



## PATIENT

Duncan Ripps

## SPECIES

Canine

## BREED

Chihuahua

## SEX

MN

## AGE

14 years

## WEIGHT

14.1 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Diane McFadden

## HOSPITAL NAME

Lake Hopatcong AH

## REFERRING VET

Dr. Batta

## INVOICE

15082

## DATE

10/5/22

## PRESENTING CLINICAL SIGNS

labored breathing, coughing. Has been on a couple of courses of lasix, owner reports no improvement. On clavamox 125mg

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE	MR	TR	LA/AO	LA/AO	FS	EF	EPSS
<b>CARDIAC PARAMETERS</b>	<b>VMAX</b> (m/s)	<b>VMAX</b> (m/s)	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
<b>PATIENT</b>	5.0	3.1	1.1	1.21	37.2	70	0.21
CANINE	HR	AV	PV	BODY WEIGHT	LA	LVIDd	LVIDs
<b>CARDIAC PARAMETERS</b>	(BPM)	<b>VMAX</b> (m/s)	<b>MAX</b> (m/s)	(kg)	2D short axis Base view (cm)	Avg; 2D and m-mode short axis (cm)	Avg; 2D and m-mode short axis (cm)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6				
<b>PATIENT</b>	150	1.9	0.65		2.2	2.2	

### Cardiac Presentation

The **echocardiogram** presented a mildly prominent **right heart** with potential subtle **right ventricular** hypertrophy. Mild to moderate TR was present on Doppler and mild increased right atrial size. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** exhibited uniform size with systolic laminar outflow and without overt evidence of pulmonary insufficiency on Doppler. No overt heartworms were noted in the main or visible deep pulmonary arteries. Yet, theoretically heartworms could be present in the deep pulmonary vasculature out of visible sonographic range. More likely, however, this prominent right heart is due to excessive intra-thoracic pressures caused by chronic respiratory disease or potentially excessive intra-thoracic fat (Pickwickian syndrome). The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** exhibited mild thickening, consistent with mild endocardiosis with mild eccentric insufficiency present on Doppler. No evidence of **left atrial** dilation was noted. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. Normal LVOT velocity with mild aortic insufficiency was present on Doppler. No evidence of tumor, pericardial or pleural effusion was noted. The visible **extra-cardiac** tissues were uniformly linear without evidence of masses, infiltrative or inflammatory mediastinal tissue. No evident arrhythmic activity was noted during the exam.



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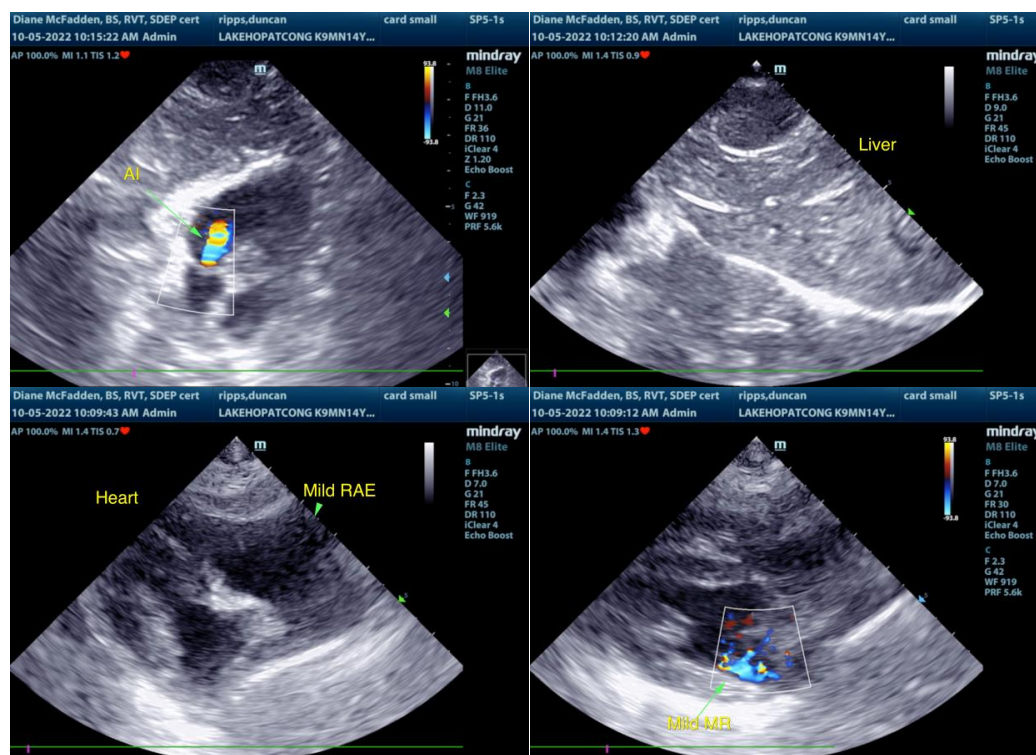
## ULTRASONOGRAPHIC FINDINGS

