



PATIENT

Lunna Tarr

SPECIES

Canine

BREED

Boxer

SEX

Female Spayed

AGE

8 years

WEIGHT

95lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

S. Doverspike, DVM

HOSPITAL NAME

Franklin Animal Clinic
Inc

REFERRING VET

Dr. Doverspike

INVOICE

29830

DATE

3/24/23

PRESENTING CLINICAL SIGNS

History: Heard a murmur at pre-dental work up at prior clinic. Started having syncope-like episodes in Feb (one in Feb, one last Sat, one yesterday). Will fall over and act "out of it" for <1 min. Then will be up like nothing happened. During last episode, started coughing. Obese. Grade 3/6 L sided systolic murmur. Tachycardia noted on ECG.

-Abnormal PE/Chem/CBC/UA Results: CHEM: ALP 1050, otherwise WNL. CBC: WNL.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Mild cardiomegaly. Concern for CHF, although motion artifact impedes accurate interpretation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Moderate central mitral regurgitation with severe left atrial dilation. Mild LV dilation with mildly depressed myocardial function. The tricuspid valve appears normal, with trace TR. Normal right atrial and ventricular diameter and morphology. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic and pulmonic outflow velocities with laminar flow. No AI/PI. No pericardial or pleural effusion noted. No obvious cardiac masses. Arrhythmias noted throughout.

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	2.7	1.7	2.2	22	40	0.6
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	2.0	1.0	8.2	4.3	4.6	3.6
*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

The academic diagnosis in this case could be argued. The quantity of MR is only moderate; however, there is severe left atrial enlargement. There is also mild LV dysfunction, although not enough to call this a clear DCM. Regardless, the finding of severe left atrial enlargement suggest risk for complication going forward. Tachyarrhythmias are noted throughout the study, which can also lead to nonspecific cardiac enlargement. **An extended ECG tracing with interpretation is recommended, as treatment is likely warranted.**

Given these findings, reasonable to continue full cardiac support as below. Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time of canine patients with active pulmonary edema is 8-9 months 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.

Omega fatty acid supplementation and mild salt restriction may also be of some long term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

Elective anesthesia is not advised, as there is high risk for complication. Risk: benefit ratio should be considered. Consider consultation with and/or referral to a facility with an anesthesiologist. Should you elect to proceed, cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, iso or sevoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 cage. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Moderate IV fluid restriction is recommended to avoid fluid overload, while considering comorbidities, hydration status, BP, etc. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

PLAN

Immediate ECG should be performed to determine if antiarrhythmic therapy is warranted. Continue Lasix, Spironolactone and Pimobendan. Pending BP >130mmHg, continue ACE-I 0.5mg/kg PO q12h.

Monitor SRRs at home. Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.



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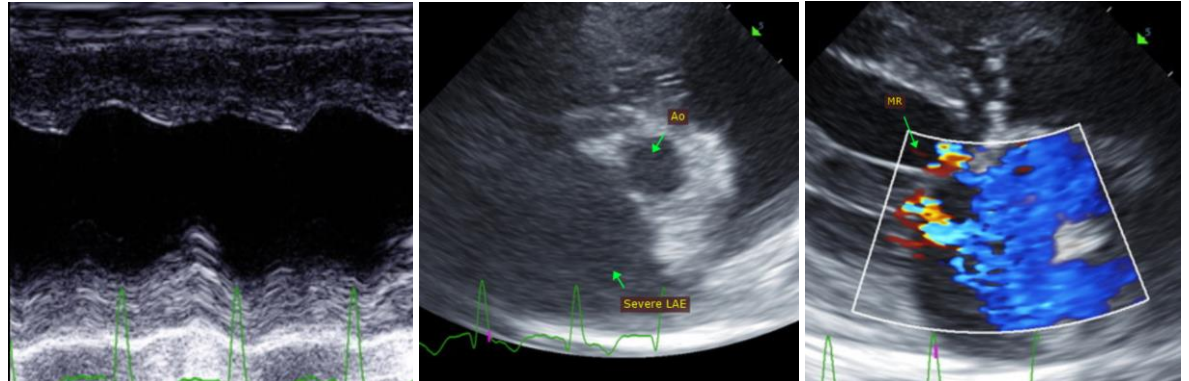
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IMAGES



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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