



## PATIENT

Riley Nason

## SPECIES

Canine

## BREED

Maltese Mix

## SEX

MN

## AGE

9 years

## WEIGHT

20 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Dr. Ebersole

## PRESENTING CLINICAL SIGNS

Dry hacking cough intermittently. Not induced by exercise. Owner reports it sounds like she is choking. Started on Pimobendan recently, and owner reports decrease in coughing.

Abnormal PE/Chem/CBC/UA Results: PE: Grade 4/6 systolic heart murmur on Left. No cough on palpation of trachea, but can elicit cough by squeezing on chests. Deep cough. RADS (attached): VHS 11.5

## 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	5.5	2.0	NM	1.46	36.6	68.5	0.19
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	NM	1.6	0.9	--	3.7	2.7	--

## Cardiac Presentation

The echocardiogram for this patient presented minor **left atrial** enlargement based on 3 different LA measurement methods. Chamber volumes were essentially normal with normal echogenicity. The cranial and caudal **mitral** valve leaflets presented mild vegetative thickening consistent with mild endocardiosis. Doppler indicated measurable moderate eccentric insufficiency.

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. Normal LVOT velocity noted. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated mild thickening with mild TR on doppler. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio).Normal RVOT velocity noted. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.

## HOSPITAL NAME

Scanvet

## REFERRING VET

Dr. Neat

## INVOICE

## DATE

10/6/22



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## ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B-1- possible very early B-2)
- Mild TR- estimated pulmonary pressure gradient <20 mmHg based on measured TR velocity not consistent with overt clinical pulmonary hypertension.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of significant left atrium enlargement indicates that the hemodynamic effects of the mitral valve insufficiency are relatively low and thus risk of current and future complication secondary to mitral valve insufficiency is likely low. No other clinical issues, such as LV systolic dysfunction or evidence of clinical pulmonary hypertension. Overall, the cardiac presentation was not overtly consistent with a cardiogenic cough. Even though positive response was noted after initiation of Pimobendan, primary upper or lower airway disease is considered probable. Continued Pimobendan would not be unwarranted as this medication may help prolong cardiac changes associated with mitral valve insufficiency. Prognosis at this stage is highly variable and serial sonographic monitoring is recommended. As needed concurrent respiratory support would be appropriate. Recheck echocardiogram is recommended in 6 months or sooner if progressive clinical signs are noted.

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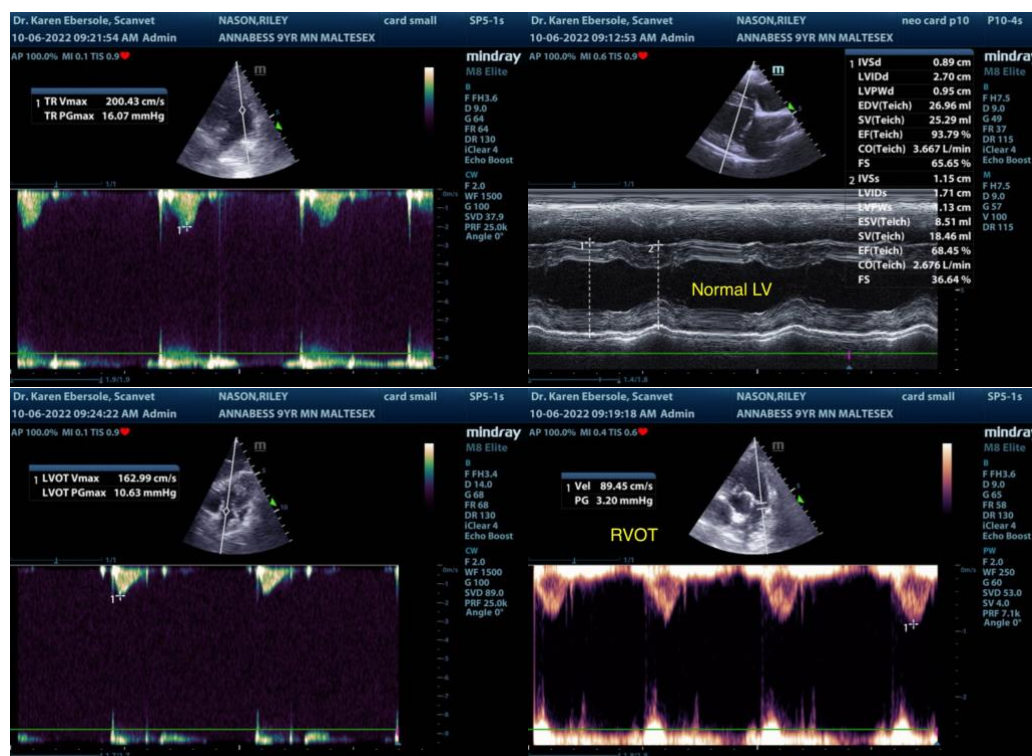
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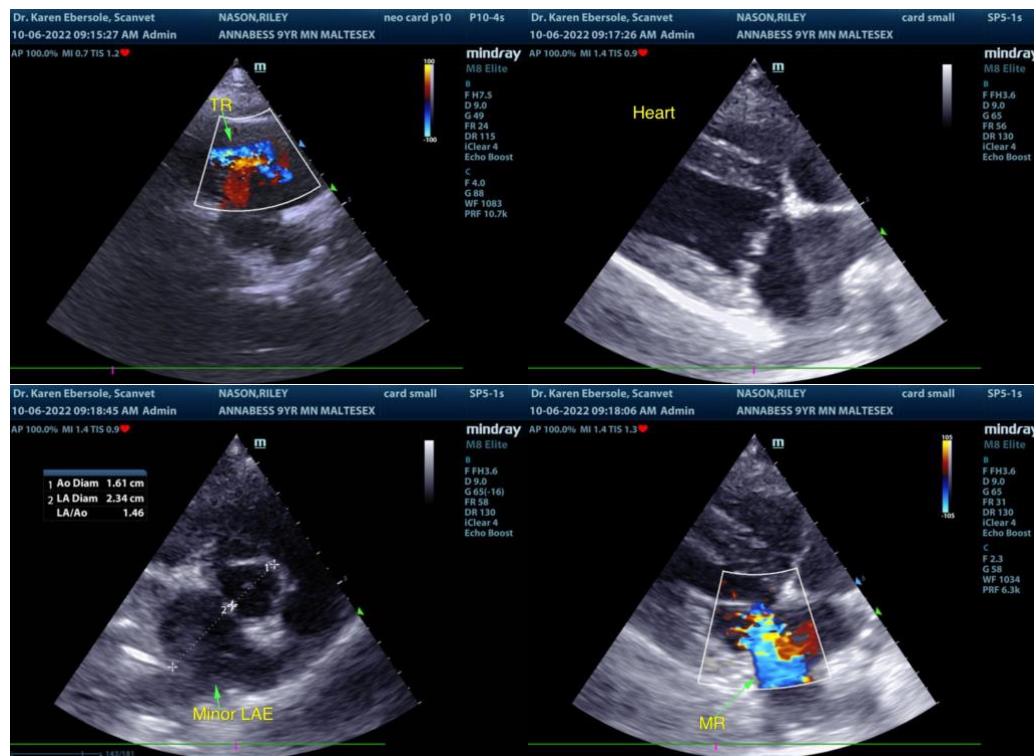
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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