



PATIENT

Lainey Russell

SPECIES

Canine

BREED

Chihuahua

SEX

FS

AGE

13+ years

WEIGHT

4.6kgs

PRESENTING CLINICAL SIGNS

History: Episodes of sudden weakness and collapse- dog found in sternal recumbency 2/7/22 unconscious.

Meds: Spironolactone 12.5mg BID, Vetmedin 1.25mg BID, Furosemide 12.5mg BID

Abnormal PE/Chem/CBC/UA Results: HR 150-160, RR 50-70- 4-5/6 systolic heart murmur-decreased dropped femoral pulse when associated with poss ectopic beats; abdominal distention.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is attached during the study; 25mm/s. The estimated average heart rate is 180bpm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. Isolated APCs and VPCs are identified.

ECG diagnosis: Sinus tachycardia with APCs and VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Significant diffuse thickening of mitral valve leaflets (anterior>posterior) with prolapse into the left atrial lumen. Marked eccentric mitral regurgitation with marked left atrial dilation. LV dilation with hyperdynamic myocardial function. Mildly elevated MR velocity. The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Borderline velocity. Moderate right atrial and ventricular dilation (subjective). No significant MPA dilation. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No pulmonic or aortic insufficiency. Small volume pericardial and pleural effusion. No cardiac tumors observed. Hepatic congestion.

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Loetitia St-Jacques,
LVT/RVT

HOSPITAL NAME

Roundhill AH

REFERRING VET

Dr. Kelly

INVOICE

22540

DATE

2/14/22

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	NM	4.1	NM	2.8			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	NM	0.9	0.7	5	3.4	4.1	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 persists with evidence of significant progression. The MR is now marked, with profound LA and LV dilation. The TR is also increased, with significant right heart enlargement and moderate pulmonary hypertension. This is likely the cause of biventricular failure, with biventricular effusion and hepatic congestion seen on exam.

These findings are most consistent with right-sided CHF, although a LA rupture is also a possibility given the history of collapse. There is also concern for imminent left-sided congestion as well given the degree of pathology. Immediate medication changes are indicated as below. Consider hospitalization if the patient appears or becomes unstable. Baseline chest radiographs and blood pressure are also recommended. 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 ECG shows a sinus tachycardia with both APCs and VPCs. These are due to severe structural disease and congestion, and do not warrant therapy at this time. This patient is at high risk for sustained atrial fibrillation or VT (neither appreciated here) and close monitoring for further collapse episodes is advised. Sudden death is certainly a possibility in this case, and this risk persists despite medical management.

The average survival of canine patients with this severity of disease and CHF is <6 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.

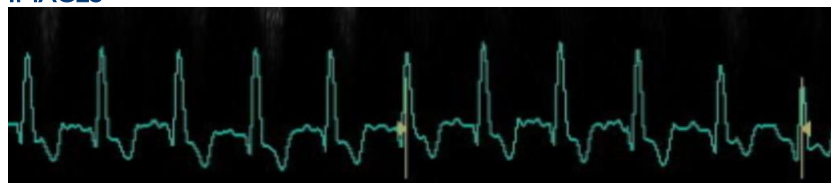
Omega fatty acid supplementation and mild salt restriction may also be of some long term benefit. Monitor for development of a worsening cough, labored breathing, exercise intolerance or collapse episodes.

Plan: Baseline CXR and BP recommended. Consider hospitalization as discussed. If declined, administer injection of Lasix 2mg/kg IM or IV. Discharge on the following: Increase furosemide/Lasix to 12.5mg q8h. Increase Pimobendan to 1.25mg PO q12h. Institute Sildenafil 1-2mg/kg PO q8h. Continue Spironolactone as prescribed.

A renal panel and BP are recommended in 10-14 days to ensure tolerance of medications, then every 3-4 months lifelong. If doing well and BP >130mmHg, institute ACEI 0.5mg/kg PO q12h. If indicated, consider hydrocodone with homatropine, 5/1.5mg tabs Give 1/2 - 1.5 tabs PO up to q4-6 hours PRN.

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

IMAGES





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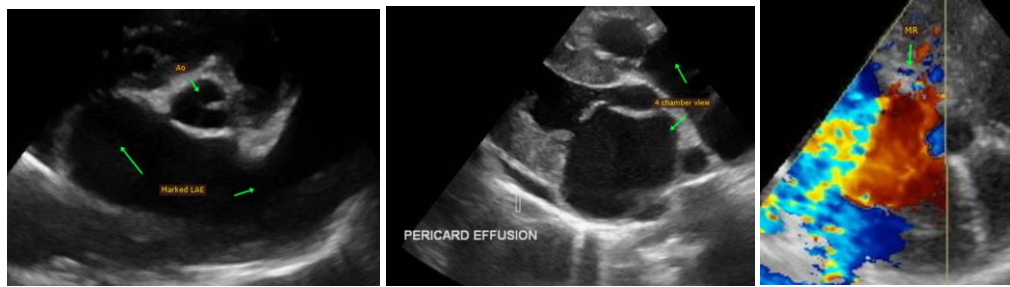
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

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