



**PATIENT**

Xena Harmon

**SPECIES**

Canine

**BREED**

Chihuahua  
Dachshund Mix

**SEX**

Female Spayed

**AGE**

11 years

**WEIGHT**

12lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Harmon

**INVOICE**

28960

**DATE**

2/13/23

**PRESENTING CLINICAL SIGNS**

History: Presented 2/12/23 for dyspnea, cough, lethargy. Grade 4/6 heart murmur. Intermittent wheezing and coughing. BP: 120mmHg.  
-Current medications: Started on pimobendan (2.5 mg PO BID), furosemide (12.5 mg PO BID), and doxycycline (30 mg PO BID).  
Abnormal PE/Chem/CBC/UA Results: CBC - no abnormalities Chemistry - low creat (0.4), elevated ALP (481).  
-Radiographs; Patchy appearance to lung fields (left lung lobe most severely affected on VD view) with prominent pulmonary vessels.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Borderline LV diameter with adequate myocardial function. The tricuspid valve appears subjectively normal, with trace tricuspid regurgitation. Normal velocity. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic and mild pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

**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	2.0	NM	1.7	50	84	0.26
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	111	1.4	0.93	5.4	1.7	2.8	1.4
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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

**PATIENT**

Xena Harmon

**SPECIES**

Canine

**BREED**Chihuahua  
Dachshund Mix**SEX**

Female Spayed

**AGE**

11 years

**WEIGHT**

12lbs

**INTERPRETED BY**Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Harmon

**INVOICE**

28960

**DATE**

2/13/23

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease causing moderate mitral and trace tricuspid regurgitation. Moderate left atrial enlargement indicates the risk for spontaneous congestive heart failure is relatively low, yet may be elevated going forward. No additional issues such as pulmonary hypertension or systolic dysfunction are noted.

While it is uncommon for moderate valve disease to lead to CHF, if prior radiographs confirmed edema and the patient responded to diuretic therapy then this would support the diagnosis and medications should be continued as suggested below. If there is any question in the diagnosis (i.e., a cough in this breed is often multi-factorial in origin) or there was no response to Lasix, consider a cautious Lasix taper. A radiologist review of the films should be sought for any question, as CHF is a radiographic diagnosis. If confirmed, the average survival time of canine patients once a diuretic is initiated for CHF is 8-9 months on medications, however they generally are able to maintain a good quality of life for that period.

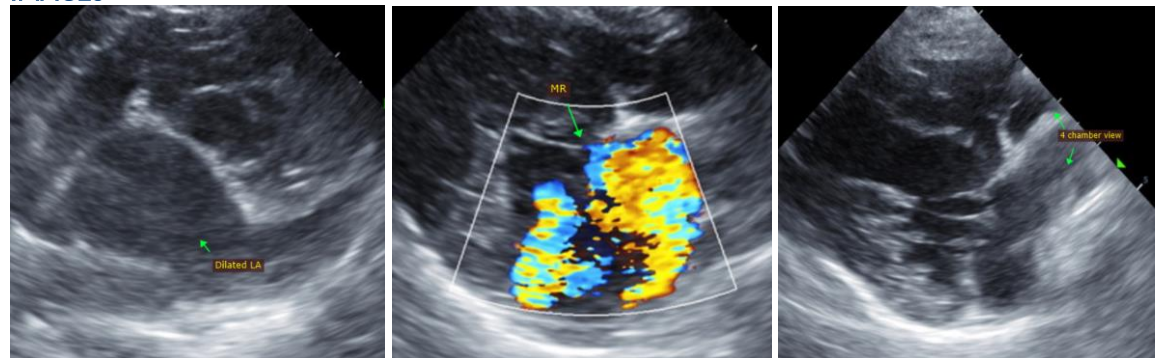
Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Serial monitoring of SRRs is recommended as the best way to screen for progression to CHF at home.

**PLAN**

Consider continue v discontinue Lasix as discussed based upon history, Radiologist CXR evaluation, response to therapy. Regardless, continue Pimobendan 0.3mg/kg PO q12h. If Lasix is continued, an ACEI should also be administered 0.5mg/kg PO q12h.

A recheck renal panel is recommended every 3-4 months lifelong if Lasix is continued.

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

**IMAGES**

The information and recommendations provided are based on the images presented by the referring

**IMAGING PERFORMED BY**

svsmobileimaging.com 309-737-3070



EDUCATIONAL TELECONSULTATION SERVICES™

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

**PATIENT**

Xena Harmon

veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

**SPECIES**

Canine

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

**BREED**

Chihuahua  
Dachshund Mix

**SEX**

Female Spayed

**AGE**

11 years

**WEIGHT**

12lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Harmon

**INVOICE**

28960

**DATE**

2/13/23