



**PATIENT**

PJ Wallin

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Male Neutered

**AGE**

5.16.11

**WEIGHT**

11.7lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Andi Parkinson, RDMS

**HOSPITAL NAME**

North Laurel Animal  
Hospital

**REFERRING VET**

Dr. Nelson

**INVOICE**

22655

**DATE**

2.17.22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Heart murmur grade 4/6.

-Pertinent abnormal PE/Chem/CBC/UA Results: 9/28/21: Bloodwork WNL.

-Current medications: Simparica, Enalapril 1.25mg PO q. 24h since 12/2020.

-Blood pressure: Average systolic 139mmHg.

-Sedation used: Not required to complete full diagnostic ultrasound.

-Pertinent previous ultrasound results (12-23-2020 MML): Mild to moderate MR, mild LAE. LA: 2.0, LV: 2.9.

-STAT: Not requested.

**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. Mild to moderate eccentric mitral regurgitation with mild left atrial dilation. Normal MR velocity. Borderline increased LV diameter with hyperdynamic myocardial function. The tricuspid valve appears subjectively normal, with trace tricuspid regurgitation. Mildly elevated velocity consistent with early pulmonary hypertension. 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  | 6.0           | 3.0           | NM                  | 1.6                     | 31                              | 60                                       | 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  | 155           | 0.9           | 0.7                 | 5.3                     | 1.9                             | 2.6                                      | 1.8                                      |
| *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)                               |
|  |               |               |                     | 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

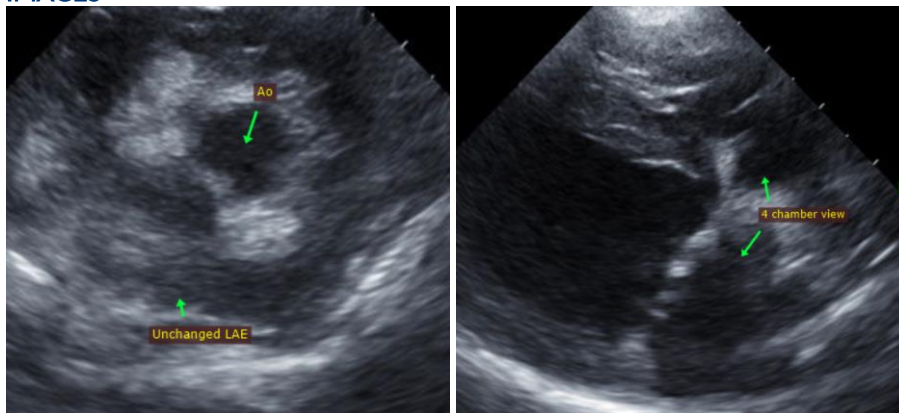
Chronic degenerative valve disease causing mild to moderate mitral and trace tricuspid regurgitation persists. Compared to the prior study, the left heart is stable with unchanged LA and LV dimensions. A small tricuspid leak has developed with evidence of early pulmonary hypertension. This is of known significance in an asymptomatic dog. No additional issues are identified.

Given these findings, no cardiac medications are clearly indicated. Continued assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

## 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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