

**PATIENT**

Penelope Musiak

**SPECIES**

Canine

**BREED**

Labrador Retriever

**SEX**

Female Spayed

**AGE**

5 years

**WEIGHT**

74.3lbs

**INTERPRETED BY**

Maggie Machen Lamy, DVM DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Pamela Harrigan, RDCS

**HOSPITAL NAME**

Mass Veterinary Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

32459

**DATE**

8/21/23

**PRESENTING CLINICAL SIGNS**

History: Penelope presented to the ER in August for coughing. A heart murmur was noted. Chest radiographs: Show biventricular cardiomegaly with concern for CHF. Started on Lasix in addition to insulin she was already taking for diabetes mellitus diagnosed in February 2023. Presently, her appetite has been decreased for the past 2 weeks as well as her thirst. The cough that was previously noted has stopped. Occasional panting noted at rest. She continues her normal exercise routine. Diet: Taste of the Wild grain free---diet recently changed. On exam today: NSR, no murmurs noted, PSS, lung fields harsh on inspiration R>>L, mm pink, moist, CRT<2. BP: 160mmHg x 3. Current medications: 1) NPH 19 units twice a day---presently getting less since decrease in appetite 2) Amoxicillin/clavulanic acid 875/125mg 1/2 tab twice a day 3) Cerenia 60mg 1 tab daily 4) Lasix/furosemide 20mg 1 tab twice a day 5) Enrofloxacin/Baytril 136mg 1 tab twice a day \*Sedated with Propofol for study.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and Doppler imaging is available. **Left ventricle:** The LV diameter is significantly increased with severe systolic dysfunction. LV wall thicknesses are mildly decreased. Increased sphericity. **Left atrium:** The left atrium is severely dilated. **Mitral valve:** The mitral valve is mildly thickened with no prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation. Decreased 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 and elongated, consistent with some degree of dysplasia. Moderate tricuspid regurgitation. Normal velocity. **Pulmonary valve/Pulmonary artery:** The pulmonic valve is normal in morphology and mobility. Trace 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 110bpm.

**2-Dimensional Measurements**

Ao diam (cm)	1.8
LA diam (cm)	4.6
LA:Ao (Swe)	2.5
IVS thickness (cm)	0.8
LVID diastole (cm)	5.0
PW thickness (cm)	0.7
LVID systole (cm)	4.1
FS (%)	17

**Doppler Measurements**

PV Vmax (m/s)	0.4
AoV Vmax (m/s)	0.8
MR Vmax (m/s)	4.0
TR Vmax (m/s)	2.2
TR PG (mmHg)	20

**INTERPRETATION OF THE FINDINGS**

Unfortunately, this patient has significant 4 chamber dilation and dysfunction, consistent with dilated cardiomyopathy. Moderate MR and TR are suspected to be secondary to dilation; however, the tricuspid valve does appear mildly dysplastic. The LA is severely enlarged, indicating risk for progression to congestive heart failure. No additional issues are identified in this study.



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Dilation and dysfunction can be primary in nature (primary DCM) or develop secondary to taurine deficiency, myocarditis, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. Given the diet history, there is also concern for correlation with a nontraditional diet in light of recent reports. A diet change is certainly recommended as has been done as this is potentially the only treatable cause of these findings. A taurine level may be helpful as well, although supplementing taurine regardless of systemic levels is recommended as below. Finally, further systemic evaluation for underlying infiltrative contribution such as neoplasia may also be reasonable (abdominal ultrasound, tick titers, etc.) although considered unlikely.

Given the reported chest radiograph findings and severity of disease, recommend continued treatment for CHF as below. This breed is also highly predisposed to airway disease and Hydrocodone should be used if needed for quality of life.

Prognosis is guarded at this stage with most dogs succumbing to CHF within 9-12 months. There may be risk for development of congestive heart failure, malignant arrhythmias (AF, VT), collapse and/or sudden death in the future.

**RECOMMENDATIONS**

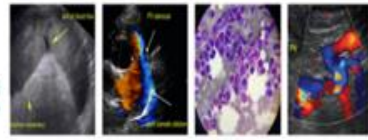
- Institute Pimobendan 0.3mg/kg PO q12h.
- Continue Lasix with a dose increase; administer 40mg PO q12h.
- Institute ACE-I 0.5mg/kg PO q12h.
- Institute Spironolactone 1-2mg/kg PO q12h (available in 25 and 50mg tablets).
- Administer taurine supplement 1000mg PO q12h.
- A diet change should be performed ASAP.
- Consider Hydrocodone with homatropine, 0.2 - 0.4 mg/kg PO up to q4-6 hours PRN for cough (available in 5/1.5mg tablets or 5mg/5ml solution).
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Elective anesthesia is not advised.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF going forward.

**PLAN**

- Monitor renal values in 1-2 weeks, then every 3-4 months lifelong.
- Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.



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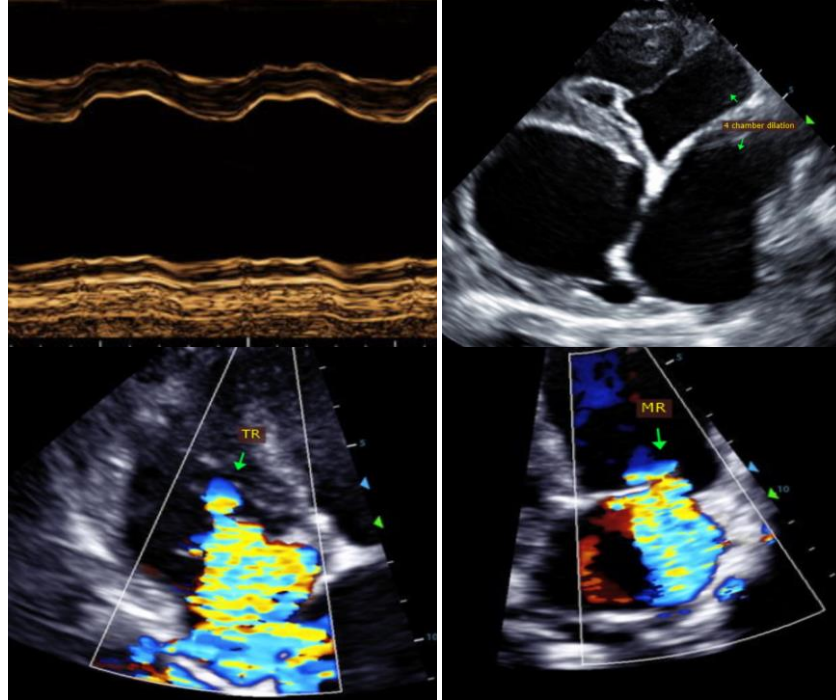
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**IMAGES**



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Lamy, DVM  
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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.

**IMAGING**

**PERFORMED BY**

Pamela Harrigan,  
RDCS

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)

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**HOSPITAL NAME**

Mass Veterinary  
Services

Echocardiogram performed by:

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

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