



## PATIENT

Pinot Tabbert

## SPECIES

Canine

## BREED

Chihuahua Mix

## SEX

Female Spayed

## PRESENTING CLINICAL SIGNS

History: Admitted to the emergency hospital due to coughing up foamy blood. Chest x-rays revealed cardiomegaly and pulmonary edema. The patient was started on furosemide, pimobendan and Fortekor (ace-inhibitor). History of eating a grain-free diet

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Severe left ventricular dilation with decreased systolic function. Decreased LV wall thickness with increased sphericity. Severe left atrial enlargement. The mitral valve is abnormal with abnormal closure, consistent with dysplasia. Moderate central mitral regurgitation. No significant tricuspid regurgitation. Mild right atrial and ventricular dilation. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; normal LVOT velocity. No aortic insufficiency. Normal pulmonic valve with trace pulmonic insufficiency seen. No pericardial or pleural effusion noted. No obvious cardiac tumors.

## CARDIAC CHART

### AGE

1 year

### WEIGHT

5.7lbs

### INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

### IMAGING PERFORMED BY

Jacque Pankatz,  
DVM

### HOSPITAL NAME

Mountaint Vista  
Veterinary Hospital

### REFERRING VET

Dr. Pankatz

### INVOICE

23550

### DATE

4/9/22

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	4.7	NA	1.9	2.5	19	32	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	NM	1.4		2.6	2.2	2.7	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)

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has severe left heart enlargement and dysfunction. The degree of dilation and overload is significant and has reportedly led to congestive heart failure. The mitral valve does not appear normal, likely consistent with dysplasia; however, this seems to be a lesser issue at this time. The right heart is mildly enlarged; however, no significant pathology is identified. No additional issues are identified.

Systolic failure can be primary in nature (DCM) or secondary to taurine deficiency, myocarditis, hypothyroidism, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. In a young atypical breed on a grain-free diet, diet-related issues are considered most likely. A



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taurine level can be submitted; however, regardless of results a taurine supplement is recommended with a diet change ASAP. It should be mentioned that this diet-related CM is quite uncommon to see in such a young animal and other possibilities should also be considered. A thorough medical history to assess for prior issues is recommended (such as parvovirus, in utero or otherwise, etc.). A cardiac troponin and thyroid level can be submitted to assess for ongoing damage to the myocardium as well.

Regardless, full cardiac support is certainly recommended as below.

Prognosis is guarded to poor at this stage in the disease process, 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. Even with diet-related dysfunction, improvement will likely be minimal at this end-stage phase of disease.

Cases of systolic failure are at high risk for malignant tachyarrhythmias (such as AF or VT), and activity restriction is advised. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Monitor for development of a cough, worsening labored breathing, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to assess response to medications and recurrence of CHF in the future.

**PLAN:**

Administer Lasix 1-2mg/kg PO q12. Administer Pimobendan 0.3mg/kg Po q12. Administer Spironolactone 1-2mg/kg PO q12h. Institute Taurine 1000mg PO q12h. Diet change and medical history as discussed.

Monitor renal panel, heart rate, and BP every 3-4 months lifelong. Once patient is deemed normotensive (blood pressure >130mmHg), institute ACE-I 0.5mg/kg PO q12h.

Recheck echocardiogram and in 6 months to reassess cardiac function sooner if issues arise.

**IMAGES**



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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Canine

**Maggie Machen Lamy, DVM**  
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