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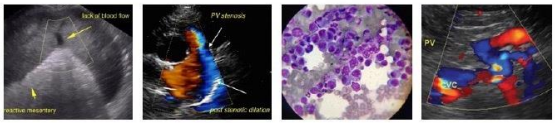


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT
Duke Bailey-Cox

SPECIES
Canine

BREED
Cockapoo

SEX
Male Neutered

AGE
15 years

WEIGHT
21.6lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Crystal Hill, RVT

HOSPITAL NAME
The Maples Animal Hospital

REFERRING VET
Dr. Kazienko

INVOICE
26889

DATE
10/13/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Increased cough and lethargy. Suspect intermittent arrhythmia.
-Current medications: Spironolactone BID, Vetmedin 2.5 BID, Benazepril 10mg 1/2 BID, Furosemide 40mg 1/4-tab BID, Pimobendan
-Pertinent previous echo findings (3/2022 MML): Severe MR, severe LAE, moderate LVE, moderate RHE, mild TR, mild PAH. LA: 3.5, LV: 4.4.

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

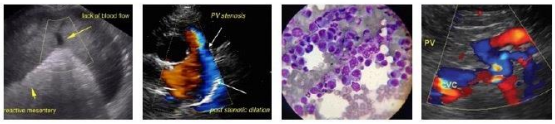
A single lead ECG is available; 50mm/s, 10mm/mV. The underlying rhythm is sinus in origin with an average heart rate of 140bpm. P for every QRS complex and vice versa. The P and QRS morphologies are positive. Isolated APCs are seen throughout with occasional brief salvos of SVT. No ventricular premature contractions, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with APCs and brief SVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with marked prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is decreased. There is severe left atrial enlargement. There is moderate left ventricular dilation. Left ventricular systolic function is hyperdynamic. Moderate right atrial and ventricular enlargement. Mild thickening of the tricuspid valve with mild TR. Suspicion for early 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 mildly dilated. The pulmonic valve is normal in appearance. Trace AI. 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	4.5	NM	2.3	2.4	39	69	0.55
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	166	1.8	0.9	9.8	3.2	4.0	2.5
*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.* 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				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)



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Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists with overall stability. While severe, the findings are similar without progressive left or right heart enlargement. Of note, the MR velocity is decreased and may suggest ventricular failure. No additional issues are identified.

Even with structural stability seen here, the reported clinical signs may reflect refractory CHF. Consider repeat CXR to assess need for additional medications. Regardless, a dose increased in Lasix is recommended to a more therapeutic level. Additionally, a trial of increased Pimobendan dosing may be beneficial. No obvious indication for additional medications at this time.

The ECG does show isolated supraventricular arrhythmias, including APCs and a brief three beat run salvo SVT. This is certainly secondary to marked structural dilation. No treatment is warranted based upon what is seen here; however, this patient is at high risk for sustained atrial fibrillation in the future. Monitor for this development, including acute syncope or lethargy.

Continued assessment of progression in the future will help predict long term outcome, however prognosis is poor at this stage (D). Unfortunately, the patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

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.

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

PLAN

Continue ACE-I and Spironolactone as prescribed. Increase Lasix to 20mg PO q12h. Increase Pimobendan to q8h dosing.

Monitor renal values in 1-2 weeks then every 3-4 months lifelong to ensure tolerance of medications.

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

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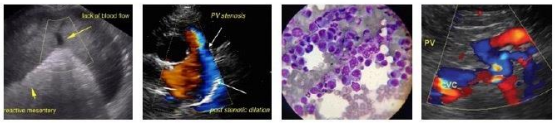

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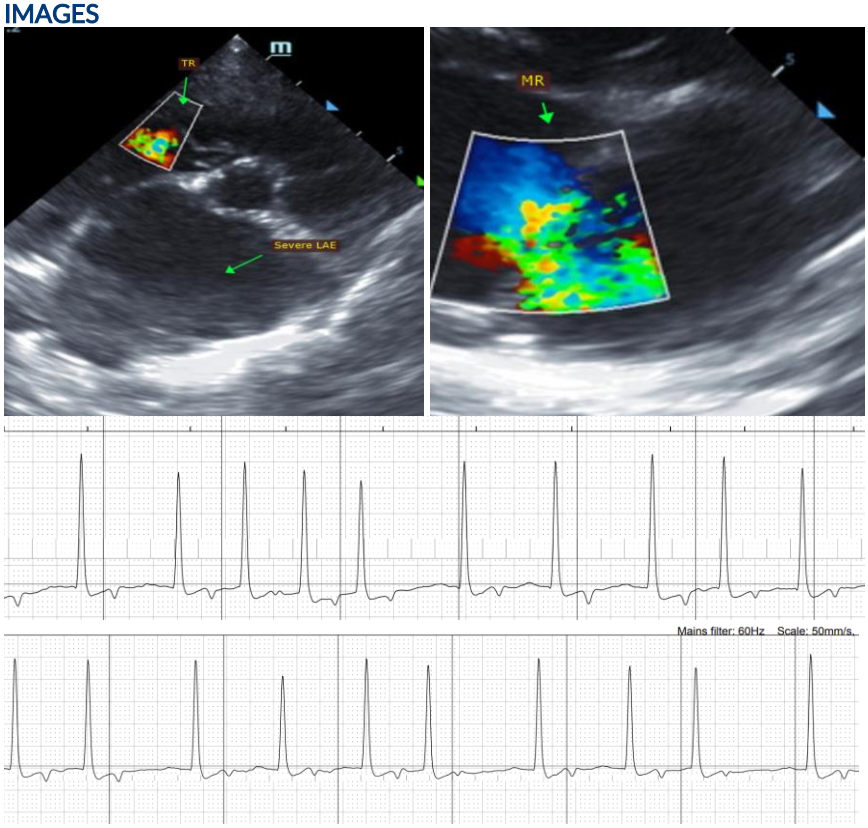
IMAGES



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
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com