IMAGING PERFORMED BY

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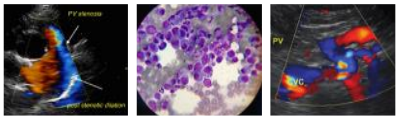

SonoPath
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PATIENT
Merlin Krizan

SPECIES
Canine

BREED
Cavalier

SEX
Male Neutered

AGE
12.26.07

WEIGHT
17.3lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Stephanie Pearce, RDCS, RVT

HOSPITAL NAME
Healing Paws Veterinary

REFERRING VET
Dr. Levitsky

INVOICE
22658

DATE
2/17/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Cough with activity. Possible syncope last week.
-Pertinent abnormal PE/Chem/CBC/UA Results: NSF.
-Current medications: Lasix 12.5mg 1 bid, Benazepril 5mg 1/2 bid, Vetmedin 5mg 1/2 bid.
-Blood pressure: 110mmHg
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (10/29/21 MML): Severe MR, marked LAE, mild LVE, moderate TR, mild PAH: 3.3m/s. LA: 3.5, LV: 3.9
-STAT: Not requested

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with significant prolapse into the left atrial lumen. Lack of coaptation in systole. There is marked eccentric mitral regurgitation present. The MR velocity is normal. There is marked left atrial enlargement. There is moderate left ventricular dilation. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. No AI. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is normal in diameter. The pulmonic valve is normal in appearance with normal outflow velocity. No PI. Mild right atrial and ventricular dilation. Mild thickening and prolapse of the tricuspid valve with moderate TR. Velocity consistent with mild to moderate pulmonary hypertension. 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	3.4	NM	3.0	47	79	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	180	1.4	1.3	7.8	3.8	4.6	2.4
*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)
				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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists with evidence of progression. The LA and LV dimensions continue to increase despite supportive therapy and are in the marked category. Pulmonary pressures are slightly increased, although this is a relatively small change. No additional issues are identified.

Syncope in this patient is not surprising given the degree of atrial dilation. My suspicion is it was simply due to insufficient cardiac output if with even mild activity. Other possibilities such as hypotension, intermittent arrythmias, etc. are certainly not ruled out. The pulmonary pressures have increased slightly; however, this degree of pulmonary hypertension is unlikely to cause clinical signs. Should the episodes recur in the future, further work-up including an ECG may be indicated.

This degree of disease is considered end-stage with progressive dilation. Slight alterations to the medications are recommended as below. The blood pressure is relatively low and in light of recent clinical issues, I would consider discontinuing Benazepril at this time with addition of Spironolactone.

Prognosis is poor in this case with refractory disease and the average survival time is <6 months. Our goal is to maintain quality of life for the short-term. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Monitoring of renal values is recommended lifelong.

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.

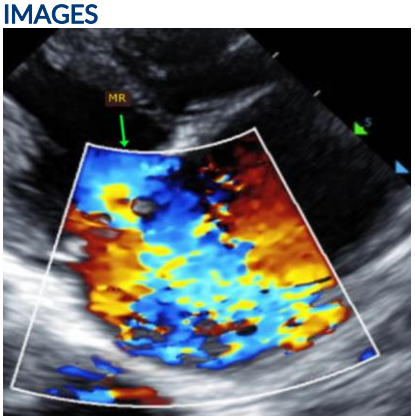
PLAN

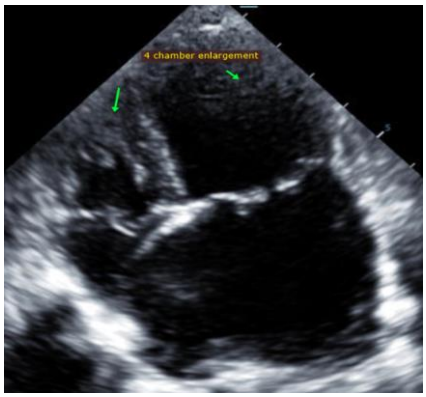
Discontinue Benazepril. Consider institute Spironolactone 1-2mg/kg PO q12n. Continue Lasix as prescribed. Increase Pimobendan to q8h dosing.

A renal panel and BP are recommended every 3-4 months lifelong. If syncope recurs despite these changes, reassess ECG, BP, etc.

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

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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