



**PATIENT**

Penny Lane  
Normington

**SPECIES**

Canine

**BREED**

Miniature Schnauzer

**SEX**

Female Spayed

**AGE**

2.26.15

**WEIGHT**

10.4lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques,  
LVT

**HOSPITAL NAME**

Incline Veterinary  
Hospital

**REFERRING VET**

Dr. Sovik

**INVOICE**

45815

**DATE**

11/18/25

**PRESENTING CLINICAL SIGNS**

History: AUS performed with UC Davis June 21, 2023. Rechecking AUS due to unmanaged IBD vs. lymphoma symptoms - diarrhea, vomiting and weight loss despite hydrolyzed protein diet. Grade 6/6 heart murmur auscultated 11/3/2025, no previous echo performed. Had fainting episode, approx. 1 min before responsive and behaving normally again. BP: 103, 153, 146mmHg.  
-Abnormal PE/Chem/CBC/UA Results (11/17/2025): CBC- RBC: 5.0, Mono 1.30, CHEM- ALT 252 (previously 168), ALP >2000, Urinalysis confirms UTI with bacteriuria (rods), pyuria, and hematuria  
-Current medications: B12, Prednisone 5mg 1/2-1T SID, (Atopica) Cyclosporine 50mg SID, Tylosin 50mg SID.

**RADIOGRAPHIC FINDINGS** \*NOTE: Images submitted for supplemental information only.  
Mild cardiomegaly No obvious evidence of CHF.

**ELECTROCARDIOGRAPHIC FINDINGS**

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 100bpm with significant HR variability. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.  
ECG diagnosis: Normal sinus rhythm with respiratory variation, likely due to high vagal tone.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with mild prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Mildly increased LV diameter with adequate myocardial function. The tricuspid valve appears mildly thickened, with no tricuspid regurgitation. 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 or 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	5.7	NA	NM	1.6	44	80	0.2
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	1.1	1.0	4.7	2.2	3.7	2.1
*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)



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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**

Chronic degenerative valve disease causing moderate mitral regurgitation. Moderate left atrial enlargement indicates there is relatively low risk for imminent complication; however, risk for progression to spontaneous congestive heart failure in the future is elevated. No additional issues such as pulmonary hypertension are identified.

Given the risk for progression and results of the EPIC trial, Pimobendan is indicated in this patient as below. That being said, this patient has chronic GI issues, which must also be considered. Consider a nonflavored compounded option if there is concern for tolerance. Assessment of progression in the future will help predict long term outcome; however, prognosis is guarded at this stage (B2). Fifty percent of stage B2 patients typically develop CHF within 2-2.5 years of diagnosis. The median time to development of CHF in B2 cases treated with pimobendan is 3.5 years.

The ECG is largely normal with a respiratory sinus arrhythmia suggestive of high vagal tone. This is not unexpected in a patient with GI issues. That being said, this particular signalment is predisposed to sick sinus syndrome and ensuring the HR responses adequately to light exertion or stress is recommended.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

Once on the medication for 3-5 days, anesthetic risk is considered mildly elevated. Premedicate with a vagolytic and ensure exuberant response prior to proceeding. Cardiac protective drug choices (opioid/benzodiazepine premedication, Propofol or alfaxalone induction, iso or sevo gas) are recommended. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload.

**PLAN**

Consider HR response to exertion or stress +/- an atropine challenge if indicated. Institute heart muscle support Pimobendan 0.25-0.3mg/kg PO q12h.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

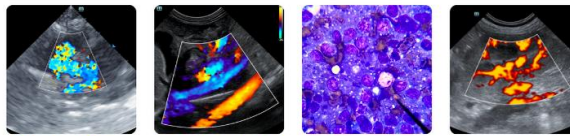
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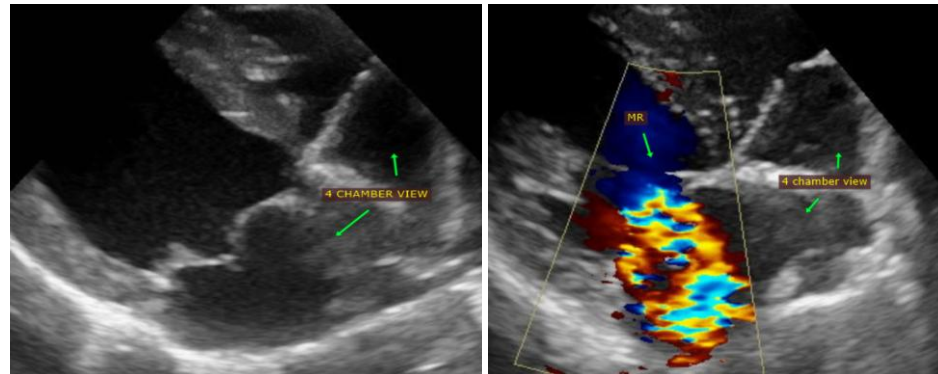
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Maggie Machen Lamy, DVM  
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