



PATIENT

Sally Wilson

SPECIES

Canine

BREED

Chihuahua

SEX

Female Spayed

AGE

11 years

WEIGHT

8.7lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Dana Alterman,
RDCS, LVT

HOSPITAL NAME

Eubank Animal Clinic

REFERRING VET

Dr. Harris

INVOICE

21234

DATE

9/27/21

PRESENTING CLINICAL SIGNS

History: Grade 5/6 murmur, Arrhythmia, Syncope/collapse.

-Current medications: Pimobendan 1.25mg - 1 T PO in am + 1/1 T PO in PM, Furosemide 20mg - 1/2 T PO BID.

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, 20mm/mV. The average heart rate is 150bpm (range 107-188bpm). 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. The mitral valve is markedly diffusely thickened with severe prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is normal. There is severe left atrial enlargement. There is mild left ventricular dilation. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is mildly dilated. Mild right atrial and right ventricular dilation. The tricuspid valve is mildly thickened with mild tricuspid regurgitation. Velocity indicative of moderate pulmonary hypertension. Mild MPA dilation. No pericardial/pleural effusion or cardiac masses are seen.

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	5.0	3.5	2.5	2.6	50	83	0.2
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	1.1	0.9	3.9	3.2	3.5	1.7
*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

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe LA dilation enlargement indicates the risk for spontaneous congestive heart failure is elevated and cardiac supportive medications are indicated as below. There is also moderate pulmonary arterial hypertension which should be monitored going forward. No additional issues are identified, and the ECG shows a respiratory sinus arrhythmia.

Syncope in a dog with this degree of structural disease is most likely cardiogenic in origin, although an atypical seizure cannot be ruled out. Cardiac causes include pulmonary hypertension (moderate in this case), early CHF/poor cardiac output (very possible), rupture of a chord or LA tear (not seen), arrhythmia (not seen on screening ECG), or vasovagal events (possible). Given the degree of LA dilation and the severity of MR, I am concerned for early CHF and decompensation as a possibility. Chest radiographs may be useful, however even without radiographic evidence of CHF I would initiate full cardiac support and monitor closely for improvement/persistence of symptoms. Sildenafil is also recommended to lower pulmonary pressures. If episodes still persist, other causes should be investigated (holter monitor, neurology consult, etc.).

Close monitoring for development of associated clinical signs (development of a cough, labored breathing, exercise intolerance or worsening collapse episodes) is recommended. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home. Prognosis is guarded to poor given the severity of cardiac disease and dilation and high risk for decompensation, worsening collapse episode, and/or development of spontaneous CHF.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit.

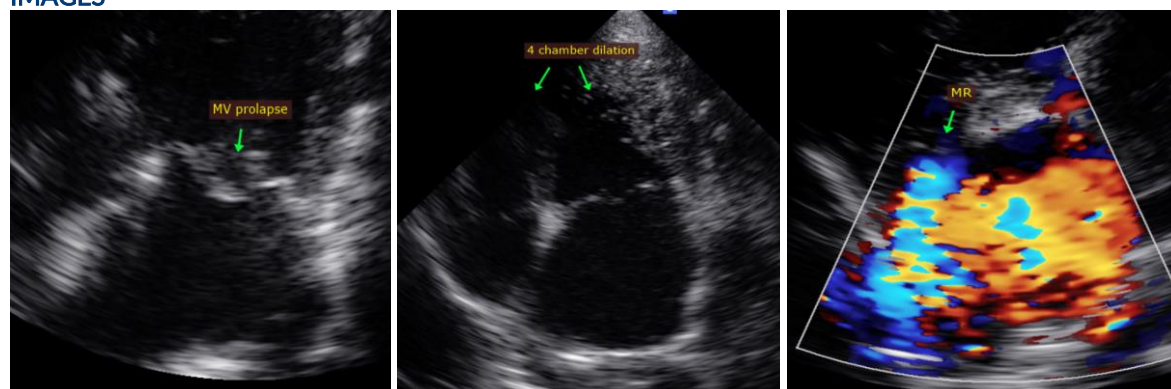
PLAN

Screening BP is recommended. Institute Pimobendan 0.3mg/kg PO q12h. Institute furosemide (Lasix) 1-2mg/kg PO q12h. Institute Benazepril/Enalapril 0.5mg/kg PO q12h. Institute sildenafil 1-2mg/kg PO q12h. If syncope persists, further evaluation is indicated ASAP including chest radiographs and neurologic consult.

Lab work is recommended in 1-2 weeks to ensure tolerance of medications, then every 3-4 months lifelong.

A recheck echocardiogram is recommended in 4-6 months to screen for progression, sooner if clinical signs arise.

IMAGES





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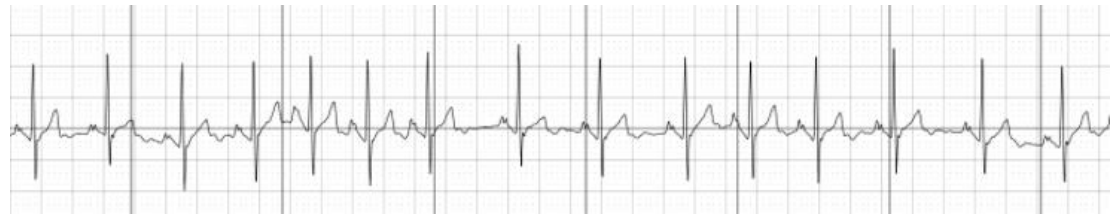
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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