**PATIENT**

Heath Everson

SPECIES

Canine

BREED

Jack Russell Terrier

SEX

Neutered Male

AGE

12 Years

WEIGHT

20 Pounds

PRESENTING CLINICAL SIGNS

Mildly progressive chronic mitral valve disease. Coughing more recently when waking. Walks consist of 20 steps. Can not tolerate longer walks. 3-4/6 heart murmur was noted 2 years ago. Shedding more and shaking worse. No change in appetite or U/D.

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	2.1	1.41	1.53	55.9	90.5	0.26
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	157	1.5	1.4		4.0	3.4	

INTERPRETED BYR. McKenzie Daniel,
DVM, DABVP
(Canine and Feline)**IMAGING PERFORMED BY**

Kim Liedberg

HOSPITAL NAME

SVS Imaging

REFERRING VETDr. Miller, Creature
Comfort**INVOICE**

38442

DATE

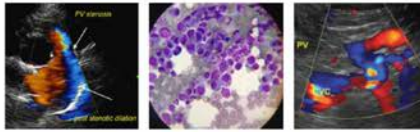
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Cardiac Presentation

The echocardiogram in this patient demonstrated static improved yet mildly increased **left atrial** size based on 3 different LA measurement methods. Subtle deviation of the intraatrial septum towards the right atrium, which may indicate minor increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. The **left ventricle** presented normal thicknesses with linear contour with subtle to minor increased left ventricular volume. 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 normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. Minor TV insufficiency present 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). 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.

ULTRASONOGRAPHIC FINDINGS

- Static chronic mitral valve disease (ACVIM mild B2)
- Mild TR – estimated pulmonary pressure gradient <20 mmHg, not consistent with overt clinical pulmonary hypertension.



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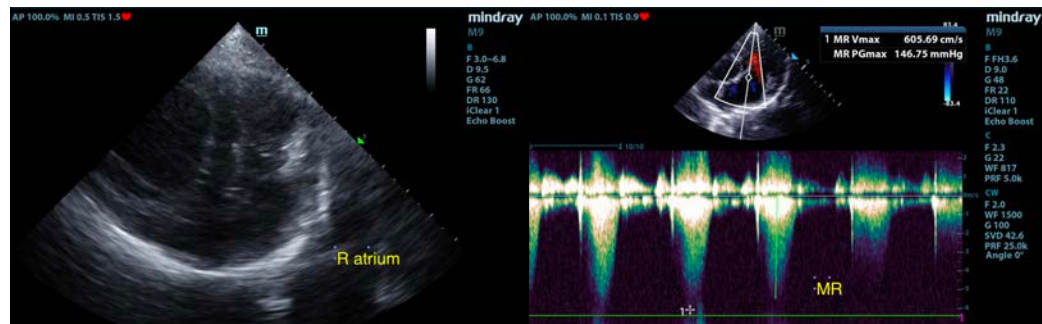
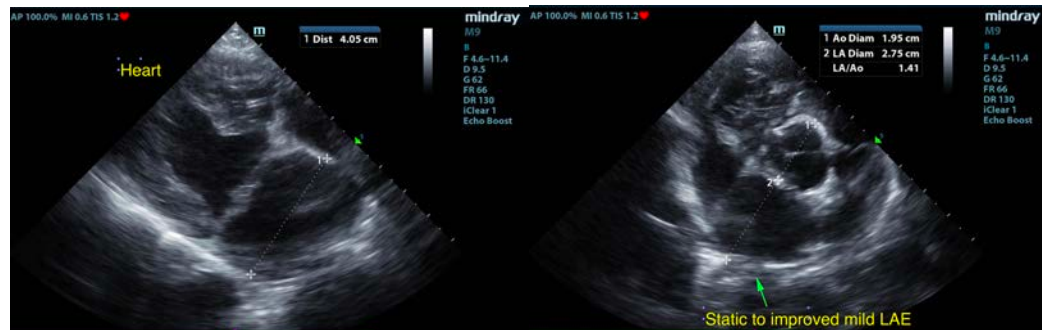
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

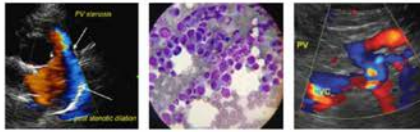
Overall, the cardiac presentation is similar to the previous echocardiogram with mildly improved measured LA/AO heart base ratio. Some degree of measurement variability is suspected, yet overall, the heart appears to be compensated. The lack of significant or progressive left atrial enlargement as well as additional clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension may suggest that the coughing specifically when walking or during exercise may be non-cardiogenic in origin.

If not done, 3-view chest radiographs to assess for evidence of primary pulmonary changes or disease suggested. Continued Pimobendan 0.3 mg/kg PO BID warranted, given the potential for exercise intolerance, as well as that Pimobendan may help prolong cardiac changes associated with mitral valve insufficiency. No overt evidence of arrhythmia, yet ECG assessment could be considered, especially if persistent/progressive exercise intolerance is noted. Sonographic monitoring recommended for further prognosis. Recheck echocardiogram suggested in 6 months, sooner if clinical signs consistent with left-sided heart disease or congestion arise.



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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.

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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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