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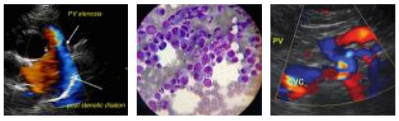

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PATIENT
Kallie Schwabe

SPECIES
Canine

BREED
Australian Cattle Dog

SEX
Female Spayed

AGE
10.11.07

WEIGHT
39.6lbs

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

HOSPITAL NAME
Fork Veterinary Hospital

REFERRING VET
Dr. Doherty

INVOICE
25816

DATE
8.16.22

PRESENTING CLINICAL SIGNS

History: Originally a routine follow-up of the echocardiogram 6 months post. However, the dog has had chronic diarrhea over the past month, and it is not resolving with the initial treatment. Last week, the dog was having a persistent bout of diarrhea and straining excessive when she experienced a likely syncopal episode as she collapsed and was down for a few minutes before she responded. Cardiac signs are minimal with no cough or dyspnea noted by the owner over the past few weeks. Cardiac murmur has persisted at a level of a Grade 3-4/6 systolic. Dog has a previously diagnosed gall bladder mucocele.
-Pertinent abnormal PE/Chem/CBC/UA Results: Results from 5/2/22: WBC 4.1 (4.9-17.6 K/uL) previously results on 1/14/22 - 5.25 K/uL, Neutrophils 2.341 (2.94-12.67 K/uL), BUN 45 (9-31 mg/dl) previously on 1/14/22 - 41 mg/dl, Albumin 4.2 (207-3.9 g/dl) previously 1/14/22 - 4.3 g/dl
ALT 258 (18-121 U/L) previously 1/14/22 - 138 U/L
-Current medications: Pimobendan 3.75 mg BID, Enalapril 5.0 mg BID, Ursodiol 250 mg QD, Denamarin 475 mg QD, Proin 75 mg - 1/2 tablet BID Galliprant 60 mg QD -1/2 tablet PRN, Tylosin 100 mg QD
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (12/2021 Idexx): CVD B2 with severe LA and LVE, severe MR, mild TR, mild to moderate PAH.
-STAT: Declined at this time.
-Imaging performed by: Stephanie Warga RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is normal. There is severe left atrial enlargement. There is mild left ventricular dilation. Left ventricular systolic function is hyperdynamic. Mild right atrial and ventricular dilation (subjective). Mild thickening of the tricuspid valve with mild TR. Velocity consistent with mild pulmonary hypertension. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is normal in diameter. The pulmonic valve is normal in appearance. 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	6.3	3.2	NM	2.1	34	63	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	120	1.4	0.9	18.0	3.7	4.6	3.0
*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)
**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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation persists. Compared to what is available from the prior study, the findings are similar. The LA is significantly dilated indicating a high risk for clinical signs going forward. Mild pulmonary hypertension is noted, which is likely secondary to chronic LA pressure elevation. No additional concurrent issues such as systolic dysfunction are documented.

With this degree of left heart changes, the risk for spontaneous congestive heart failure is elevated and cardiac supportive medications are indicated as below. Addition of a weak diuretic (spironolactone) is included given high risk for decompensation in the future. Assessment of progression in the future will help predict long term outcome, however prognosis is guarded at this stage (late B2). Unfortunately, the patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Given that the reported collapse episode occurred with defecation, a vaso vagal event is suspected. Should these recur independent of this situation, reassessment is certainly advised, including chest radiographs and ECG, etc. A baseline BP is recommended.

Close monitoring for development of associated clinical signs (development of a cough, labored breathing, exercise intolerance or worsening collapse episodes) is recommended. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.

Elective anesthesia is not advised, as there is high risk for complication. If necessary, 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. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit.

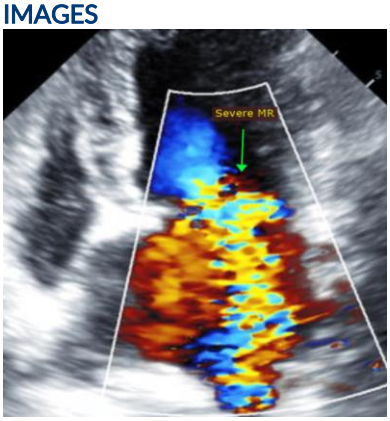
PLAN

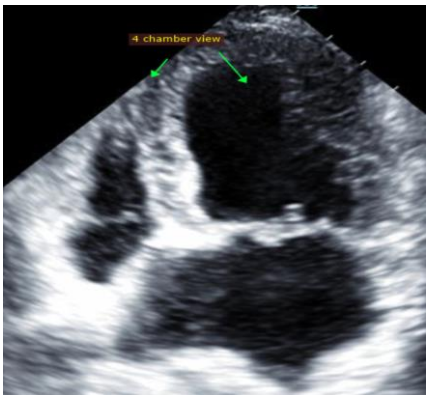
Continue Pimobendan and Enalapril. A screening BP is recommended. Institute spironolactone 1-2mg/kg PO q12h.

Monitor renal values in 1-2 weeks, then every 3-4 months lifelong to ensure tolerance of medications. If episodes recur in the future, further evaluation such as CXR, ECG, etc. is advised.

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

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.

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