



PATIENT

Nany Hernandez
Medina

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Female Spayed

AGE

10 years

WEIGHT

9lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Gabriel Ferrer,
DVM

HOSPITAL NAME

Pulse: Pet Ultrasound
Services

REFERRING VET

Dr. Quinones

INVOICE

24185

DATE

5/13/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Presented for coughing and rapid breathing attacks. Pulmonary crackles present – started medications again. Grade 2/6 heart murmur.

-Current medications: Vetmedin 1.25mg PO BID (0.3mg/kg dose), Benazepril 1.25mg PO SID (0.3mg/kg dose), Furosemide 6.25mg PO BID (1.6mg/kg dose).

-Abnormal lab results: SDMA 31.0 - 14 µg/dL BUN 51.7 - 27 mg/dL Total Protein 8.3. 5.2 - 8.2 g/dL Globulin 5.4. 2.5 - 4.5 g/dL Lipase 3,037. 200 - 1,800 U/L

-Pertinent previous echo findings (10/21/21 MML): CVD B1 with mild MR and no LAE; mild LVH. Triple therapy discontinued based upon this study.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Trace/mild eccentric mitral regurgitation with no left atrial dilation. Decreased LV diameter with adequate myocardial function. Mild LV hypertrophy (0.8cm globally). The tricuspid valve appears normal with trivial tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. The MPA is prominent. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

CARDIAC CHART

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	NM	NA	NM	1.2	70	98	0.1
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	125	1.2	2.1	4.1	1.4	1.7	0.5
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
*Note: All measurements based upon multi-modal images and methods. An average value is reported.				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Largely unchanged cardiac dimensions and function. Subclinical chronic degenerative valve disease persists with trace/mild mitral and trivial tricuspid regurgitation. NO left atrial enlargement indicates



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the current risk for complication is low. Mild LV thickening is identified with a small chamber, which was noted in the prior study. The patient has been restarted on Lasix making the possibilities of a normal variant, volume depletion or other secondary finding still a possibility. A baseline BP and lab work are recommended. The MPA is prominent, which may reflect early PAH given the history. No concurrent issues such as systolic dysfunction are noted in this study.

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Given these findings, **any respiratory signs remain unlikely to be cardiac in origin** and primary respiratory causes should be considered. Crackles are non-specific, and in this patient likely suggest pulmonary disease rather than pulmonary edema. Highly recommend radiologist evaluation of films to further guide respiratory therapy. The use of Lasix in this case is concerning, given low risk for CHF as there is development of azotemia in the history. These medications remain unnecessary prior to significant cardiac enlargement or onset of congestive heart failure and should be discontinued. Given MPA prominence, can consider a trial of Sildenafil in addition to aggressive pulmonary therapy (Baytril, anti-inflammatory steroids, hydrocodone, etc) to hopefully improve clinical status. It is important to note that PAH does not cause the cough; rather, the chronic cough leads to development of PAH. Monitor for signs of progressive PAH including exertional dyspnea or collapse.

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Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

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No cardiac contraindication for general anesthesia prior to chamber enlargement.

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Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

Plan: Baseline BP recommended. Discontinue triple therapy. Recommend CXR with Radiologist review, course of Baytril, aggressive hydrocodone, etc as dictated by the clinical picture. A sildnefail trial can be done safely to assess for any improvement in breathing comfort (give 1-2mg/kg PO q8h for 2 weeks and assess response).

Consider conservative monitoring with a recheck echocardiogram in 6-12 months, sooner if any development of clinical signs.

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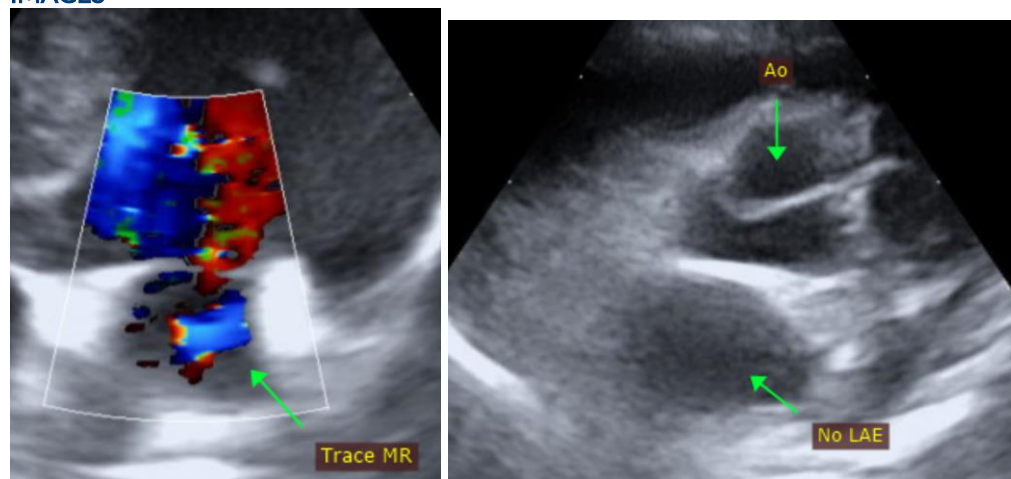
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IMAGES



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.



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Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. 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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Diplomate of the American College of Veterinary Internal Medicine (Cardiology)

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