

PATIENT

Rex Wheat

SPECIES

Canine

BREED

Chihuahua

SEX

Male Neutered

AGE

16 years

WEIGHT

9.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Loetitia Saint-Jacques,
LVT

HOSPITAL NAME

Brighton Greens
Veterinary Hospital

REFERRING VET

Dr. Murphy

INVOICE

46536

DATE

1/21/26

PRESENTING CLINICAL SIGNS

History: Heart murmur for many years, in 2024 GVVH placed him on 1.25mg Pimobendan BID without any radiograph study or heart work up. Today present for increased frequency coughing, especially during the night when he is trying to sleep. He has a few times brought up a white frothy substance. Owner thought it was related to tracheal collapse but not actually happening during the day. Today present with increased RR, mild dyspnea and increased alveolar sounds, likely early CHF, also new arrhythmia present. Also has had a few collapsing episodes which he becomes stiff and anal glands on himself. Suspected to be low grade seizure or syncopal episode. Grade 5/6 LHS and 4/6 RHS, irregular arrhythmia, difficult to get accurate heart rate but I suspect around 140, RR 50. BP: 140mmHg.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental information only.
Cardiomegaly with LA enlargement. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 182bpm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Occasional APCs seen. No VPCs, pauses or other dysrhythmias observed. ECG diagnosis: Normal sinus tachycardia with occasional APCs.

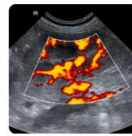
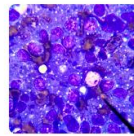
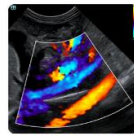
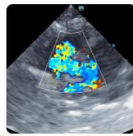
ECHOCARDIOGRAM FINDINGS

2D, m-mode and Doppler imaging are available. Diffuse thickening of mitral valve leaflets (anterior > posterior) with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial dilation. Significant LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened, with mild tricuspid regurgitation. Moderately elevated velocity. Mild right atrial and ventricular dilation consistent with moderate pulmonary arterial hypertension. The MPA is mildly dilated. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No pulmonic or aortic 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	5.7	3.8	NM	2.2	55	90	NM
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	180	1.2		4.4	2.5	3.0	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)
				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)

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



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. Mild TR is also noted, with evidence of moderate pulmonary hypertension. This is likely secondary to a reported cough and elevated LA pressure. No additional issues such as systolic dysfunction are identified.

The ECG is largely normal with isolated APCs noted. These are likely secondary stress and structural heart disease in this case. No treatment is necessary at this time.

The described cough is likely multi-factorial in origin, including a mechanical component due to cardiomegaly, possible concurrent airway disease and/or early CHF given the severity of disease. Even without obvious CHF on recent CXR, given the symptoms and echo findings full lifelong **cardiac support is recommended as below** including Lasix therapy. Depending on clinical response to the medications, cough suppression may also be useful. **Monitoring of sleeping breathing rates in the future will be paramount to determine the origin of any future cough.** The average survival of canine patients with active pulmonary edema is 8-9 months on medications; however, they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Monitoring of renal values is recommended lifelong.

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

Elective anesthesia is not advised, as there is high risk for complication.

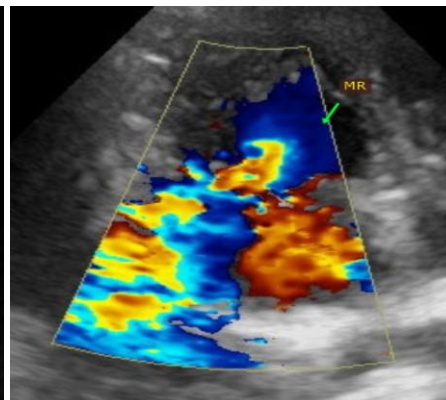
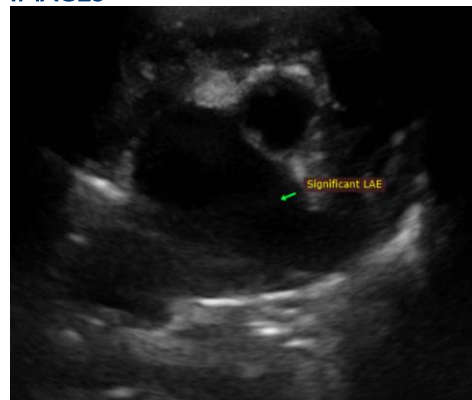
PLAN

Administer Pimobendan 0.3mg/kg PO q12h. Administer low dose furosemide/Lasix 1 mg/kg PO q12h. Administer spironolactone 1-2mg/kg PO q12h. Consider hydrocodone with homatropine (0.2-0.4mg/kg PO up to q4-6 hours PRN) if cough persists despite normal SRRs.

A renal panel and BP are recommended in 10-14 days, then every 3-4 months on diuretics to ensure tolerance of medications. If doing well at that time and BP >130mmHg, institute ACEI 0.5mg/kg PO q12h.

A recheck echocardiogram and ECG are recommended in 6 months to screen for progression, sooner if clinical signs arise/persist.

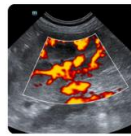
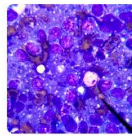
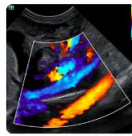
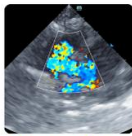
IMAGES



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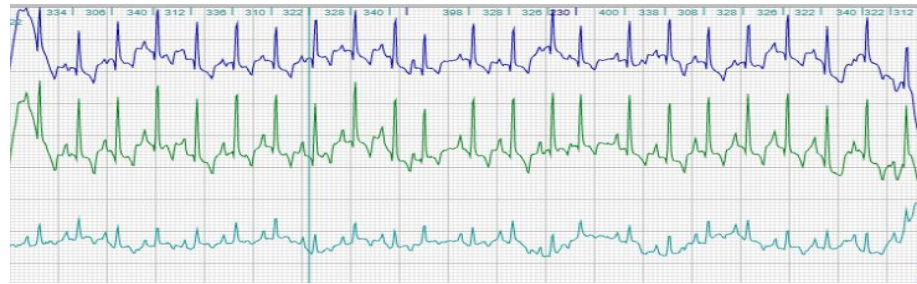
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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info@sonopath.com