



PATIENT

Shanna Tova Rasmussen

SPECIES

Canine

BREED

Havanese

SEX

Female Spayed

AGE

10 years

WEIGHT

17.8lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Loetitia St-Jacques, LVT/RVT

HOSPITAL NAME

Brighton Greens Veterinary Hospital

REFERRING VET

Dr. Murphy

INVOICE

22354

DATE

12/8/21

PRESENTING CLINICAL SIGNS

History: Recheck echo. Grade 3/6 heart murmur. Arrythmia noted on exam. Has improved on medications with occasional cough, no further information provided.

-Current medications: Lasix 12.5mg ½ T BID, Vetmedin 5mg ½ T BID.

-Pertinent previous echo findings (5/2021 MML): Moderate MR, moderate LAE, mild LVE, mild to moderate TR: 3.2m/s. LA: 2.6, LV: 3.66; pleural effusion and masslike lesion cranial to the heart base.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 50mm/s; 10mm/mV. The average heart rate is 120bpm (range 88-150bpm). 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. Isolated APCs throughout; singles only. No ventricular premature beats, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm with respiratory variation. Isolated APCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with no prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Mildly increased LV diameter with adequate myocardial function. The tricuspid valve appears thickened with septal prolapse and mild to moderate tricuspid regurgitation. Velocity consistent with mild pulmonary hypertension. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency. No obvious pleural or pericardial effusion noted. No obvious tumors are visualized.

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	5.2	3.3	NM	1.75	48	80	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	130	1.1		8.1	2.7	3.7	2.0
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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 without evidence of significant progression. Mitral and tricuspid regurgitation are largely unchanged, and the overall cardiac dimensions and function are stable. Mild pulmonary hypertension persists without additional issues. Finally, the previously noted mass is not visualized in this study. This is suspected to be due to simply a lack of visualization rather than actual resolution. Focused thoracic ultrasound, repeat chest films, thoracic CT scan, etc. are recommended. That being said if the patient is doing well, it is reasonable to continue medications going forward.

The ECG does show isolated APCs as the cause of the arrhythmia. These are not surprising in a stressed dog with both a neoplastic process and significant valve disease. No treatment is indicated as these appear largely benign at this time. Consider a holter monitor and/or reassessment of the ECG particularly should any syncopal episodes be noted in the future.

Given these findings, continue Pimobendan as below. Any patient on Lasix should also receive an ACE-I which can be utilized pending BP measurement. Prognosis remains guarded at this stage (B2).

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.

Anesthetic risk is considered mildly elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, Propofol or alfaxalone induction, iso or sevo gas) are recommended. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

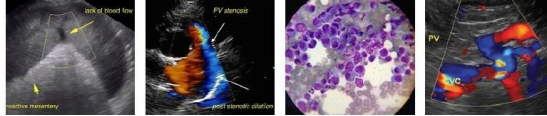
PLAN

Further cranial thorax evaluation as discussed, including focused ultrasound, repeat radiographs and advanced imaging. Baseline BP recommended, if >130mmHg institute ACE-I 0.5mg/kg PO q12h. Continue Pimobendan as prescribed as long as patient is doing well, and renal values will allow.

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

IMAGES





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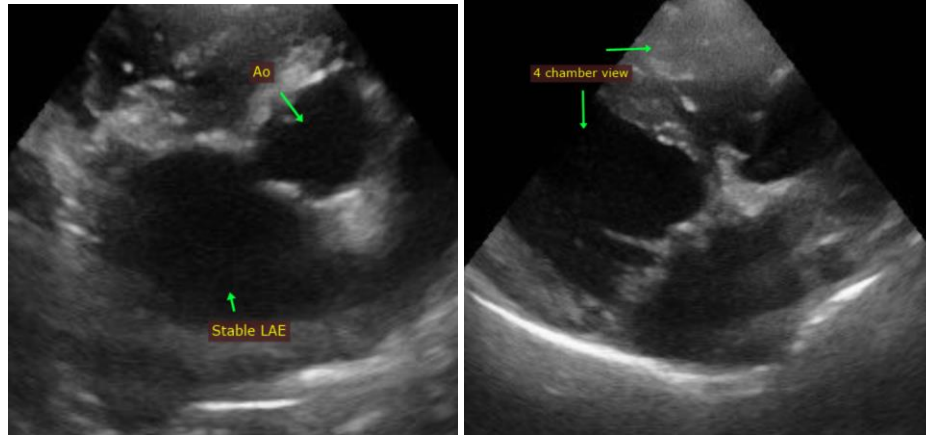
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com