IMAGING PERFORMED BY
SVS Mobile Imaging 262-366-5970
fredgromalak@gmail.com

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Poppy Linsley (46228A)

SPECIES

Canine

BREED

Pomeranian

SEX

FS

AGE

15 years

WEIGHT

4.97 kg

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY

Dr. Gromalak

HOSPITAL NAME

SVS Imaging

REFERRING VET

Dr. Mueller

INVOICE

13034

DATE

1/12/22

PRESENTING CLINICAL SIGNS

hx of syncope. presented for respiratory distress. no murmur. lungs auscultate bilateral crackles. rule out cardiac verse respiratory disease.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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		4.0	--	1.2	47.6	82.6	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	BELOW	BELOW	BELOW	BELOW
PATIENT	137	1.0	0.9		2.0	1.6	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed mild increased size with normal structure and without evidence of associated masses. **Tricuspid** valvular assessment demonstrated subjective mild thickening with moderate insufficiency present on color doppler assessment. The **right ventricle** revealed concurrent mild increased size compared to the left ventricle with normal myocardial echogenicity and potential for mild increased free wall thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window. No evidence of arrhythmogenic disease.

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ULTRASONOGRAPHIC FINDINGS

Primary Findings

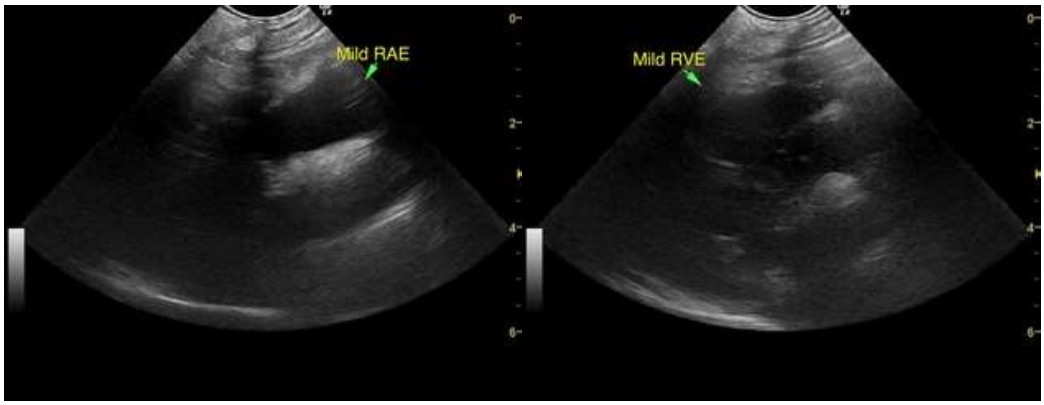
- Moderate pulmonary hypertension
- Mild RA / RV enlargement

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The estimated pulmonary pressure gradient based on tricuspid valve insufficiency is consistent with moderate pulmonary hypertension. Mild RA / RV changes associated with Increased pulmonary pressure were present yet not overtly consistent with congestive right heart failure. Without evidence of concurrent left heart disease, the underlying etiology for pulmonary hypertension is often unclear. Primary lower airway disease in this case, parasitic disease i.e., heartworm disease, thromboembolic disease, or other are possible. Therefore, potential for multifactorial origin of the patient's respiratory distress potentially owing to lower airway disease is possible.

Hospitalization with as-needed oxygen therapy and supportive care until the patient is stabilized is recommended. Sildenafil 1.0 mg/kg PO BID titrating at the target dose of 1.0-3.0 mg/kg PO BID is warranted. Regardless, this patient is at continued risk going forward for recurrent syncopal episodes or potential sudden death. Exercise restriction is advised.

2020 ACVIM consensus statement did not advocate for or against the use of Pimobendan as an adjunctive treatment for dogs with pulmonary hypertension. Recheck echocardiogram is suggested pending clinical response to therapy may be considered in 4-6 weeks, potentially sooner if continued respiratory distress, signs of syncope, or evidence of right heart failure are noted.



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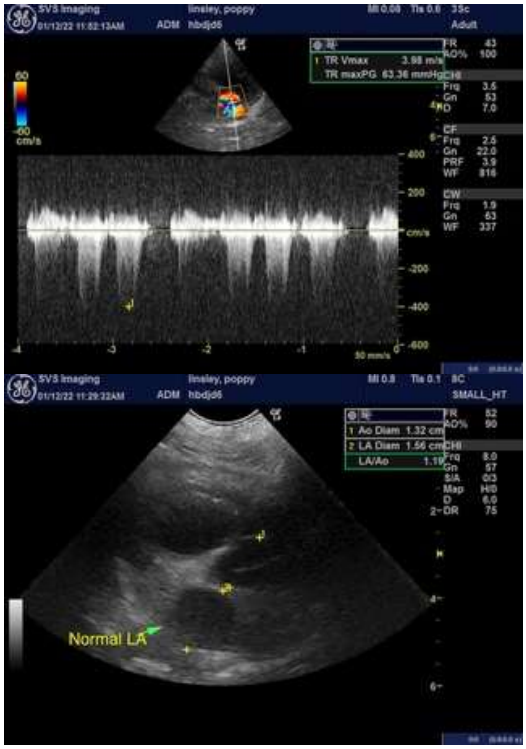

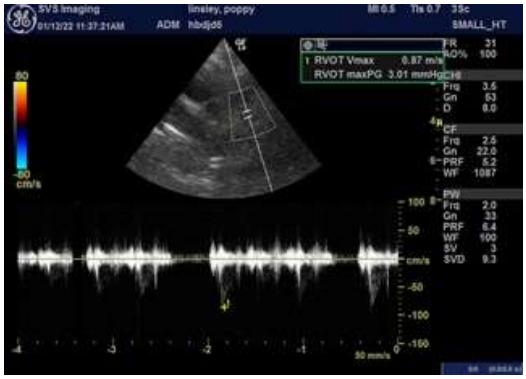

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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