tricuspid regurgitation; velocity consistent with mild to moderate pulmonary hypertension.

**Pulmonary 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.

**IMAGING**

**PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary  
Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

24411

**DATE**

5/25/22

**2-Dimensional Measurements**

Ao diam (cm)	1.5
LA diam (cm)	2.0
LA:Ao (Swe)	1.3
IVS thickness (cm)	0.7
LVID diastole (cm)	2.7
PW thickness (cm)	0.7
LVID systole (cm)	1.1
FS (%)	59

**Doppler Measurements**

PV Vmax (m/s)	0.76
AoV Vmax (m/s)	1.6
MR Vmax (m/s)	5.2
TR Vmax (m/s)	3.5
TR PG (mmHg)	50

**INTERPRETATION OF THE FINDINGS**

The murmur is due to chronic degenerative valve disease causing mild to moderate mitral and tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Mild to moderate pulmonary hypertension is noted, which is likely developing secondary to the chronic cough. No concurrent issues such as systolic dysfunction 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).

Given these findings, the cough is non-cardiogenic in origin. Respiratory disease is most likely, given the nature of the symptom and signalment. If the cough is poorly



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controlled/progresses long term, this can certainly lead to worsening of PAH. Clinical signs of significant PAH include exertional dyspnea/collapse. Continued monitoring is advised. Cough control is recommended lifelong (hydrocodone, intermittent AI prednisone, fluoroquinolone for acute flare up, etc.). No obvious indication for medications in this patient given no right heart enlargement and a single isolated episode 3 years ago. Should exertional syncope or significant dyspnea effecting quality of life develop this should be reconsidered at that time.

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**RECOMMENDATIONS**

- No cardiac medications are clearly indicated and Lasix/Enalapril can be safely weaned/discontinued.
- Consider hydrocodone as needed.
- Consider further respiratory work-up/treatment as discussed.
- If exertional syncope develops, institute Sildenafil 1-2mg/kg PO q8-12h.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- No cardiac contraindication for general anesthesia prior to chamber enlargement.
- Monitor for development of a progressive 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.

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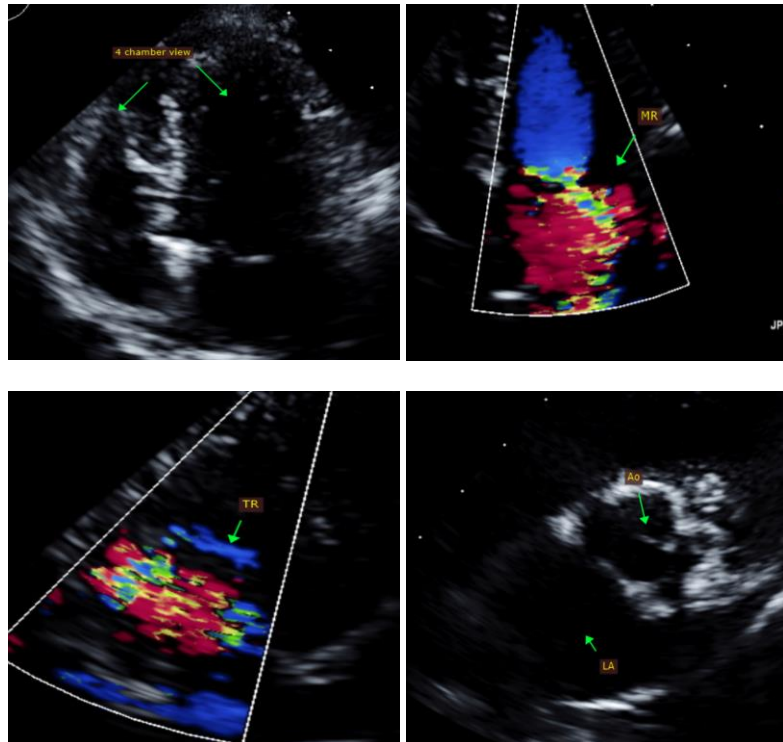
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**IMAGES**





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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.

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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.

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Pug

**Maggie Machen Lamy, DVM**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

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Male Neutered

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

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