



**PATIENT**

Boo Delgado

**SPECIES**

Canine

**BREED**

Pomeranian

**SEX**

Male Neutered

**AGE**

11 years

**WEIGHT**

11lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

32445

**DATE**

8/21/23

**PRESENTING CLINICAL SIGNS**

History: Boo presented to rDVM in July for coughing a heart murmur was detected. Radiographs in March showed cardiomegaly, dorsal deviation of trachea, redundant tracheal membrane. He is presently doing well at home with a good appetite and normal activity level. No S/V/D but does have some PU/PD since starting Lasix. History of collapsing trachea so coughs a fair amount. On exam: NSR, grade IV/VI murmur with PMI left apical area radiating to right, PSS, lung fields clear, mm pink, moist, CRT<2. 1) Lasix/furosemide 12.5mg 1 tab twice a day 2) probiotics \*Sedated with propofol for study.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and Doppler imaging is available.  
**Left ventricle:** Significant LV dilation with increased sphericity and hyperdynamic myocardial function. LV wall thicknesses are normal.  
**Left atrium:** The left atrium is severely dilated.  
**Mitral valve:** Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation. Decreased velocity.  
**Aortic valve/Aorta:** The aortic valve is thickened with normal mobility. Mildly elevated aortic outflow velocity; laminar flow. No AI.  
**Right ventricle:** Mild RV dilation.  
**Right atrium:** Mild right atrial dilation.  
**Tricuspid valve:** The tricuspid valve appears mildly thickened with mild to moderate tricuspid regurgitation. Normal velocity.  
**Pulmonic valve/Pulmonary artery:** The pulmonic valve is normal with normal pulmonic outflow velocity. No pulmonic insufficiency.  
**Pericardium/other:** No pericardial or pleural effusion noted. No obvious cardiac masses.  
**Heart rhythm:** ECG reveals a sinus rhythm with an average HR of 140bpm.

**2-Dimensional Measurements**

Ao diam (cm)	1.2
LA diam (cm)	2.9
LA:Ao (Swe)	2.3
IVS thickness (cm)	0.5
LVID diastole (cm)	2.9
PW thickness (cm)	0.5
LVID systole (cm)	1.6
FS (%)	44

**Doppler Measurements**

PV Vmax (m/s)	0.5
AoV Vmax (m/s)	0.9
MR Vmax (m/s)	5.0
TR Vmax (m/s)	2.3
TR PG (mmHg)	22

**INTERPRETATION OF THE FINDINGS**

Chronic degenerative valve disease causing severe mitral and mild to moderate tricuspid regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. Significant TR is also noted, without significant pulmonary hypertension. No additional issues are identified.

Given a reported cough and severity of disease seen here, there is concern for early congestive heart failure. Even without out reported CHF on films, reasonable to continue Lasix in addition to full cardiac support as below. This is based upon a high risk for decompensation in a symptomatic patient. Hydrocodone can be used if needed for quality of life if a mechanical cough persists despite normal sleeping breathing rates. Close monitoring of breathing rates is recommended to determine a mechanical cough from recurrent pulmonary edema.



**PATIENT**

Boo Delgado

The average survival of canine patients once pulmonary edema is diagnosed is 8-9 months on medications; however, they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Monitoring of renal values is recommended lifelong.

**SPECIES**

Canine

**RECOMMENDATIONS**

- Institute Spironolactone, 1-2mg/kg PO q12h.
- Continue Furosemide to 1-2mg/kg PO q12h.
- Pending BP >130mmHg, institute Benazepril 0.5mg/kg PO q12h.
- Institute Pimobendan 0.3mg/kg PO q12h.
- If needed, institute Hydrocodone if needed, 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).
- Elective anesthesia is not advised.
- Monitor for development of a cough, collapse episodes, significant lethargy in the future. Monitoring of sleeping breathing rates is recommended best way to screen for CHF in the future.

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**PLAN**

- Monitor renal values and BP in 1-2 weeks and then every 3-4 months on medications.
- A recheck echocardiogram is recommended in 6 months to screen for progression, sooner if clinical signs arise in the interim.

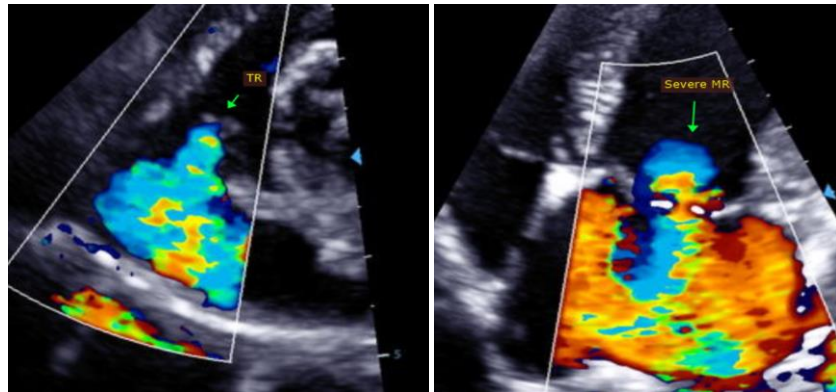
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**REFERRING VET**

Dr. Masloski

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**

32445

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**DATE**

8/21/23

**Echocardiogram performed by:**

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Pet Animal Ultrasound Service (4paus.com)