



**PATIENT PRESENTING CLINICAL SIGNS**

Maynerd Billman

History: Presented 1/14 for evaluation for coughing. Was treated at another veterinary office (no records available) and was started on furosemide, Enalapril, Pimobendan. No diagnostics were performed. On 1/14, no heart murmur was audible. Recommended thoracic radiographs and echo to evaluate need for ongoing medication. Other diagnostics available (ie. Blood pressure, radiographs, etc): Radiographs being submitted for evaluation. Primary reason for ultrasound referral: Determine if needs to continue cardiac medications or not.

**SPECIES**

Canine

**BREED**

Pomeranian

Abnormal PE/Chem/CBC/UA Results: Abnormal laboratory findings: 1/14/21 CBC unremarkable, Chem - Cl 104 (108-119), Lip 485, CK 297 (non-fasted lab work), USG 1.007, pH 8, WBC 2/hpf, moderate rods 9/40/hpf 2/2/22 Recheck UA USG 1.026, pH 5, quiet sediment Abnormal physical exam findings: BCS 8/9, periodontal disease grade 2/4, no murmur audible, coughing has diminished per owner.

**SEX**

Male

**AGE**

12 years

**WEIGHT**

5.65 kg

**INTERPRETED BY**

Eric Lindquist, DMV DABVP, Cert. IVUSS

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

The echocardiogram presented a prominent **right heart** with mild **right ventricular** hypertrophy, with trivial **tricuspid** insufficiency, and normal **right atrial** size. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** was uniformly prominent with mildly depressed pulmonic velocity measured on PW Doppler. No overt heartworms were noted in the main or visible deep pulmonary arteries. Yet, theoretically heartworms could be present in the deep pulmonary vasculature out of visible sonographic range. More likely, however, this prominent right heart is due to excessive intra-thoracic pressures caused by chronic respiratory disease or potentially excessive intra-thoracic fat (Pickiwickian syndrome). The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** was not significantly insufficient and no significant **left atrial** dilation was noted. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. The visible **extra-cardiac** tissues were uniformly linear without evidence of masses, infiltrative or inflammatory mediastinal tissue. No evident arrhythmic activity was noted during the exam. The hepatic veins are not dilated.

**IMAGING PERFORMED BY**

Dr. Stegemoller

**HOSPITAL NAME**

North Idaho AH

**REFERRING VET**

Dr. Stegemoller

**INVOICE**

95788

**DATE**

2/1/22

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT		1.1	1.1	1.3	50		0.1
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)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT		1.8	0.9	5.65	2.5 max	2.5	



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**ULTRASONOGRAPHIC FINDINGS**

Minor right-sided enlargement.

**SPECIES**

Canine

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The cough is non-cardiogenic in this patient. No cardiac medications are recommended. Treatment for primary respiratory cough is indicated.

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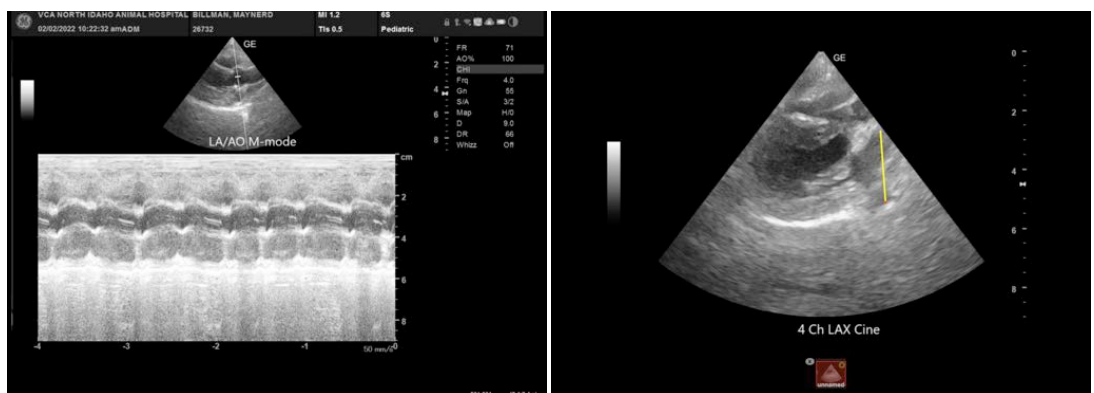
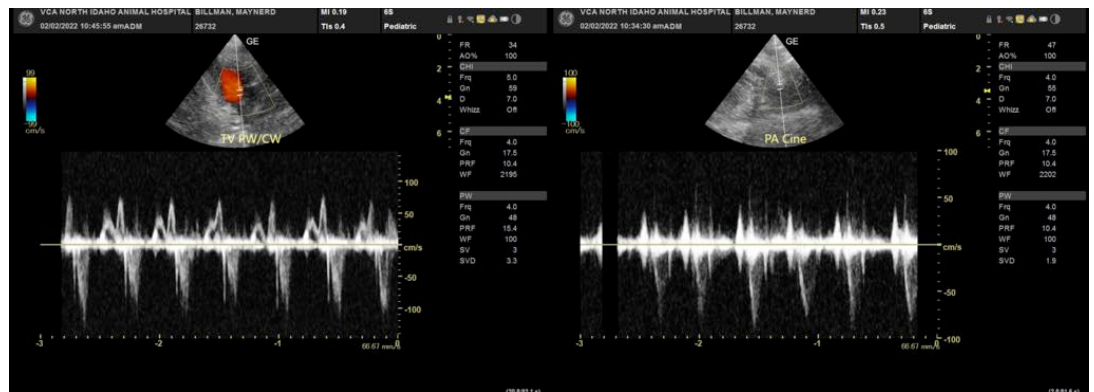
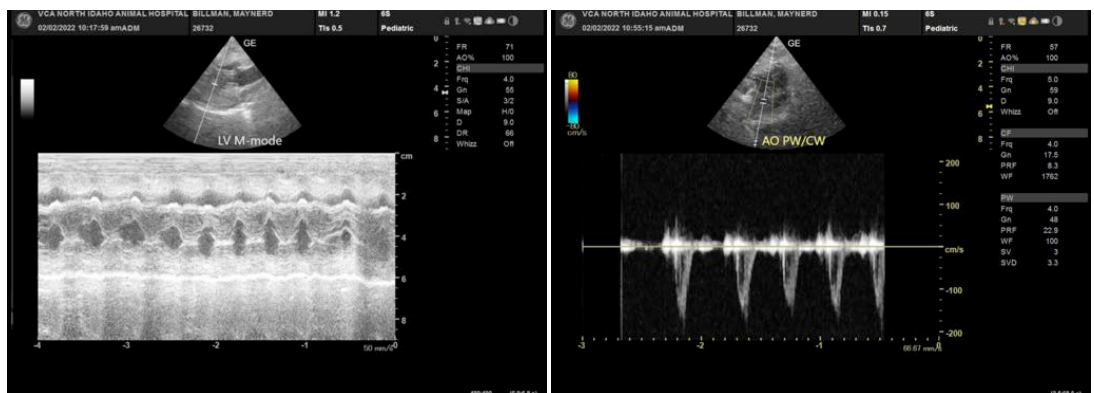
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**SPECIES**

Canine

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.

**BREED**

Pomeranian

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com

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