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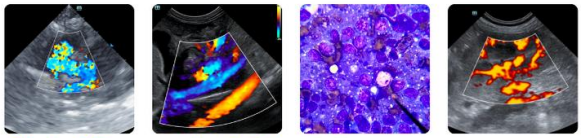

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PATIENT

Foxy Newman

SPECIES

Canine

BREED

Terrier Mix

SEX

Female Spayed

AGE

11 years

WEIGHT

17.4lbs

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

47852

DATE

5/13/26

PRESENTING CLINICAL SIGNS

History: New onset seizures and exercise intolerance. Coughing episodes every 2 hours, will cough at night as well, yesterday was on a walk, coughed and then had likely syncopal episode. Grade 4/6 murmur LHS and 1/6 RHS. On Zonisamide 50mg BID and Doxy 35mg BID.
-Abnormal PE/Chem/CBC/UA Results: BUN 34 (<31), Cr 1.7 (<1.6), SDMA 14.3 (<14), marginal increase in platelets and monocytes, T4 WNL, UA USG 1.034, 1+ proteinuria. BP: (done prior to echo) ~200bpm. CXR: Mild left-sided cardiomegaly. No obvious signs of cardiogenic pulmonary edema, however there is mild right cranial lobar venous congestion. Mild dynamic mainstem bronchial collapse. Diffuse mild bronchial pattern.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 160bpm. 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. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is thickened with mild prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. There is moderate to severe left atrial enlargement. There is no left ventricular dilation. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve, no insufficiency. The aortic valve appears normal. Mild right heart enlargement. The tricuspid valve is thickened with mild to moderate tricuspid regurgitation. The tricuspid regurgitant velocity is consistent with moderate pulmonary hypertension. Mild MPA prominence. The pulmonary artery and pulmonic valve are normal. No PI. 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	5.5	4.0	NM	1.9	57	89	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	170	1.5	0.7	7.9	2.5	2.8	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 **Note: All measurements based upon multi-modal images and methods. An average value is reported.*				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)

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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	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

Chronic degenerative valve disease causing severe mitral and moderate tricuspid regurgitation. Moderate to severe left atrial enlargement indicates there may be elevated risk for spontaneous congestive heart failure in the future. Moderate pulmonary hypertension is present as evidenced by an elevated TR velocity and mild right heart enlargement, which is likely secondary to a reported cough. Given the combination of findings, Pimobendan is certainly recommended as below. The ECG is unremarkable with a normal sinus rhythm.

Coughing/syncope in this patient may be cardiogenic in origin; however, primary respiratory disease is suspected in this predisposed breed. The CXR report is inconclusive, and unfortunately CHF cannot be confirmed or denied on echocardiograph. That said, the general impression is Lasix is likely unnecessary. Close monitoring of breathing rates is advised, as if any change is noted this can be given as a trial. Most patients with cough and syncope will improve by simply treating the cough aggressively with Hydrocodone. That being said, if syncope is occurring with excitement (i.e. independent of the cough), this may be related to PAH. Sildenafil is recommended if the patient's episodes persist despite Pimobendan therapy.

The cough (i.e., primary respiratory disease) is the suspected cause of development of pulmonary hypertension. It is important to note that PAH doesn't cause the cough; rather the inverse is true. Adequate cough suppression is of the up most importance to maintain stability going forward.

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.

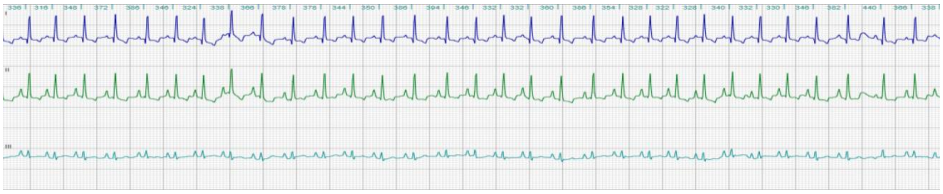
Elective anesthesia is not advised.

PLAN

Institute Pimobendan 0.25-0.3mg/kg PO BID. Consider further respiratory workup/treatment with Hydrocodone if indicated. If syncope persists despite adequate cough control and Pimobendan, institute Sildenafil 1-2mg/kg PO q8-12h.

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

IMAGES



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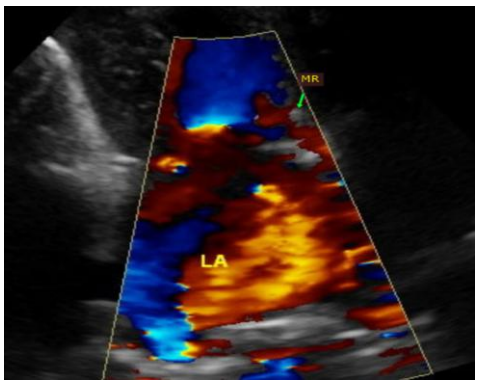

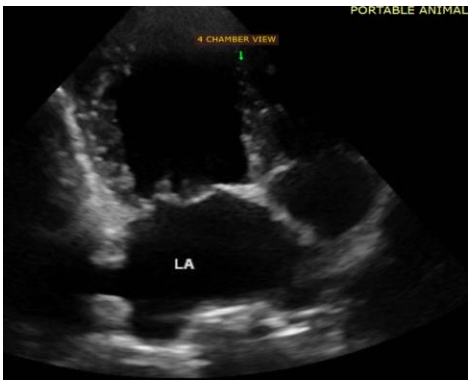

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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