



**DATE PRESENTING CLINICAL SIGNS**

11.10.25 History: Diagnosed with CHF 09/25/2025 at an emergency facility, managed with Pimobendan and Furosemide with improvement in his breathing and coughing, however recently the coughing has remained static with no additional improvement. Recent PE: Grade II-III/VI left apical systolic heart murmur, normal rhythm, femoral pulses strong and synchronous; normal lung sounds noted on bilateral auscultation, no crackles or wheezes, no cough noted on tracheal palpation, panting with normal respiratory effort.

**PATIENT**

Jax Calfee

**SPECIES**

Canine

**BREED**

Morkie

**SEX**

MI

**AGE**

10.23.12

**WEIGHT**

14.4lbs

-CXR (09/25/2025 ER): Cardiomegaly, caudoventral interstitial pulmonary pattern, dorsal deviation of the trachea.  
Pertinent abnormal PE/Chem/CBC/UA Results: Chem10 (10/08/2025): Crea 0.4 (L), BUN 28 (H), Glob 5.1 (H), ALT 156 (H), rest WNL.  
-BP (10/08/2025): 100mmHg  
-Current medications: Pimobendan 1.875mg PO q12hrs, Furosemide 12.5mg PO q24hrs  
-Sedation used: Torbugesic.  
-Pertinent previous ultrasound results: No previous.  
-STAT: Not requested.  
-Imaging performed by: Stephanie Warga RDCS, RVT.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is normal. There is severe left atrial enlargement. There is mild left ventricular dilation. Left ventricular systolic function is hyperdynamic. Mild right atrial and ventricular dilation (subjective). Mild thickening of the tricuspid valve with mild TR. Velocity consistent with early pulmonary hypertension. The aortic valve appears trileaflet with normal mobility. Trace AI. There is normal systolic flow velocity across the aortic valve. The main pulmonary artery is normal in diameter. The pulmonic valve is normal in appearance. Flow through the RVOT/PV is normal in velocity. Trace PI. No pericardial/pleural effusion or cardiac masses are seen.

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**CARDIAC CHART**

**HOSPITAL NAME**

Essex River VC

**REFERRING VET**

Dr. Stoll

**INVOICE**

45682

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	5.7	3.0	NM	2.0	53	85	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	110	1.3	0.9	6.5	3.0	3.7	1.7
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				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)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)

Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435	30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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**

The cause of the murmur is chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. Early pulmonary hypertension is noted, which is likely secondary to chronic LA pressure elevation and active congestion. No additional issues are identified.

In light of the clinical signs, chest radiograph findings and severity of disease on echocardiogram, the diagnosis of congestive heart failure (stage C) is supported and continued medications are warranted lifelong as below, including BID Lasix therapy. If the cough continues to persist despite this change and the breathing rates are normal, Hydrocodone should certainly be considered for QOL. Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. If able to be stabilized, the average survival time of canine patients with active pulmonary edema is 8-9 months on medications; however, most are able to maintain a good quality of life for that period on medications. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

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.

**Elective anesthesia is not advised, as there is high risk for complication.** Risk: benefit ratio should be considered. Consider consultation with and/or referral to a facility with an anesthesiologist. Should you elect to proceed, cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, iso or sevoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 cage. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Moderate IV fluid restriction is recommended to avoid fluid overload, while considering comorbidities, hydration status, BP, etc. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

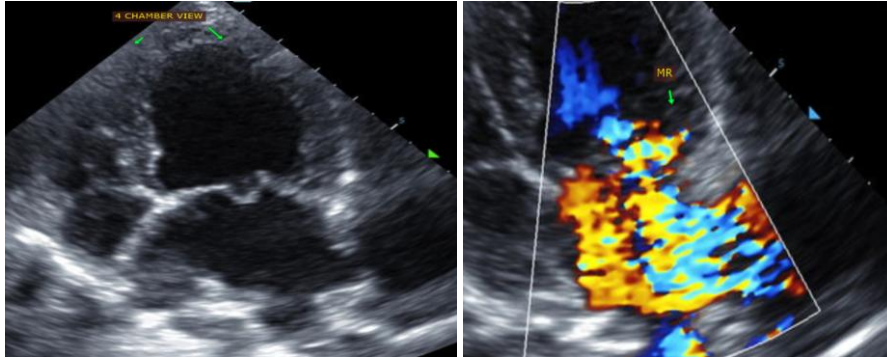
### **PLAN**

Continue Pimobendan 0.3mg/kg PO q12h. Increase Lasix to 1-2mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h.

Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics to ensure tolerance of medications. If doing well at home, renal values are reasonable and BP >130mmHg, administer ACEI 0.5mg/kg PO q12h. If the cough persists, repeat CXR and/or 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



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. 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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