IMAGING PERFORMED BY

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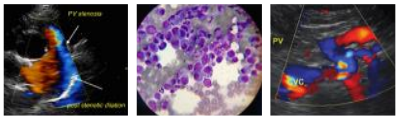

SonoPath
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PATIENT
Donut Corgan

SPECIES
Canine

BREED
Yorkshire Terrier Mix

SEX
Female Spayed

AGE
9.7.10

WEIGHT
6.1lbs

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

HOSPITAL NAME
Bayside Animal Medical Center

REFERRING VET
Dr. Beigal

INVOICE
26763

DATE
10.6.22

PRESENTING CLINICAL SIGNS

History: Newly auscultated grade 4/6 heart murmur, femoral pulses SS, no arrhythmia auscultated; lungs clear bilaterally; normal BVS; O reports shortness of breath when going upstairs or getting excited. Will "pass out" (suspect syncope) and quickly recover, O unsure if current diet is grain free, will double check and transition to grain inclusive if so.
-Pertinent abnormal PE/Chem/CBC/UA Results: See attached.
-Current medications: Liquid Hepato chicken flavor, Vetmedin 2.5mg.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results:
-STAT: Not requested
-Imaging performed by: Andi Parkinson, BS, RDMS.

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. Subtle septal flattening in systole. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is mildly dilated. Mild right atrial and right ventricular dilation. Mild to moderate RV hypertrophy. The tricuspid valve is mildly thickened with mild tricuspid regurgitation. Velocity indicative of moderate pulmonary hypertension. No pericardial/pleural effusion or cardiac masses.

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	3.9	NM	2.2	46	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	150	0.94	0.8	2.8	2.3	2.4	1.3
*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. Severe LA enlargement indicates the risk for spontaneous congestive heart failure is elevated. There is also at least moderate pulmonary arterial hypertension which should be monitored going forward. No additional issues are identified.

Syncope in a dog with this degree of structural disease is most likely cardiogenic in origin. Cardiac causes include pulmonary hypertension (moderate in this case), early CHF/poor cardiac output (very possible), rupture of a chord or LA tear (not seen), arrhythmia (possible), or vasovagal events (possible). Given the degree of LA dilation and the severity of MR, I am concerned for early CHF and decompensation as a possibility. Radiographs are recommended; however, full cardiac support should be initiated with monitoring closely for improvement/persistence of symptoms. Sildenafil is also recommended to lower pulmonary pressures. If episodes still persist, other causes should be investigated (holter monitor, neurology consult, etc.).

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. Prognosis is guarded to poor given the severity of cardiac disease and dilation and high risk for decompensation, worsening collapse episode, and/or development of spontaneous CHF.

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

Elective anesthesia is not advised.

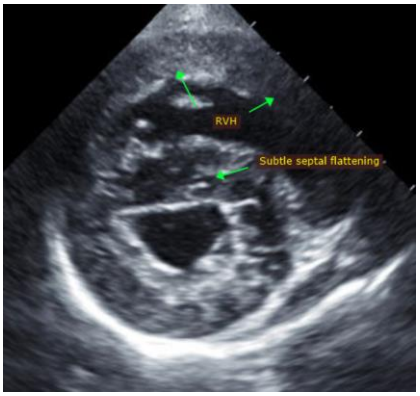
PLAN

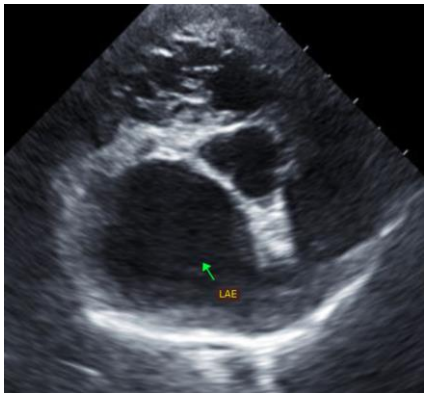
Baseline CXR is strongly recommended. Institute Pimobendan 0.3mg/kg PO q12h. Institute furosemide (Lasix) 1mg/kg PO q12h. Institute Benazepril/Enalapril 0.5mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Institute sildenafil 1-2mg/kg PO q12h. If syncope persists, further evaluation is advised.

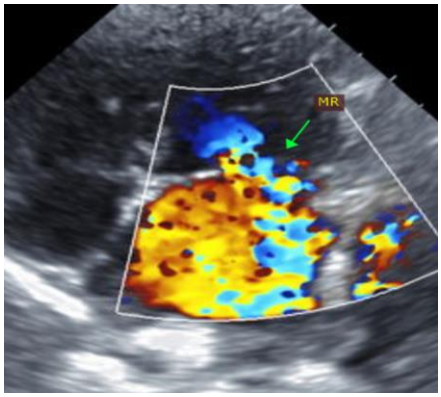
Lab work is recommended in 1-2 weeks to ensure tolerance of medications, then every 3-4 months lifelong.

A recheck echocardiogram is recommended in 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.

Maggie Machen Lamy, DVM
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