



**PATIENT**

Sigmund House

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Male Neutered

**AGE**

13 years

**WEIGHT**

11lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Diane McFadden

**HOSPITAL NAME**

Tranquility Veterinary  
Clinic

**REFERRING VET**

Dr. House

**INVOICE**

24514

**DATE**

7/19/22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Persistent cough.

-Current medications: Pimobendan 1.25mg BID, Apoquel 2.7mg SID, hydrocodone 2.5mg BID, sildenafil 5mg q8h.

-Abnormal PE/Chem/CBC/UA Results: ALKP 698 from 2/2/22.

-Pertinent previous echo findings (UPenn 10/21): Initial exam 10/4/21 (asymptomatic): LVIDd 2.9cm LVIDs 1.3cm LA 2.3; LA:AO Swe 2.1 TR 20mmHG, CVD B2 mild LVE, mod LAE rec Pimo. Represented 10/9/21 for tachypnea- CXR showed resp changes, no CHF; echo unchanged, rec cont pimo and treat with AB

**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. Moderate LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. TR velocity consistent with mild to moderate pulmonary hypertension. Right heart is mildly dilated. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious 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)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	4.8	3.4	2.0	2.5	56	88	0.15
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)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	120	0.7	0.8	5.0	2.8	3.1	1.9
*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)
*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)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease persists with severe mitral and mild tricuspid regurgitation. Compared to the prior study the LA dimension is increased comparatively, with a relatively stable LV. Regardless, significant left atrial and ventricular enlargement indicate the risk for spontaneous congestive heart failure is elevated. Mild to moderate pulmonary hypertension is noted, which is



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likely secondary to a reported cough and elevated LA pressure. No obvious additional issues are noted.

**SPECIES**

Canine

A persistent cough in a patient with severe heart disease is likely multi-factorial in origin, including mainstem bronchi compression and/or potentially some degree of upper or lower airway disease. Early CHF/pulmonary edema should also be considered; however, this is less likely based upon the reported history. Baseline CXR are recommended to ensure early congestion is not diagnosed. Recommend institute cardiac supportive medications including a weak diuretic (spironolactone), and advise close monitoring at home for need for Lasix therapy. It is unclear when or why Sildenafil was instituted, as no PAH was seen on the prior study. Mild to moderate PAH is seen here, and if the medication is well tolerated there is no obvious contraindication for it's use (albeit the benefit is also unknown). Pending response, cough suppression (up to q4-6 hours) may also be helpful for mechanical cough. **Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.**

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Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a worsening cough, labored breathing, exercise intolerance or collapse episodes. Long term prognosis is guarded to poor, with an average survival time of 8-9mo for canine patients with active pulmonary edema 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.

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**PLAN**

CXR and BP are recommended. Continue Pimobendan 0.3mg/kg PO q12h. Continue hydrocodone as prescribed. Institute Spironolactone 1-2mg/kg PO q12h. If BP is >130mmhg, institute ACE-I (benazepril or enalapril) 0.5mg/kg PO q12h. If well tolerated, reasonable to continue Sildenafil, although benefit is unknown.

A renal panel is recommended in 1-2 weeks, then every 3-4 months lifelong.

**IMAGING PERFORMED BY**

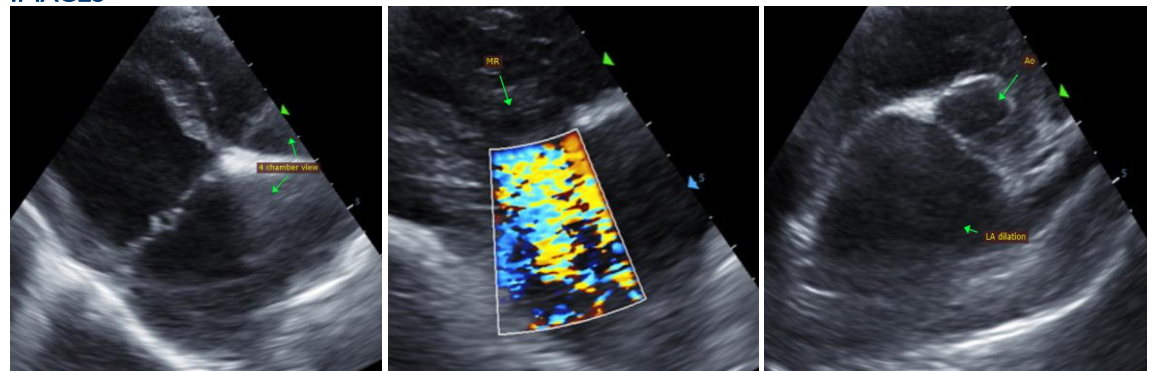
Diane McFadden

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

**HOSPITAL NAME**

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**IMAGES**



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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.



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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.

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