



PATIENT

Jericho Chavez

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

M/N

AGE

14 years

WEIGHT

7.1 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

N/A

INVOICE

14630

DATE

8/17/22

PRESENTING CLINICAL SIGNS

respiratory distress, moist cough, pulmonary edema. hydrocodone 0.2ml prn, CBD 0.1prn. lasix injection given.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE	MR	TR	LA/AO	LA/AO	FS	EF	EPSS
CARDIAC PARAMETERS	VMAX (m/s)	VMAX (m/s)	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT		3.6	1.0	1.1	45	80	0.1
CANINE	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)
CARDIAC PARAMETERS							
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	96				1.5	1.4	

Cardiac Presentation

The **echocardiogram** presented a mildly enlarged **right atrium** and right **ventricular** with mild right ventricular hypertrophy. Mild TR was present on doppler. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** exhibited uniform mild enlargement compared to the aorta. 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 and pulmonary hypertension, potentially secondary to chronic respiratory disease. The **left heart** demonstrated linear **ventricular septum** with normal to possibly mild subnormal left ventricle volume. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** was not significantly insufficient and no significant **left atrial** dilation was noted. The **left ventricular outflow** demonstrated subjective normal laminar flow patterns through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. Strong transdiaphragmatic and peripheral pulmonary comet tail artifact was present. This finding may be seen with primary alveolar / lung disease such as neoplasia, thromboembolic disease, pneumonitis, chronic inflammatory disease, with micro consolidation or other. No overt evident arrhythmic activity was noted during the exam.



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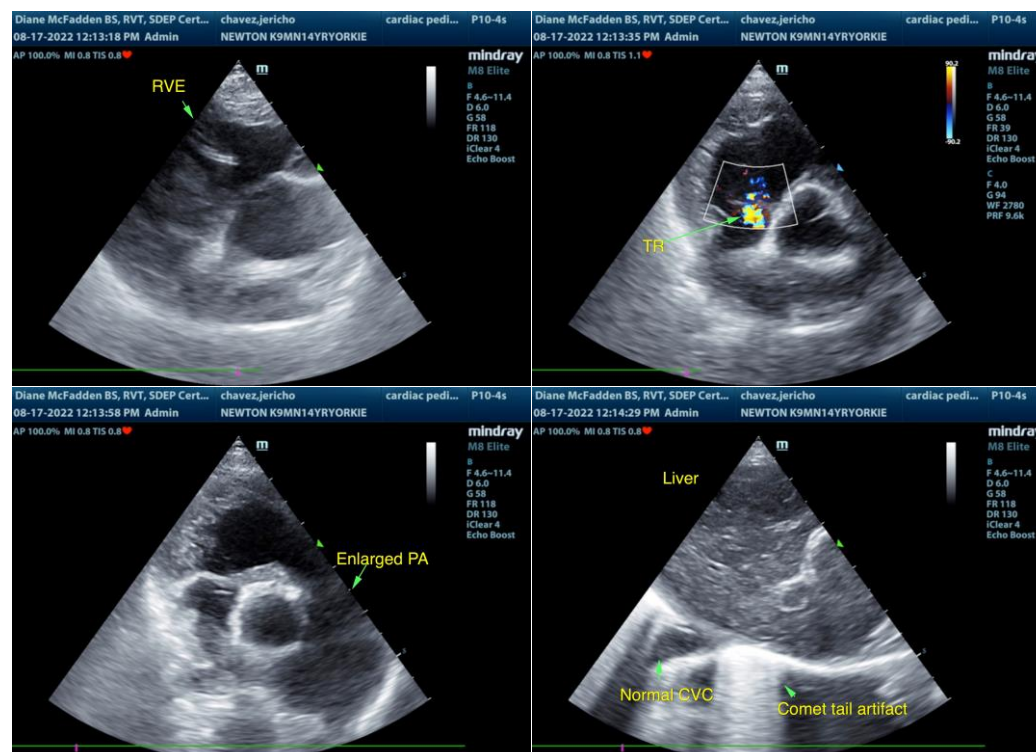
ULTRASONOGRAPHIC FINDINGS

- Enlarged right atrium / right ventricle - consistent with cor pulmonale
- Enlarged pulmonary artery
- TV insufficiency - estimated pulmonary pressure gradient (~50 mmHg MAX) consistent with pulmonary hypertension
- Transdiaphragmatic and peripheral pulmonary comet tail artifact

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The estimated pulmonary pressure gradient based on the measured TR velocity, in addition to evidence of cor pulmonale, is consistent with mild to moderate pulmonary hypertension. Except in cases of confirmed heartworm disease, the underlying cause of pulmonary hypertension may not be obvious yet in this case, the potential for acute vs. chronic lower airway disease could be considered if clinically indicated.

A heartworm test, if not recently done, is recommended. Hospitalization with as-needed respiratory and O2 support with Sildenafil 0.5 - 1.0 mg/kg PO BID titrating up to target dose of 1.0-3.0 mg/kg PO BID, based on clinical response would be appropriate. Exercise restriction is advised. The potential for sudden death cannot be definitively excluded. Recheck echocardiogram is suggested in 4-6 weeks, sooner if persistent / progressive clinical signs consistent with pulmonary hypertension are present.





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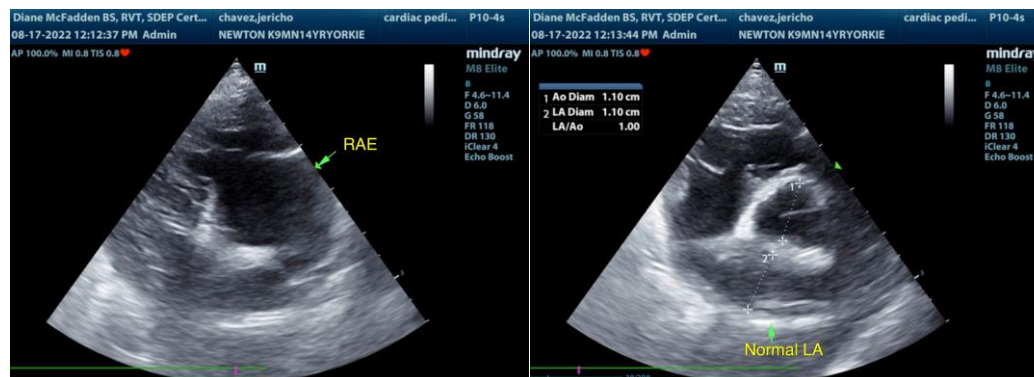
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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