



PATIENT

Edison Bell

SPECIES

Canine

BREED

Shih Tzu Mix

SEX

Male Neutered

AGE

8.7 years

WEIGHT

8.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Goodman, DVM

HOSPITAL NAME

Evendal Blue Ash Pet
Hospital

REFERRING VET

Dr. Goodman

INVOICE

47786

DATE

5/6/26

PRESENTING CLINICAL SIGNS

History: Recheck echo. Syncopal episode 5/1/2026. Continued cough episodes since episode.

BP: 150, 159, 155mmHg.

-Current medications: Pimobendan 1.25mg BID (started 10/2025), Standard Process Cardiac Support 1/8th tsp SID (started 10/2023), Potassium Citrate SID, Apoquel 3.6mg 1/2 tab prn.

CXR Report Idexx 4-6-26: progressive LAE compared to previous.

CXR report Idexx 5-5-26: No change.

Prior echo results (MML 3-20-26): CVD B2; LA:Ao 2.0, LV 3.0, severe MR, mild TR

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. The average heart rate is 120bpm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with significant left atrial dilation. Mildly increased LV diameter with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened, with mild tricuspid regurgitation. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic and trace pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

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	NM	NM	2.2	60	90	0.11
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	1.7	0.7	3.9	2.2	2.9	1.2
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998							



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Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Hansson et al, Vet Rad and Ultrasound 2002	40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet	50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists similar to previous which is not surprising given the timeframe. Severe mitral and mild tricuspid regurgitation are unchanged, with essentially stable 4 chamber dimensions. That said, significant left atrial and ventricular enlargement indicates there is still risk for progression to spontaneous congestive heart failure in the future. Without TR velocities, concurrent issues such as pulmonary hypertension cannot be ruled out. The ECG is unremarkable with a respiratory sinus arrhythmia.

A cough is noted across serial exams. While mainstem bronchi compression may certainly be contributing to an increase in coughing, other primary airway contributions should also be considered (tracheal collapse, COPD/chronic bronchitis, etc.). Consider hydrocodone for any mechanical component due to cardiomegaly. If the cough is poorly controlled and/or progresses long term, pulmonary hypertension (PAH) can develop secondarily. Signs of clinically relevant PAH include exertional dyspnea or exertional syncope. It is important to note that PAH does not cause the cough; rather, the cough leads to PAH.

An exact cause for syncope is not identified here. If the episodes recur, further work up may be warranted. CHF was not seen on CXR, the ECG and BP are normal, etc.

Given these findings, continued Pimobendan is indicated in this patient as below. Additionally, an ACEI is recommended, as discussed previously. Continued assessment of progression in the future will help predict long term outcome; however, prognosis is guarded at this stage (B2). Fifty percent of stage B2 patients typically develop CHF within 2-2.5 years of diagnosis. The median time to development of CHF in B2 cases treated with pimobendan is 3.5 years. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

Anesthetic risk is considered moderately elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, Propofol or alfaxalone induction, iso or sevo gas) 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. Avoid alpha 2 agonists such as Dexdomitor.

PLAN

Continue Pimobendan 0.25-0.3mg/kg PO q12h. Institute ACEI 0.5mg/kg PO q12h. Further cough work up and treatment if indicated.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.



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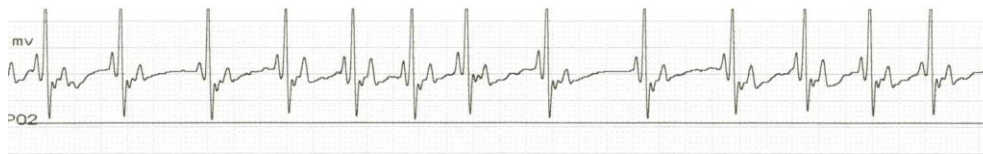
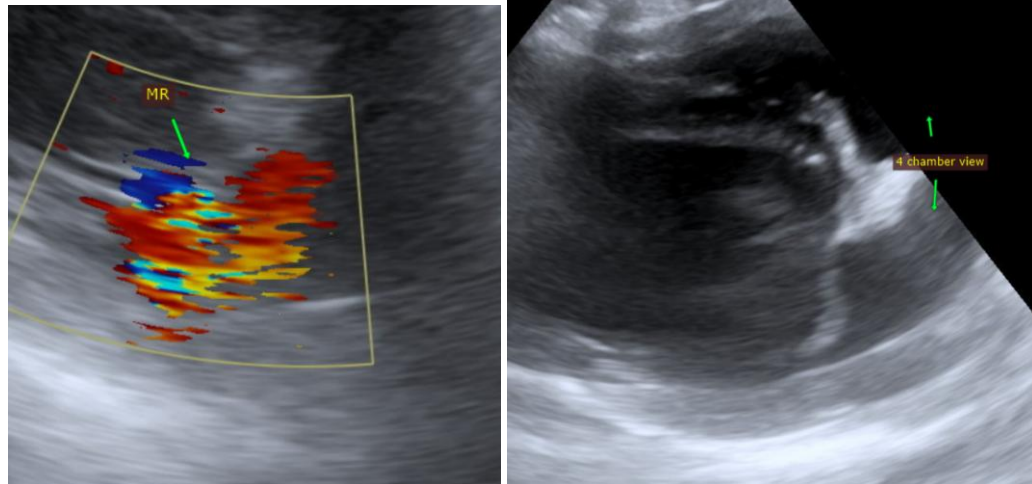
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IMAGES



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.

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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