



PATIENT

Robert Conway

SPECIES

Canine

BREED

Chihuahua

SEX

Male Neutered

AGE

9.5 years

WEIGHT

12lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jennifer Todd, DVM

HOSPITAL NAME

Lambs Gap Animal
Hospital

REFERRING VET

Dr. Kinney

INVOICE

28608

DATE

1/30/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. Presented on 1-10-23 for chronic coughing with worsening of coughing spells. Rads showed collapse of the mainstem bronchi and cardiomegaly. He was started on hydrocodone 5mg 1/4-1/2 tab PO Q8-12h and owners noted no coughing once was hydrocodone started. Cerenia was also started once the radiology report came in. It was noted that Robert should have run out of pimobendan-asked owner about this, and she reported he had been getting the medication but was accidentally sent an extra bottle after she called them with a new credit card number. Upon further discussion with owner, the pimo that Robert had been getting from Wedgewood had expired 7/22. A new one-month prescription was sent to Wedgewood, additional refills. No concerns noted on blood work, HW/tick serology negative UA showed borderline proteinuria, and 2+ calcium oxalate/pH 5.5 Cysto/in house UA was recommended to make confirm presence or no presence of calcium oxalate, can collect sample on day of echo. No crystals were seen today on fresh UA by cysto. BP: 168, 172, 164mmHg.

-Pertinent previous echo findings (3/2021 MML): Moderate MR, moderate LAE, mild LVE, trace TR. LA: 2.3, LV: 3.5.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 10mm/mV. Significant motion artifact throughout. The average heart rate is 150bpm with a largely regular rhythm. No obvious dysrhythmias observed. ECG diagnosis: Normal sinus rhythm.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Moderate to severe eccentric mitral regurgitation with moderate to severe left atrial dilation. Normal MR velocity. Moderately increased LV diameter with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with mild septal prolapse and mild tricuspid regurgitation. Mild right heart enlargement suggest early pulmonary hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No aortic and trivial 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	4.9	NM	1.9	2.0	57	88	0.14
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	NM	1.5	0.7	5.4	2.7	3.7	1.6
*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)
				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)



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**Note: All measurements based upon multi-modal images and methods. An average value is reported.*

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

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)

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, the degree of disease continues to progress with moderate to severe mitral and mild tricuspid regurgitation. The LA/LV dimensions are increased comparatively, and mild pulmonary hypertension is suspected. The ECG is unremarkable with a normal sinus rhythm.

Given progression seen here, consider addition of an ACE-I and Spironolactone for potential long-term benefit. The cough remains multi-factorial in origin and continued Hydrocodone is recommended. No obvious indication for Lasix at this time.

Prognosis is guarded long-term with risk for progression to CHF, malignant arrhythmias and/or sudden death going forward.

Anesthetic risk is considered significantly elevated and elective procedures should be avoided. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol induction, etc.) are recommended. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

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

PLAN

Continue Pimobendan as prescribed. Institute ACE-I 0.5mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h.

Monitor renal values in 1-2 weeks, then every 3-4 months lifelong.

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

IMAGES





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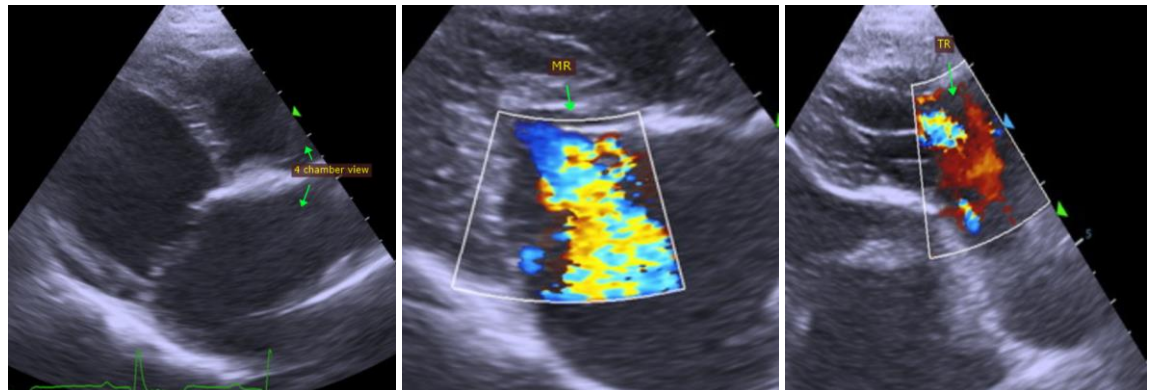
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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.

Maggie Machen Lamy, DVM
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