



PATIENT

Raven Flores

PRESENTING CLINICAL SIGNS

History: Increased breathing rate, tachycardia. Coughing; clear lungs. Heart murmur. Cardiomegaly.
 -Abnormal PE/Chem/CBC/UA Results: ProBNP- 1462.

SPECIES

Canine

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

BREED

Mix

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 210bpm with a regular rhythm. 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.

SEX

Female Spayed

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available The mitral valve is severely diffusely thickened with prolapse into the left atrial lumen. There is a suspect ruptured chordae tendinae visualized. There is severe mitral regurgitation present. The MR velocity is normal. There is severe left atrial enlargement. There is moderate 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. Trace aortic insufficiency. The main pulmonary artery is prominent. Mild right atrial and right ventricular dilation. The tricuspid valve is moderately thickened with mild to moderate tricuspid regurgitation. The tricuspid regurgitant velocity is elevated consistent with moderate PAH. No pericardial/pleural effusion or cardiac masses are seen.

AGE

7 years

WEIGHT

13lbs

INTERPRETED BY

Maggie Machen
 Lamy, DVM, DACVIM
 (Cardiology)

CARDIAC CHART

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Liberty Animal Hospital

REFERRING VET

Dr. Paoletti

INVOICE

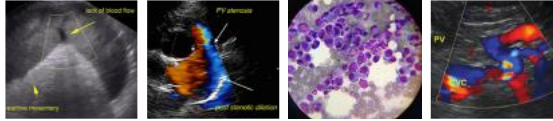
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DATE

11/2/21

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	5.1	4.2	1.5	>2.0	59	94	0.16
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	NA	1.5	5.9	NM	3.7	1.5
*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)

Adapted from June Boon, Veterinary Echocardiography, 1998
 Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435



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Hansson et al, Vet Rad and Ultrasound 2002 Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing severe mitral and mild moderate tricuspid regurgitation. Severe left atrial and ventricular enlargement indicates the risk for spontaneous congestive heart failure is elevated. There is also concurrent pulmonary hypertension, which is likely secondary to chronically elevated LA pressure (primary respiratory issues cannot be ruled out). Finally, a ruptured chord is identified which may be the reason for presumably acute onset clinical signs. Initiation of full cardiac support is recommended at this time as below (even without obvious decompensation on the included films), based upon the totality of these findings. The ECG is unremarkable with a normal sinus tachycardia.

A cough in this patient with severe heart disease is likely multi-factorial in origin, including mainstem bronchi compression, possible early pulmonary edema, and/or some degree of lower airway disease. Pending response to diuretic and supportive cardiac therapy, cough suppression (up to q4-6 hours) may also be helpful for QOL. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.

The average survival of canine patients with this severity of disease and concern for CHF is 8-9 months on medications, however they generally are able to maintain a good quality of life. Going forward the risk will remain high for CHF, development of arrhythmias/syncope and sudden death, and close monitoring is advised.

Elective anesthesia is not advised.

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.

PLAN

Baseline BP is recommended. Initiate furosemide/Lasix 1-2mg/kg PO q12h. Institute Pimobendan 0.25-0.3mg/kg PO q12h. Institute spironolactone 1-2mg/kg PO q12h. If indicated, consider hydrocodone with homatropine, 0.2-0.4mg/kg PO up to q4-6 hours PRN.

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

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



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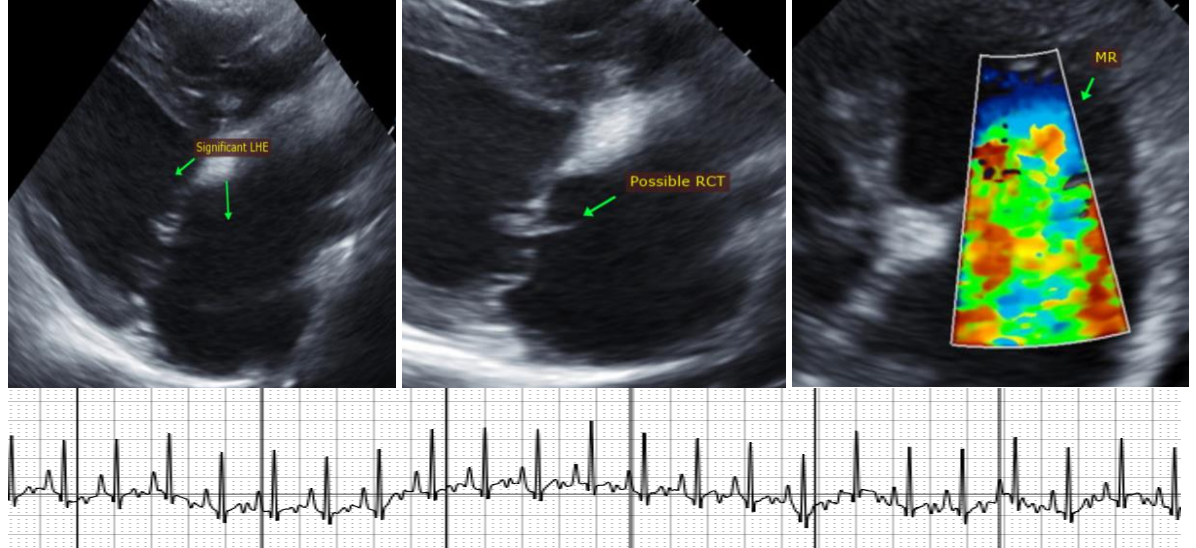
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IMAGES



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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