



PATIENT

Bentley Milhoan

SPECIES

Canine

BREED

Cavalier

SEX

Male Neutered

AGE

10 years

WEIGHT

35.4lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Rebekah Jakum, CVT
ARDMS/RVT

HOSPITAL NAME

Conrad Weiser AH

REFERRING VET

Dr. Watzka

INVOICE

29081

DATE

2/17/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. Grade 4/6 heart murmur. Increased coughing. BP: 138, 149, 129, 156mmHg.
-Current medication: Vetmedin 5mg BID, Benazepril 11mg BID, Lasix 18.75mg BID.
-Pertinent previous echo findings (7/2022 MML): Moderate MR, mild LVE, moderate LAE, mild TR, mild PAH: 3.0m/s, trace AI. LA: 2.9, LV: 4.1.

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

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

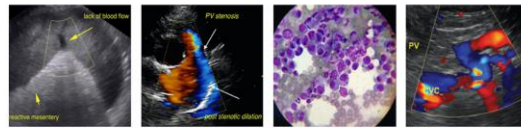
A single lead ECG is available from an AliveCor monitor; 25mm/s, 10mm/mV. The average heart rate is 150bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive with normal dimension. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm.

ECHOCARDIOGRAM FINDINGS

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

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	6.2	3.0	NM	1.9	39	70	NM
CANINE CARDIAC PARAMETERS	HR (BP M)	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	160	1.9	1.0	16.1	3.1	4.4	2.7
*Normal chamber parameters expressed as a mean value				3	1.27	2.46	1.36
BODY WEIGHT DEPENDENT PARAMETERS							
*Note: All measurements based upon multi-modal images and methods. An average value is reported.				5	1.40	2.74	1.60
				10	1.50	3.27	2.06
				15	1.83	3.71	2.43
				20	2.02	4.14	2.80
				25	2.18	4.48	3.10
				30	2.33	4.83	3.39
				35	2.48	5.17	3.69
				40	2.62	5.48	3.96
				50	2.88	6.07	4.46
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 stability. The left heart dimensions are only slightly increased comparatively, which is not surprising given the time frame. Moderate MR is unchanged with a slight increase in TR quantity. The pulmonary pressures are stable and no additional issues are identified. The ECG is unremarkable with a normal sinus rhythm.

Given these findings and the included chest radiographs, congestive heart failure is considered an unlikely cause of the current cough. It is unclear when Lasix was initiated and this should only be continued if there is or was evidence of active CHF. Otherwise, further addressing the cough utilizing Hydrocodone and/or a course of Baytril is recommended. Continuing Pimobendan and Benazepril is recommended lifelong.

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.

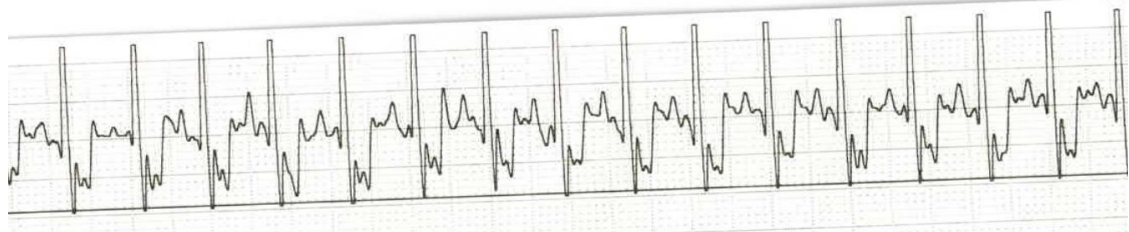
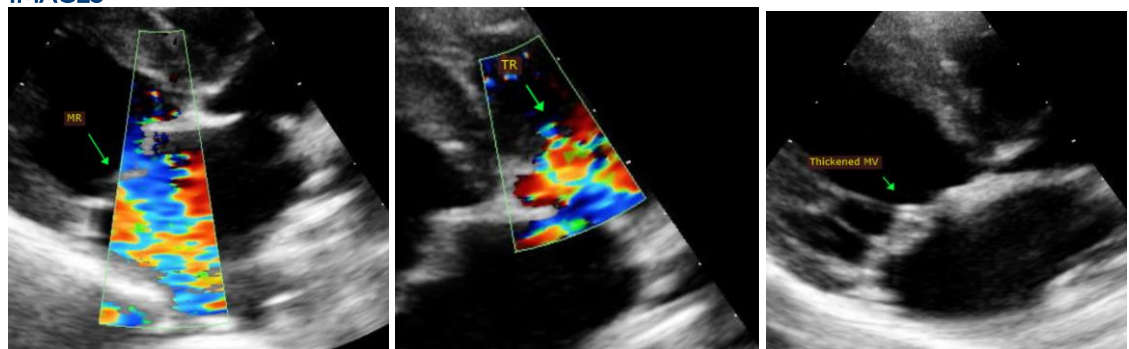
Anesthetic risk is considered moderately elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, Propofol or alfaxalone induction, iso or sevo gas) are recommended. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious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

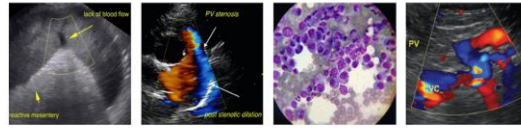
PLAN

Continue Pimobendan 0.25-0.3mg/kg PO q12h. Continue ACE-I 0.5mg/kg PO q12h. If CHF has been documented previously, Lasix should be continued 1-2mg/kg PO q12h. Otherwise, discontinue and further address the cough as discussed.

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

IMAGES





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Bentley Milhoan

veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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.

BREED

Cavalier

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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