SonoPath
Clinical Sonography & Telecytology
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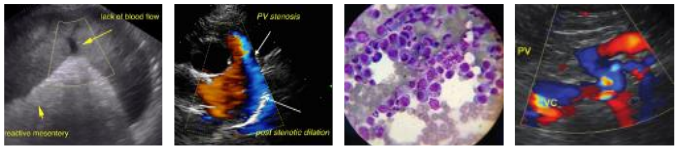

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Toshi Hewett

SPECIES
Canine

BREED
Chinese Crested

SEX
Male Neutered

AGE
11 years

WEIGHT
13.5lbs

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

IMAGING PERFORMED BY
Sands Hill Mobile Veterinary Ultrasound

HOSPITAL NAME
Whole Pets

REFERRING VET
Dr. Rubendall

INVOICE
28455

DATE
1/19/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. Heart murmur heard 8/2017. Enlarged heart on rads-2/2018. Started Pimobendan 2/2018, Lasix started post CHF incident 8/2021. Echo done 5/2021. Has been stable until RRR/coughing started 10/22. Started Cardalis-coughing decreased. Last 3-4 week decreased energy/slow to eat-bloodwork-possible early kidney disease. BG was 66, did spot check last night lowest value was 56 highest was 112. HX: Lower BG-not ot the point of seizure, etc. but with change in behavior.
-Current medications: Cardalis 20mg 12.5mg SID, Pimobendan 1.25mg BID, Lasix 12.5mg 1 tab BID SP cardiac support -1/8 tsp BID, Jing tang heart QI-1/8 tsp BID.
-Abnormal PE/Chem/CBC/UA Results: SDMA 15.6 Glucose 112.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Mild cardiomegaly. No obvious evidence of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial dilation. Normal MR velocity. Moderate LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with septal prolapse and mild TR. Normal velocity. Normal right atrial and ventricular diameter and morphology. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic and pulmonic outflow velocities with laminar flow. Mild to moderate AI. No PI. 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	6.0	2.4	1.6	2.0	52	84	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	110	1.1	0.7	6.1	2.7	3.7	1.6
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
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)

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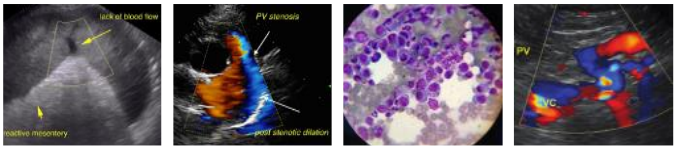

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. An aortic insufficiency is noted and a baseline blood pressure is strongly recommended. No additional issues are identified.

In light of the history and severity of disease on echocardiogram, the diagnosis of chronic stable congestive heart failure is supported and medications are warranted lifelong as below. The current chest exams do not show evidence of congestion, suggesting current clinical signs are noncardiac in origin. Early renal disease is mentioned, which may simply be secondary to chronic diuretic therapy. Follow up through an abdominal ultrasound may be warranted, depending on severity of symptoms. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time of canine patients with active pulmonary edema is 8-9 months on medications, however they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Omega fatty acid supplementation and mild salt restriction may also be of some long term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

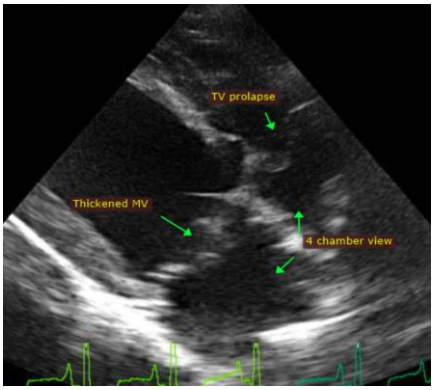
PLAN

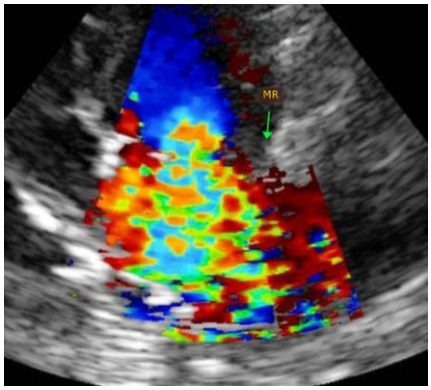
Continue Pimobendan 0.3mg/kg PO q12h. Continue Furosemide 1-2mg/kg PO q12h. Continue Spironolactone 1-2mg/kg PO q12h. Institute ACE-I 0.5mg/kg PO 12h. Further evaluation of possible renal disease and/or other causes of lethargy should be pursued.

Monitor SRRs at home. Monitor renal values and BP every 3-4 months while on diuretics. Consider hydrocodone if needed for QOL.

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

IMAGES





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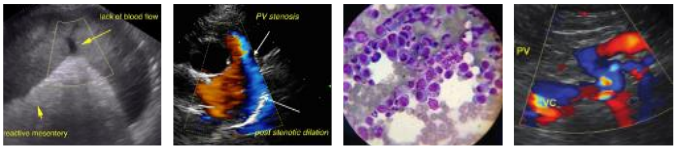

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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