



PATIENT PRESENTING CLINICAL SIGNS

Ryker Rescue History: Heartworm +, finished treatment 1 month ago, grade 3/6 heart murmur, exercise intolerance per foster parent Doxycycline, Vetmedin .625 BID, Lasix 2.5 BID

SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE HEART

Canine

BREED

Yorkie Mix

SEX

Neutered Male

AGE

2018

WEIGHT

5 Pounds

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	--	2.0	NM	1.22	64.1	97.1	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	116	1.5	4.5	--	1.4	1.67	--

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 containing anechoic content. No evidence of masses noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. Potential for trace TV insufficiency on doppler, although not definitive. No clinical evidence of pulmonary hypertension. The **right ventricle** exhibited increased size compared to the LV with normal myocardial echogenicity yet increased free wall thickness. Mild prominent right ventricular papillary muscles noted. **Pulmonary outflow** revealed subjective abnormal valve structure, turbulent to dynamic systolic flow with potential for minor increased pulmonary artery diameter compared to the aorta. Subjective mild to moderate pulmonary valve insufficiency also present, measuring 1.4 cm in diastolic velocity. Suspect remnant heartworms in the deep pulmonary artery, exhibited by sonographic (=). 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.

INTERPRETED BY

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

IMAGING PERFORMED BY

Rebekah Jakum, CVT ARDMS/RVT

HOSPITAL NAME

New Britain VC

REFERRING VET

Dr. Bandekar

INVOICE

14598

DATE

4/4/22

ULTRASONOGRAPHIC FINDINGS



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- Mild RA/RV enlargement with mild subjective right ventricle concentric hypertrophy
- Elevated RV outflow tract velocity with concurrent turbulent to dynamic flow pattern and concurrent pulmonic valve insufficiency- consistent with moderate to severe pulmonic stenosis (estimated pulmonary pressure gradient approximately 80 mm Hg)

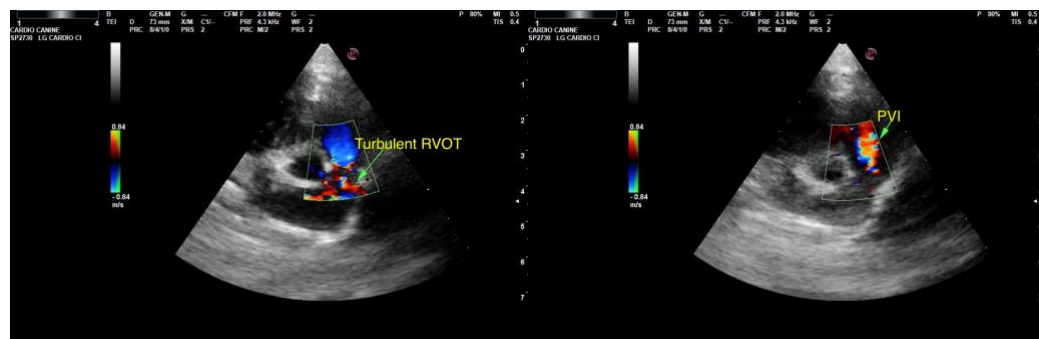
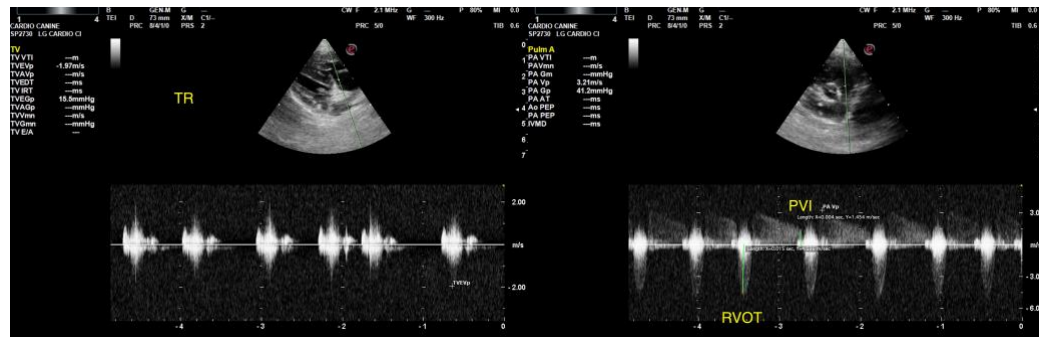
- Normal LA/LV

- Suspect remnant heartworm in deep pulmonary artery

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is most consistent with moderate to severe pulmonic stenosis. The hemodynamic effects of the pulmonic stenosis appear to at least be moderate, given the estimated pressure gradient and evidence of RV hypertrophy. Potentially, some degree of elevated pulmonary pressure may be owing to heart worm disease, although overt evidence of clinical pulmonary hypertension was not definitively evident based on measured tricuspid valve insufficiency velocity.

Without evidence of right heart decompensation, no overt indication for current Vetmedin and Lasix therapy. Atenolol at 1 mg/kg PO BID may potentially be considered. However, ideally referral to a cardiologist for further assessment and prognosis is strongly recommended. Recheck echocardiogram is suggested in 3-4 months if cardiology referral is not possible.





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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.

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