



**PATIENT**

Harley Farmer

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Male Neutered

**AGE**

14 years

**WEIGHT**

7.2lbs

**INTERPRETED BY**

Maggie Machen  
 Lamy, DVM, DACVIM  
 (Cardiology)

**IMAGING PERFORMED BY**

Sara Hansen

**HOSPITAL NAME**

Countryside  
 Veterinary Service

**REFERRING VET**

Dr. Eichmann

**INVOICE**

28463

**DATE**

1/19/23

**PRESENTING CLINICAL SIGNS**

History: Harley was diagnosed with a heart murmur 11/2020. He has had some tracheal issues as well and has had issues with coughing during his senior years. He was started on 1/4 of 5 mg Benazepril on 11/20 and has continued on that. 9/22 his murmur has worsened and coughing worse and VHS getting larger so he was started on vetmedin 1.25 mg 1/2 BID. This past weekend he had labored breathing and cough was progressively worse. and was started on furosemide 12.5 mg (which she had at home) he was not examined prior to starting. He responded well over the weekend and was breathing much better. We took rads 2 days later and I have included those. I advised we continue all meds and started spironolactone as well. Tuesday evening, he had a likely syncopal episode at home. Owner is my receptionist, she could not feel a heartbeat during the episode lasting for 20 seconds. He recovered quickly.

-Abnormal PE/Chem/CBC/UA Results: Elevated WBC (neutrophilia) normal creatinine, slightly elevated BUN Heart Rate and Respiratory Rates HR 100 RR 40.

-Current medications Benazepril, Vetmedin, Spironolactone, Furosemide, Azithromycin

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

Significant cardiomegaly. obvious evidence of CHF.

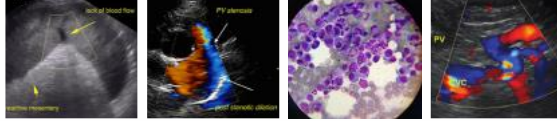
**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with moderate to severe left atrial dilation. Normal MR velocity. Mild LV dilation with hyperdynamic myocardial function. The tricuspid valve appears normal, with mild TR. 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. No AI/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	5.1	NM	1.7	1.9	63	92	0.2
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	NA	1.1	1.2	3.3	2.0	2.6	1.2
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				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)

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



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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)

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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. Moderate to severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. No additional issues are identified.

Given these findings, the diagnosis of congestive heart failure is supported and continued medications are warranted lifelong as below. The radiographs do not show congestion; however, they were taken 2 days after Lasix was started. Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. 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.

No obvious for a syncopal episode is seen in this study, unless the episode occurred with significant exertion or stress. Other possible causes should be considered, such as vaso-vagal event, intermittent arrhythmia, blood pressure swings, etc. A baseline BP and ECG are recommended.

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.

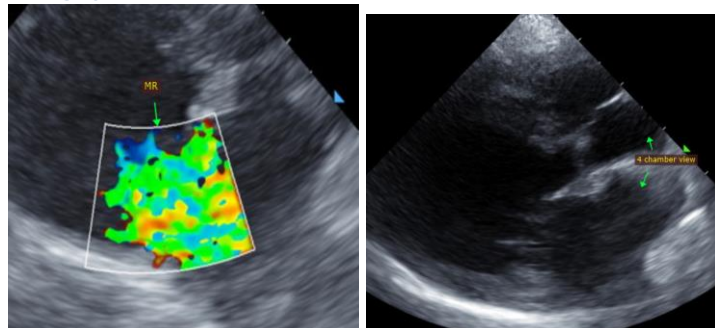
**PLAN**

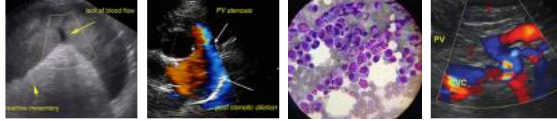
Continue Pimobendan 0.3mg/kg PO q12h. Continue Furosemide 1-2mg/kg PO q12h. continue Spironolactone 1-2mg/kg PO q12h. Continue Benazepril 0.5mg/kg PO q12h, pending BP >130mmhg.

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**





**PATIENT**

Harley Farmer

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.

**SPECIES**

Canine

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.

**BREED**

Chihuahua

Maggie Machen Lamy, DVM  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

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