



## PATIENT

Bailey Zendzian

## SPECIES

Canine

## BREED

Chihuahua

## SEX

FS

## AGE

11 years

## WEIGHT

9.3 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Diane McFadden

## HOSPITAL NAME

Newton VH

## REFERRING VET

Dr. Kim

## INVOICE

16544

## DATE

4/7/23

## PRESENTING CLINICAL SIGNS

-murmur; trouble breathing; coughing

## 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	<1.3	28-40	40-100	<0.6
PATIENT	5.2	2.4		2.0	52	84	0.3
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	181	1.0	0.9		3.6	3.5	

## Cardiac Presentation

The echocardiogram in this patient demonstrated moderately enlarged **left atrial** size based on 2 different LA measurement methods. Deviation of the interatrial septum towards the right atrium, suggestive of increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented mild to moderate thickening (anterior > posterior) consistent with endocardiosis. Minor valvular prolapse was noted. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented normal thicknesses with maintained linear myocardial contour with moderate increased left ventricle 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. Normal measured LVOT velocity was present. 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 measured RVOT Velocity was 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. No arrhythmia was noted.



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**ULTRASONOGRAPHIC FINDINGS**

- Chronic mitral valve disease with evidence of left heart volume overload (ACVIM B2-C)
- Mild TR - no evidence of clinical pulmonary hypertension

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The degree of left heart volume overload suggests that the trouble breathing specifically may be cardiogenic secondary to congestive pulmonary edema. A multifactorial component to the cough possibly secondary to concurrent lower airway disease or mainstem bronchi irritation / compression secondary to left atrium enlargement is possible.

Pimobendan 0.3 mg/kg PO BID, along with diuretic Lasix 1.0-2.0 mg/kg PO BID, as well as Hydrocodone at the appropriate dose is suggested. Monitoring of resting respiration rate going forward is advised. Clinical reassessment following initiation of cardiac medical therapy with the possibility of concurrent respiratory support is recommended. The prognosis remains highly variable. Recheck echocardiogram is suggested in 4-6 months, sooner if continued episodes of possible CHF.

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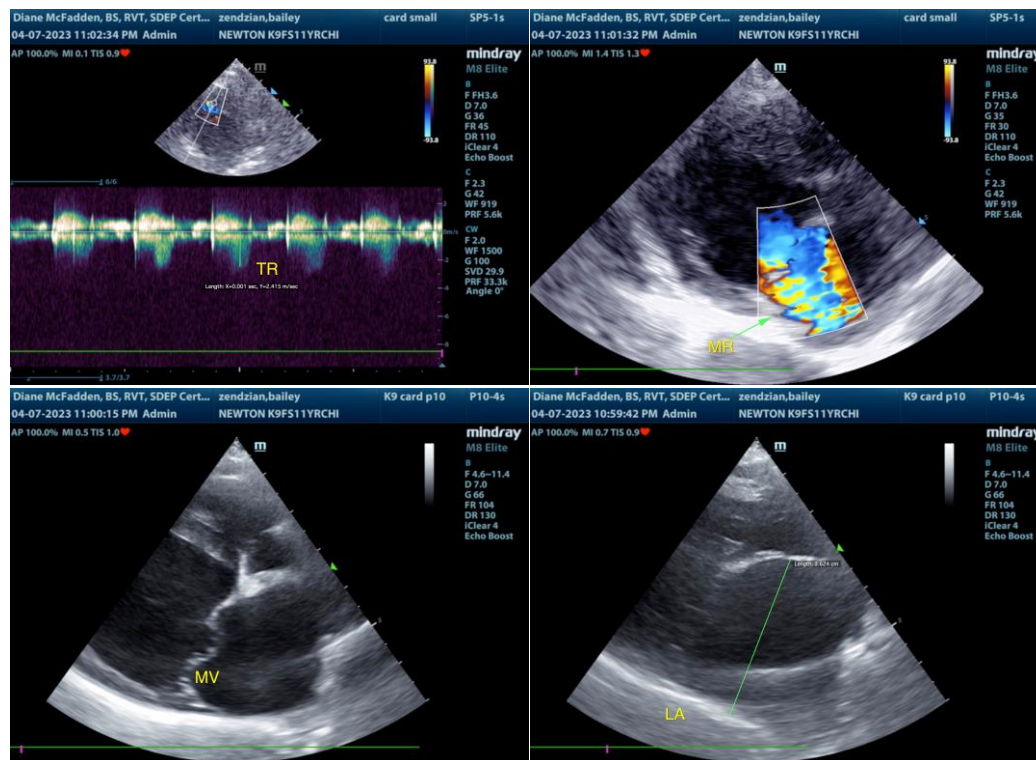
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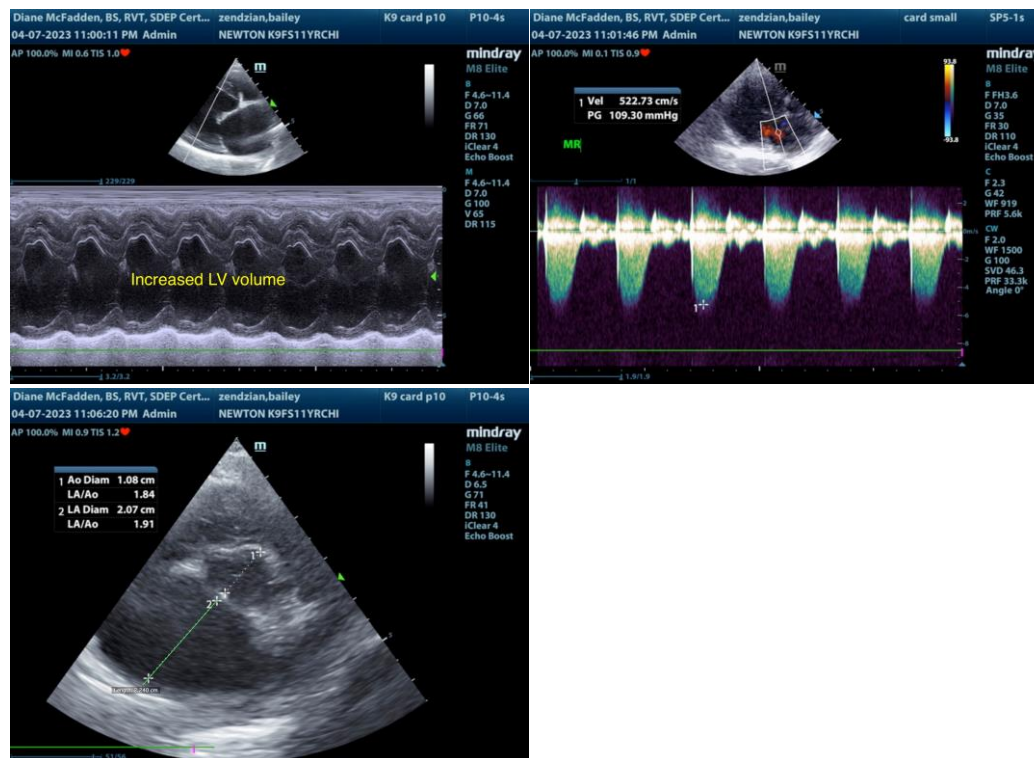
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

info@SonoPath.com