



**PATIENT**

Chalupa Wright

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Female

**AGE**

13 years

**WEIGHT**

13.5lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Kim Liedberg

**HOSPITAL NAME**

SVS Imaging WI

**REFERRING VET**

Dr. Ilyukhin

**INVOICE**

23451

**DATE**

4/5/22

**PRESENTING CLINICAL SIGNS**

History: "Collapsing" episodes when running with other dogs. Grade 2 heart murmur was noted on both sides. Radiographs revealed a silhouette around heart.  
-Abnormal PE/Chem/CBC/UA Results: WNL.

**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. Mildly increased LV diameter with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with significant septal prolapse and mild to moderate tricuspid regurgitation. Normal velocity. Normal right atrial and ventricular diameter and morphology. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

**CARDIAC CHART**

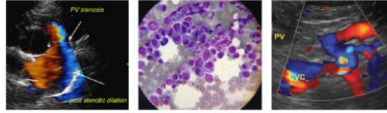
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.0	2.0	NM	2.2	42	80	0.17
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short 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	180	1.2	1.2	6.1	2.8	3.8	2.2
*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)
<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

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease causing severe mitral and mild to moderate tricuspid regurgitation. Significant left atrial enlargement indicates there is an elevated risk for spontaneous congestive heart failure going forward. No comorbidities are seen such as systolic dysfunction are seen.

Given the exertional nature of the episodes, these are likely cardiogenic in origin due to insufficient cardiac output. Early CHF cannot be ruled out and a Radiologist review of the films may be warranted, particularly given the unusual description. If the patient is having no

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respiratory signs, there is no obvious indication for Lasix therapy; however, additional cardiac support is recommended as below.

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Canine

Long term prognosis is guarded with risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

**BREED**

Chihuahua

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or worsening collapse episodes in the future.

**PLAN****SEX**

Female

Consider Radiologist review of the films. If indicated, administer furosemide 1-2mg/kg PO q12h. Regardless of symptoms, administer Pimobendan 0.25-0.3mg/kg PO q12h. Administer spironolactone 1-2mg/kg PO q12h.

**AGE**

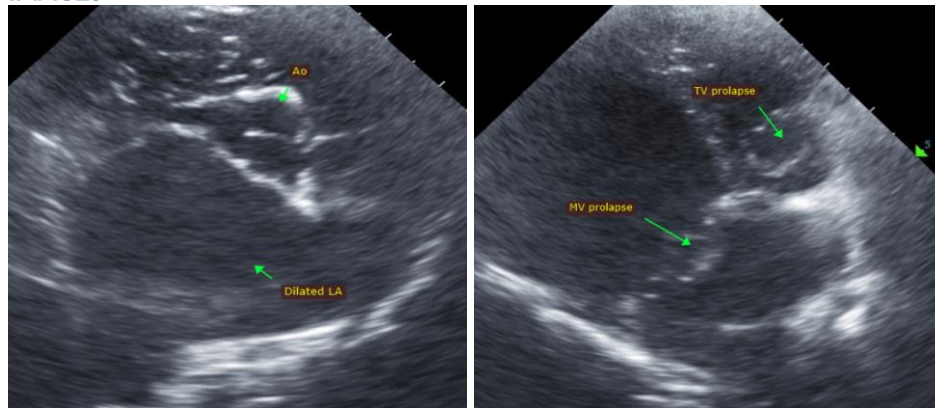
13 years

Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics. If BP >130mmHg and patient is doing well at home, institute ACEI 0.5mg/kg PO q12h. If episodes persist, further evaluation including an ECG may be indicated.

**WEIGHT**

13.5lbs

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

**IMAGES****INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

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Dr. Ilyukhin

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

**INVOICE**

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**DATE**

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