



## PATIENT

Maddy Zayas

## SPECIES

Canine

## BREED

Pomeranian

## SEX

Spayed Female

## AGE

13

## WEIGHT

3.2 kg

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Dr. Belan

## HOSPITAL NAME

Beddington Trail AH

## REFERRING VET

Dr. Bahadur

## INVOICE

12984

## DATE

1/6/22

## PRESENTING CLINICAL SIGNS

4/6 murmur dyspneic with increase RRR. Enlarged heart on chest x rays on pimobendane since Tues

## 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	5.2	<2.0	--	1.44	48.3	82.4	0.15
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	101	1.4	0.83		2.3	1.9	

## Cardiac Presentation

The echocardiogram in this patient demonstrated minor enlarged **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated eccentric measurable 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. 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. 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

### Primary Findings

- Chronic mitral valve disease (ACVIM B1)



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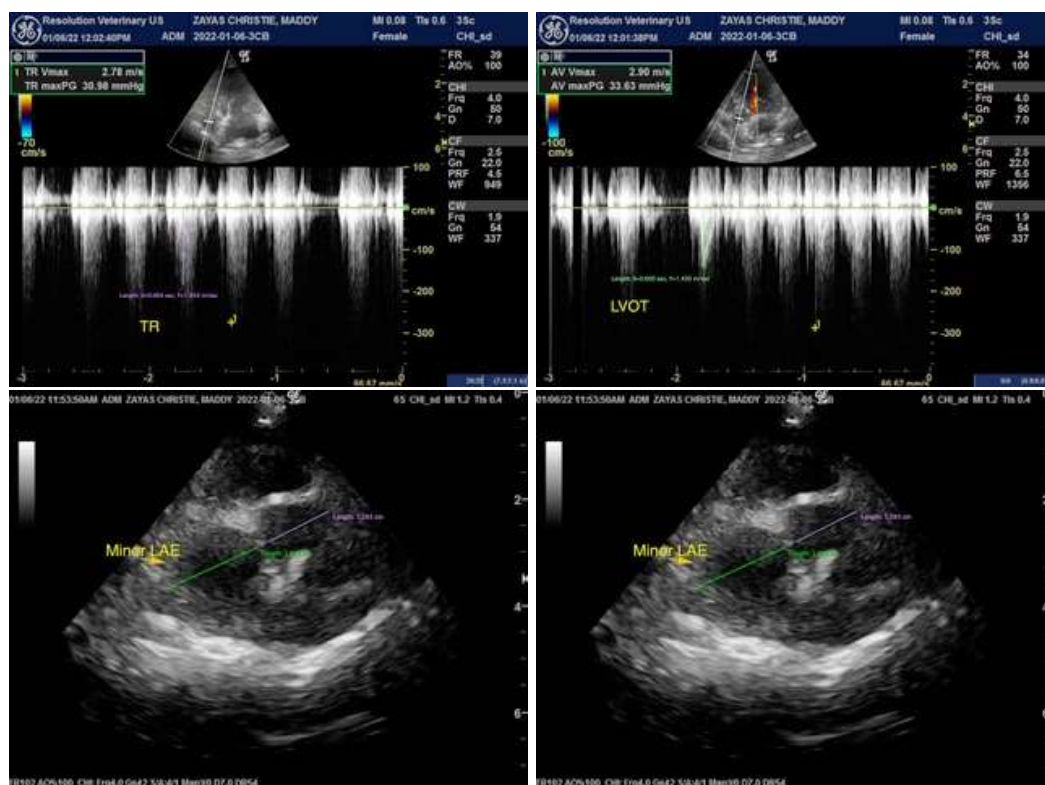
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. No other clinical issues such as systolic dysfunction or overt evidence of clinical pulmonary hypertension based on tricuspid valve insufficiency velocity were noted.

The minor left atrium enlargement indicates that the risk of current and future complication is relatively low and was not overtly suggestive of left atrium enlargement which would result in cardiogenic pulmonary edema.

Likewise, without evidence of clinical pulmonary hypertension, the respiratory abnormalities in this patient are suspected to be noncardiogenic in origin. Consider potential for primary upper or lower airway disease.

Without evidence of significant left heart changes or chamber enlargement, cardiac medications are not specifically indicated, yet Pimobendan potentially may prolong cardiac changes associated with mitral valve insufficiency. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs suggestive of left-sided heart disease initiate.





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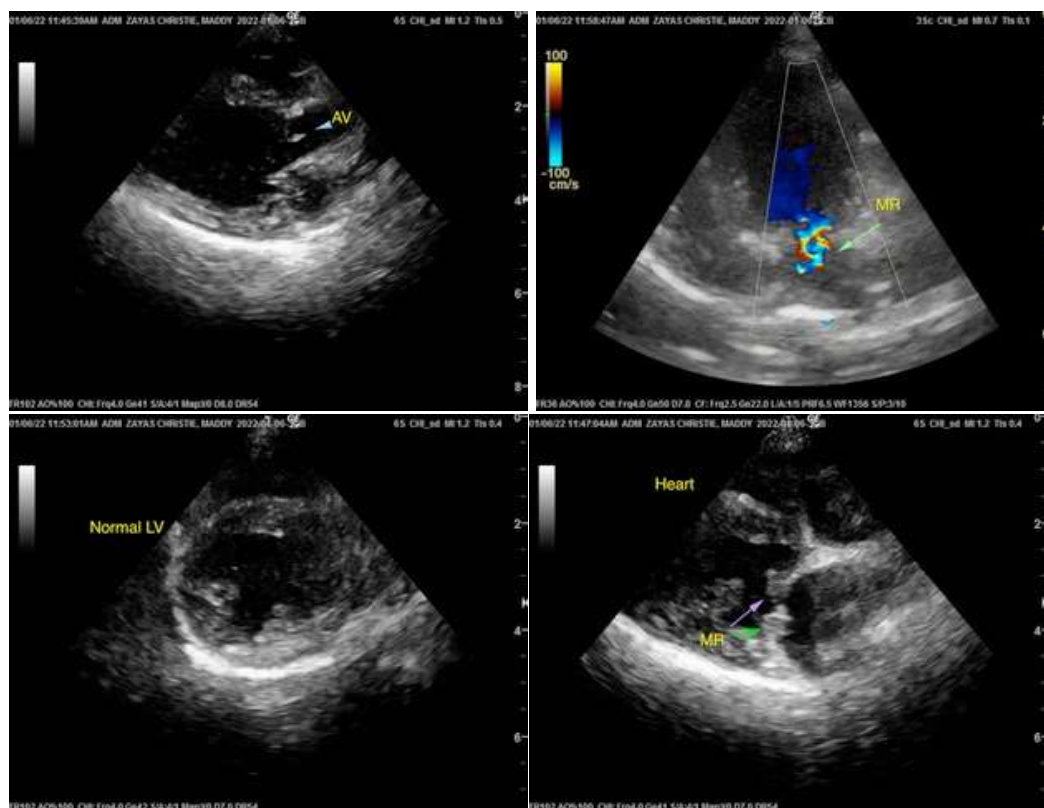
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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