



PATIENT

Louise Powers

SPECIES

Canine

BREED

Chihuahua

SEX

Female Spayed

AGE

11 years

WEIGHT

5.7lbs

INTERPRETED BY

Maggie Machen
 Lamy, DVM, DACVIM
 (Cardiology)

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

West Eugene Animal
 Hospital

REFERRING VET

Dr. Powers

INVOICE

24317

DATE

5.20.22

PRESENTING CLINICAL SIGNS

History: Presented for hacking cough with terminal retch (or possibly dry heaving?). First noticed a few weeks ago and becoming progressively worse and more frequent. Coughed up clear fluid and white foam last night. More clingy lately, but otherwise acting normally. Good appetite. No vomiting or diarrhea. No known dietary indiscretion recently but has a history of corn cob foreign body obstruction and food bloat within the last 2 years. Grade 4-5/6 left systolic murmur. Tachycardia. Femoral pulses strong and synchronous. Mild tachypnea, but normal respiratory effort. Lung fields clear. No nasal discharge. Abdomen soft and non-painful. Grade 2 periodontal disease.

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; 50mm/s, 20mm/mV. The average heart rate is 220bpm (range 210-230bpm). 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 dysrhythmias observed. ECG diagnosis: Normal sinus tachycardia.

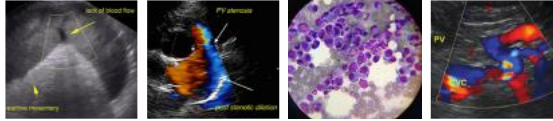
ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial dilation. LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Right heart is mildly dilated. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious 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	5.6	NM	NM	2.1	59	94	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	0.96	0.9	2.6	2.1	2.7	1.1
*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)
				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)

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



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Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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

The murmur is due to chronic degenerative valve disease causing severe mitral and trace tricuspid regurgitation. Significant left atrial and ventricular enlargement indicate the risk for spontaneous congestive heart failure is elevated. Early pulmonary hypertension is suspected, which is likely secondary to a reported cough and elevated LA pressure. No obvious additional issues are noted.

The ECG shows a normal sinus tachycardia. While the heart rate is quite elevated, if the patient was stressed this is considered a normal finding. If the tachycardia persists at home, highly recommend screening for causes, such as early CHF, systemic illness, lab work abnormalities, etc.

A cough in this patient with severe heart disease is likely multi-factorial in origin, including mainstem bronchi compression and/or potentially some degree of upper or lower airway disease. Early CHF/pulmonary edema should also be considered; however, this is less likely based upon the reported history. Screening chest radiographs are strongly recommended as CHF is a radiographic diagnosis that can only be supported by ultrasound. Recommend institute cardiac supportive medications including a weak diuretic (spironolactone) and advise close monitoring at home for need for Lasix therapy. Pending response, cough suppression (up to q4-6 hours) may also be helpful for mechanical cough. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.

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. Long term prognosis is guarded to poor, with an average survival time of 8-9mo for canine patients with active pulmonary edema 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.

PLAN

Baseline CXR is strongly recommended. Institute Pimobendan 0.3mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Baseline BP recommended. If >130mmHg, institute ACE-I (benazepril or enalapril) 0.5mg/kg PO q12h. Consider hydrocodone with homatropine for QOL (0.2-0.4mg/kg PO up to q4-6 hours PRN for cough; available in 5/1.5mg tabs and 5mg/5ml liquid suspension).

A renal panel is recommended in 1-2 weeks, then every 3-4 months lifelong.

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



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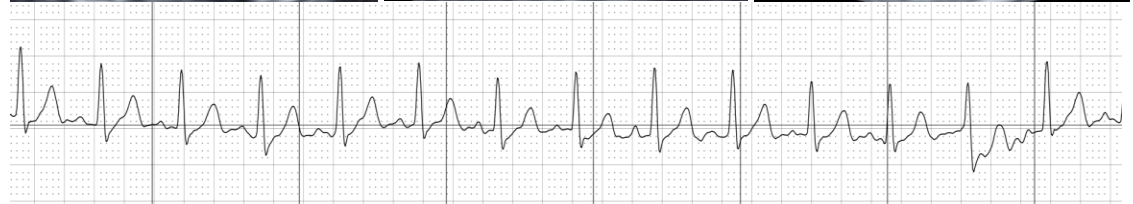
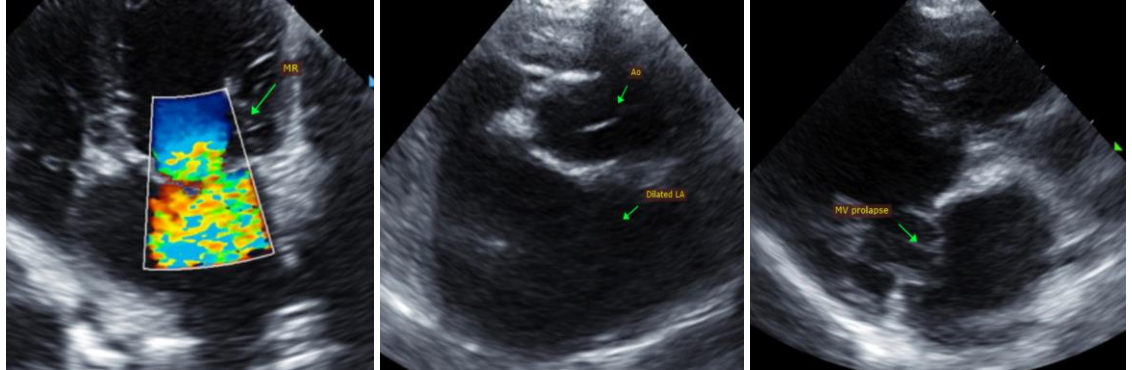
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IMAGES



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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info@sonopath.com