
**PATIENT**

Preston Lusk

**SPECIES**

Canine

**BREED**

Pug

**SEX**

MN

**AGE**

11 years

**WEIGHT**

10 kg

**PRESENTING CLINICAL SIGNS**

Coughing spirts They have been so bad O think sit is triggering a seizure or syncope P loses consciousness Takes about 30s to come out of this state Coughing has been an ongoig issues for months, meds did not work How long has this change been present? Once friday and once yesterday Abnormal PE/Chem/CBC/UA Results: rads: FINDINGS: The pulmonary parenchyma is considered within normal limits for patient age. No obvious soft tissue pulmonary masses or nodules are identified. No thoracic lymphadenopathy is noted. There is moderate generalized cardiomegaly, with a component of moderate left-sided enlargement. The cardiovascular structures are otherwise within normal limits for size and shape. The visible trachea has a normal diameter. In the cranial abdomen, the liver is mildly enlarged. There is multifocal spondylosis. There is also significant bilateral elbow osteoarthritis, with several metallic pins that appear at least partly associated with the bones of the right elbow. There is also significant unilateral shoulder osteoarthritis, most likely the left side, possibly accompanied by incongruity. IMPRESSIONS: Moderate generalized cardiomegaly with left-sided enlargement. These findings are most likely consistent with significant acquired disease such as valvular insufficiency, pulmonary hypertension, or a component of pericardial effusion. No obvious evidence of left-sided cardiac decompensation is currently identified. However, impingement of the left atrium upon the tracheal carina and mainstem bronchi is likely contributing to the respiratory clinical signs. Mild hepatomegaly.

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**
**INTERPRETED BY**

 R. McKenzie Daniel,  
 DVM, DABVP

**IMAGING  
 PERFORMED BY**

Kelly Reschney

**HOSPITAL NAME**

 Beattie PH Stoney  
 Creek

**REFERRING VET**

Dr. Mellish

**INVOICE**

13154

**DATE**

1/25/22

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	4.5	2.7		2.3	40.6	19.5	1.4
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m- mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	177	1.1	1.2		4.3	4.4	

**Cardiac Presentation**

Severe LV dilation with diminished systolic function was present. Increased EPSS and increased LV sphericity were noted. LV free wall thickness was decreased. Moderate to severe LA enlargement was present. The mitral valve appears to be mildly thickened with no overt evidence of prolapse into the



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left atrial lumen. Moderate eccentric mitral valve insufficiency was present with mild increased velocity. The tricuspid valve appears to be mildly thickened. Moderate RA and RV dilation were present. Mild to moderate tricuspid valve insufficiency with mildly elevated velocity was noted. The LV outflow tract is normal with normal outflow velocity and laminar flow. No overt AV Insufficiency was noted. Normal pulmonic valve with normal outflow velocity was noted. No evidence of PV insufficiency was evident. No overt evidence of pericardial or free pleural fluid was noted. No obvious cardiac tumors were present.

**ULTRASONOGRAPHIC FINDINGS**

**Primary Findings**

- DCM-like cardiomyopathy exhibiting significant LV systolic function
- Mild to moderately enlarged RA / RV
- Mitral and tricuspid valve insufficiency

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Unfortunately, this patient has significant cardiomyopathy and systolic dysfunction. This is causing dilation and volume overload of both the left and right heart, more prominent in the left heart, with biatrial dilation. MR and TR are identified with mild elevated pulmonary pressures based on measured TV velocity. This presentation may be primary in nature (DCM), or secondary to taurine deficiency, hypothyroidism, myocarditis, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma or other.

Diet history should be obtained for assessment of potential grain-free / boutique / exotic diet. Thyroid status is recommended. Additional assessment may include troponin levels. However, the prognosis at this stage is very guarded.

Without evidence of radiographic pulmonary edema, the coughing in this patient may be multifactorial in origin owing somewhat to mildly elevated pulmonary pressures and mainstem bronchi irritation/compression owing to LA enlargement.

Pimobendan 0.3 mg/kg PO BID, Lasix / Spironolactone combination 1.0-2.0 mg/kg PO BID are recommended. Monitoring of renal parameters, ECG, and blood pressure is advised. If BP (>130), ACE inhibitor medication 0.5 mg/kg PO BID may be considered (not recommended if BP (<130). Monitoring of resting respiration rate is recommended. Going forward, this patient is at significantly elevated risk for CHF, malignant arrhythmias, and potential sudden death. Recheck echocardiogram is suggested in 3-4 months, sooner if clinical signs arise.



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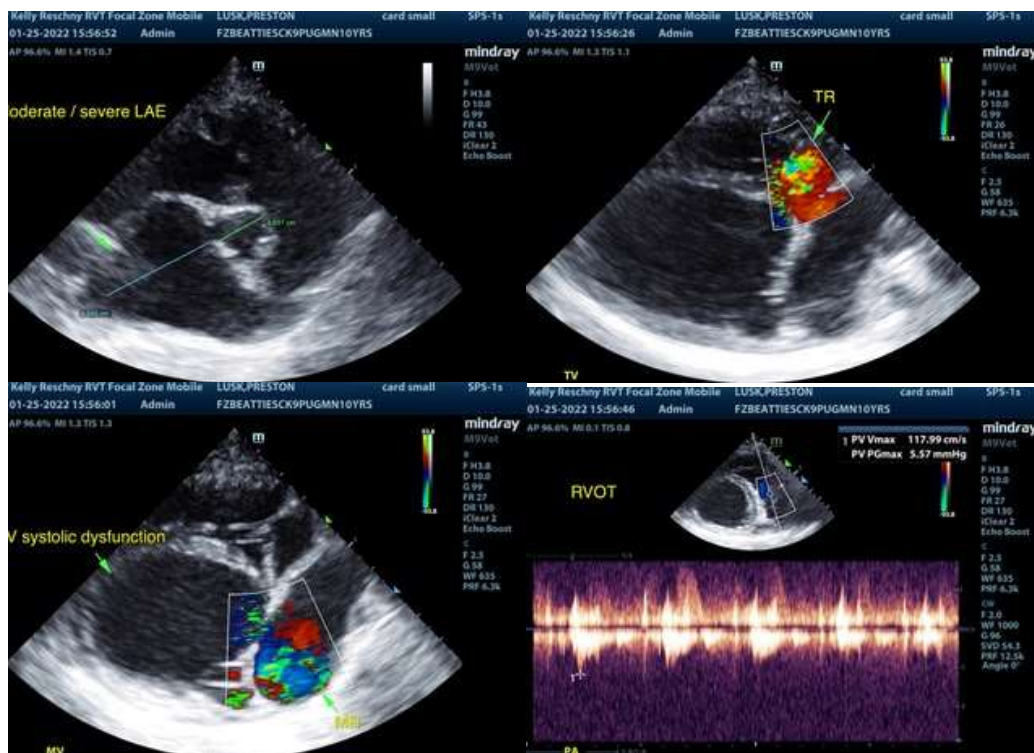
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
info@SonoPath.com