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Clinical Sonography & Telecytology
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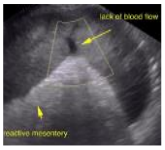
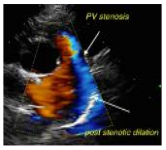
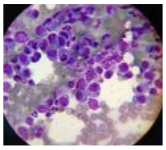
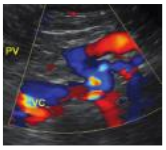

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1-800-838-4268 info@sonopath.com

PATIENT
Luna Owen

SPECIES
Canine

BREED
Poodle Mix

SEX
Female Spayed

AGE
12 years

WEIGHT
7.7lbs

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

IMAGING PERFORMED BY
G. Gunther, DVM

HOSPITAL NAME
New Frontier Animal Medical Center

REFERRING VET
Dr. Gunther

INVOICE
31943

DATE
7/19/23

PRESENTING CLINICAL SIGNS

History: Diagnosed with CHF in 2020. Normal RR. Assess prior to anesthesia.
-Current medications: Furosemide 15mg PO BID, Vetmedin 1.25mg 1 PO BID, Hydroxyzine 10mg 1 PO BID.
-Abnormal PE/Chem/CBC/UA Results: CHEM - mild azotemia (Creatinine 2.8) Electrolytes normal.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with mild left atrial dilation. Normal LV diameter with adequate myocardial function. The tricuspid valve appears thickened with mild tricuspid regurgitation. Mildly elevated velocity. Mild right atrial enlargement. Mild RV prominence. Mild MPA prominence. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

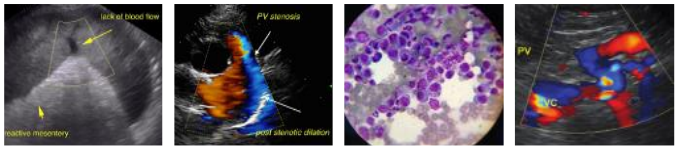
CARDIAC CHART

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	5.0	3.0	NM	1.5	44	77	0.3
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	1.0	1.0	3.5	2.1	2.4	1.4
*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				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 moderate mitral and mild tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Mild pulmonary hypertension is suspected, which is typically secondary to airway disease. No concurrent issues such as systolic dysfunction are noted in this study.



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These findings are directly discordant with the history of CHF. Further historical information is needed, such as radiographic evidence, response to Lasix, etc. My assumption is this is a case of primary respiratory disease rather than true CHF, particularly given a reportedly stable patient 3 years after the initial diagnosis. Unless CHF is confirmed in previous records, there is no obvious indication to continue Lasix at this time. Pimobendan should be continued due to the totality of the findings. Further respiratory evaluation may be beneficial if symptoms arise is the future. Cough control is recommended lifelong (hydrocodone, intermittent AI prednisone, fluoroquinolone for acute flare up, etc.). If the respiratory signs are poorly controlled, pulmonary hypertension can certainly worsen going forward.

Prognosis is guarded at this time. 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.

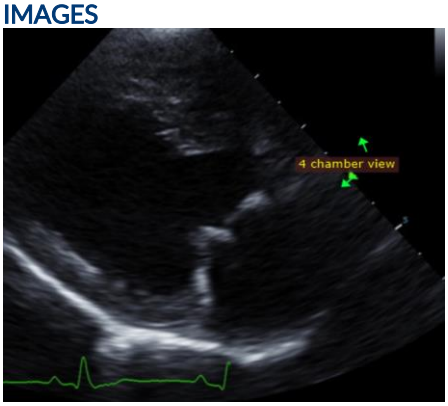
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. **Pre-oxygenate for 5-10 minutes prior to induction.** Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

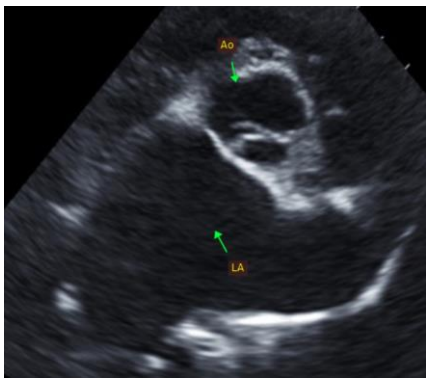
PLAN

Unless CHF is confirmed in the history, no indication to continue Lasix. A baseline blood pressure is recommended. Continue Pimobendan 0.3mg/kg PO q12h. Consider further evaluation/treatment of primary respiratory disease if indicated, including CXR, a course of Baytril, Theophylline, hydrocodone, etc. If any exertional dyspnea or collapse is noted, institute Sildenafil 1-2mg/kg PO q12h.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

IMAGES





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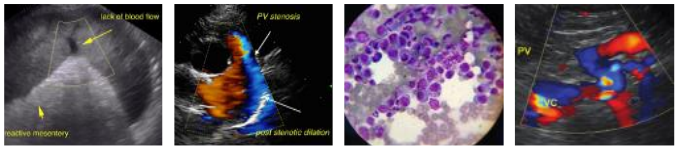

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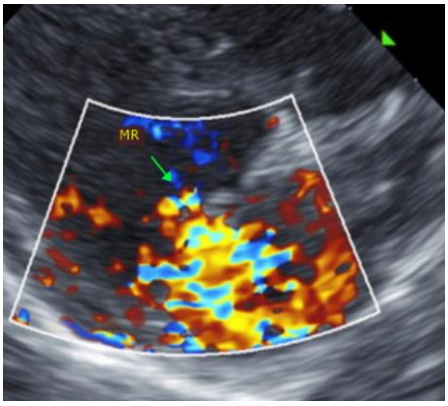

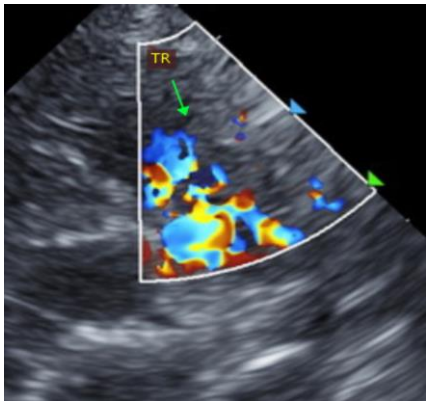

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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