- Compensated chronic mitral valve disease (ACVIM B1)
- TR - estimated pulmonary pressure gradient ~38 mm HG, (consistent with mild pulmonary hypertension)
- Mildly enlarged right atrium - suggestive of cor pulmonale
- Aortic insufficiency

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of left atrium enlargement in conjunction with mitral valve insufficiency indicates that the risk secondary to mitral valve insufficiency is relatively low. No evidence of left-sided heart congestion as a potential cause of cardiogenic pulmonary edema. Primary chronic lower airway disease with secondary mild pulmonary hypertension may be a primary consideration in this patient.

A Sildenafil trial 0.5-1.0 mg/kg PO BID initially with as-needed respiratory support and assessment of clinical response is warranted with a potential target dose of 1.0-3.0 mg/kg PO BID of Sildenafil if clinically indicated. Exercise restriction is advised. No evidence of hepatic congestion or cranial abdominal ascites on brief cranial abdominal sonographic assessment. Recheck echocardiogram is recommended in 4-6 weeks pending clinical response to recommended therapy, sooner if progressive evidence of coughing or pulmonary hypertension is noted. If not done, three-view chest radiographs are suggested to assess for or rule out concurrent primary pulmonary or tracheal disease as a contributing factor to the cough.





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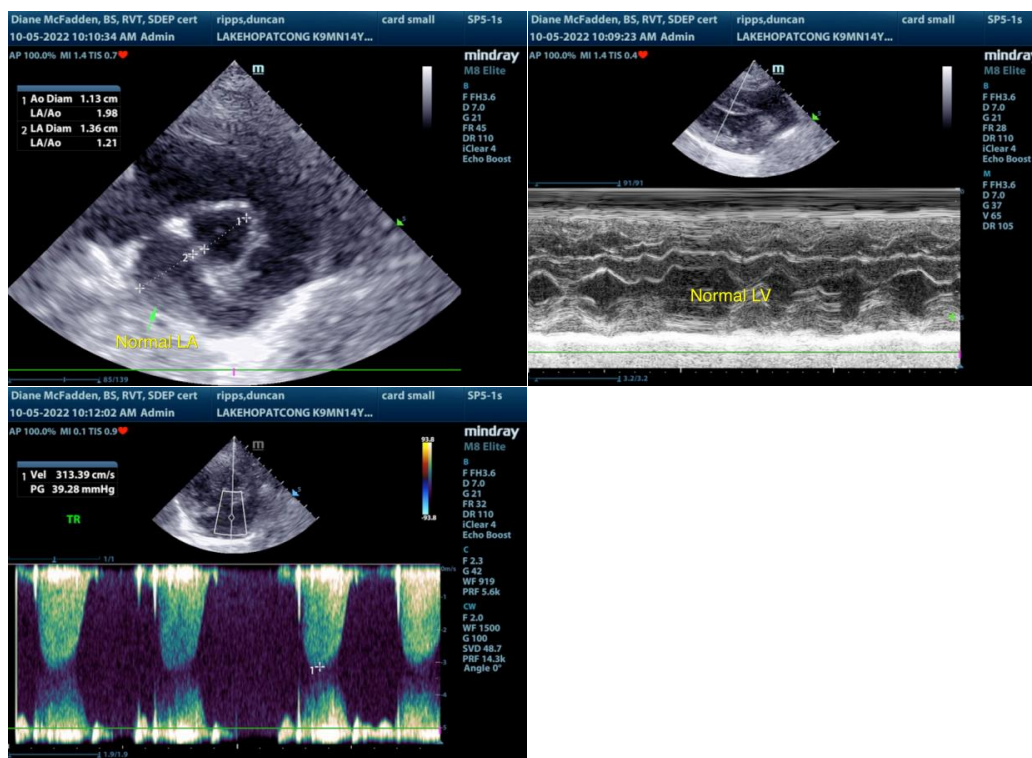
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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