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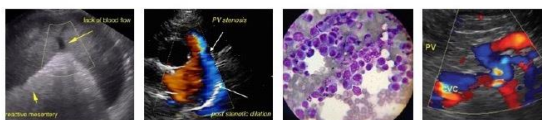

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT
Molly Carlton

SPECIES
Canine

BREED
Lab Mix

SEX
Female Spayed

AGE
8 years

WEIGHT
90.4lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Crystal Hill, RVT

HOSPITAL NAME
Beattie Pet Hospital Stoney Creek

REFERRING VET
Dr. Salib

INVOICE
21502

DATE
10/13/21

PRESENTING CLINICAL SIGNS

History: Fainting with excitement or temperature change. 5 episodes over 3-4 years.
-CXR report: Pleural effusion.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no obvious prolapse into the left atrial lumen. Trace mitral regurgitation with normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve appears largely normal although difficult to visualize extensively. Mild tricuspid regurgitation. TR velocity is borderline increased. Mild right atrial and ventricular enlargement. No obvious septal flattening. The pulmonic and aortic valves are normal in morphology and mobility. Mild MPA branch dilation. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial effusion noted. Pockets of pleural effusion. No obvious 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	NM	2.7	NM	1.3	40	76	0.5
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	NM	1.6	1.8	41.0	3.0	4.2	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				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)
Adapted from June Boon, Veterinary Echocardiography, 1998				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Hansson et al, Vet Rad and Ultrasound 2002				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The most significant finding is mild right heart and MPA enlargement. There is not significant hypertrophy, and the TR velocity is relatively normal indicating pulmonary hypertension is unlikely the cause. This may reflect a primary RV cardiomyopathy or may be secondary to an abnormality not appreciated here (such as a peripheral mass or PTE). The TR velocity confirms no significant pulmonary hypertension, making heartworm infestation unlikely. The left heart is largely normal with a small mitral leak.

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The finding of pleural effusion is certainly suspicious for right-sided CHF with any degree of right-sided enlargement; however, there is a mismatch between the degree of right heart enlargement (mild) and this development. It cannot simply be said that there is right-sided CHF without further evaluation, as typically that is seen with underlying structural pathology (such as TV dysplasia or pulmonary hypertension) and a severely dilated or overloaded cardiac appearance. Other possibilities include cor pulmonale developing secondary to a lung pathology, peripheral obstruction or a completely unrelated effusion persist. **Further diagnostic information should be obtained, including a diagnostic sample of the effusion for evaluation. Advanced imaging is also strongly recommended (focused thoracic ultrasound/thoracic CT) to further evaluate the chest cavity. Given the unusual nature of these findings, highly recommend referral to a multi-specialty center in this complicated case.**

If referral is declined, sampling/cytology should still be performed; however, if no obvious answer is obtained a trial of cardiac supportive medications seems reasonable. Prognosis is guarded prior to obtaining a more definitive diagnosis.

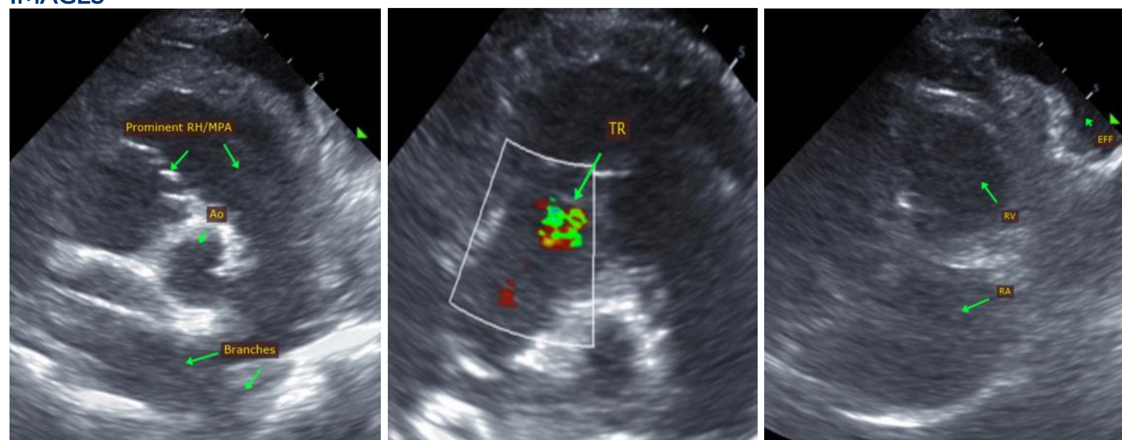
Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

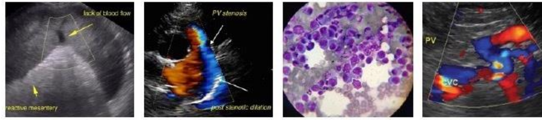
PLAN

Highly recommend referral to a Specialty facility for advanced imaging and further evaluation. If declined, continue full systemic workup, including fluid sampling. In this instance if no diagnosis is made and there is evidence of hepatic congestion, consider a diuretic trial and closely monitor response. Institute spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute Lasix 1-2mg/kg PO q12h.

Recheck pending clinical progression and further evaluation. If patient does well, recheck echocardiogram is recommended in 6 months, sooner if any development of additional clinical signs.

IMAGES





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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