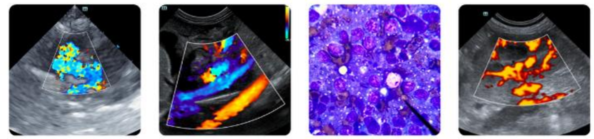
# SonoPath

FOSTERING THE ART OF VETERINARY MEDICINE™

SonoPath.com info@sonopath.com 1.800.838.4268



*Clinical Sonography & Telecytology*

*Educational Teleconsultation Services™*

**PATIENT**

Apollo Cruz

**SPECIES**

Canine

**BREED**

Labrador Retriever

**SEX**

Male Neutered

**AGE**

9.4 years

**WEIGHT**

57.7lbs

**INTERPRETED BY**

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Christensen, DVM

**HOSPITAL NAME**

Tranquility Veterinary Clinic

**REFERRING VET**

Dr. Christensen

**INVOICE**

46994

**DATE**

2/25/26

## PRESENTING CLINICAL SIGNS

History: Elevated BNP: 7309. Mild increase in Creat: 1.6. BP: 104mmHg. Sedated with Gabapentin, Trazadone, Midazolam and Torb. Assess prior to dental.

## ECHOCARDIOGRAM FINDINGS

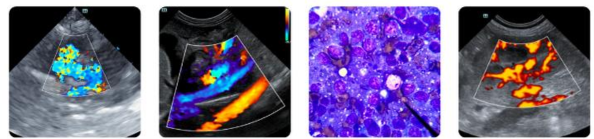
2D, m-mode, color flow and doppler imaging is available. Mild left ventricular dilation in diastole with moderate dilation in systole (LVIDdN: 1.88, LVIDsN: 1.50). Decreased LV wall thickness with mild increased sphericity. Mild left atrial enlargement. The mitral valve appears normal in form and function, with no obvious prolapse into the left atrial lumen. Trace central mitral regurgitation. No 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 no pulmonic insufficiency seen. No pericardial or pleural effusion noted. No obvious cardiac tumors. Bradycardia throughout.

## 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 | NM | NA | 1.4 | 1.5 | 14 | 20 | 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 | 0.7 | 0.8 | 26.2 | 3.4 | 4.9 | 4.2 |
| *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 | | | | 40 | 2.62 (5.2) | 5.48 (6.1) | 3.96 (5.4) |
| Clin North Am 15:1177, 1995 | | | | 50 | 2.88 (7.1) | 6.07 (8.3) | 4.46 (7.4) |

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has evidence of early cardiomyopathy and systolic dysfunction. There is dilation and volume overload of both the left and right heart, with moderate LV enlargement and mild LA dilation. Given the signalment of the patient there is high risk for progression going forward. No significant valve leaks are identified, and the remainder of the study is unremarkable. It should be noted that this patient was heavily sedated, and bradycardia was noted throughout the study. An anesthetics used are considered cardiac protective and should



SonoPath.com info@sonopath.com 1.800.838.4268

**PATIENT**
Apollo Cruz

**SPECIES**
Canine

**BREED**
Labrador Retriever

**SEX**
Male Neutered

**AGE**
9.4 years

**WEIGHT**
57.7lbs

**INTERPRETED BY**
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

**IMAGING PERFORMED BY**
Christensen, DVM

**HOSPITAL NAME**
Tranquility Veterinary Clinic

**REFERRING VET**
Dr. Christensen

**INVOICE**
46994

**DATE**
2/25/26

not have a significant impact on LV function. That being said, reestablishing a brief baseline in the absence of sedation may be helpful.

Systolic failure can be primary in nature (DCM) or secondary to taurine deficiency, myocarditis, hypothyroidism, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. While primary disease is certainly suspected in a Lab, consider possible contributing issues such as an atypical diet or hypothyroidism.

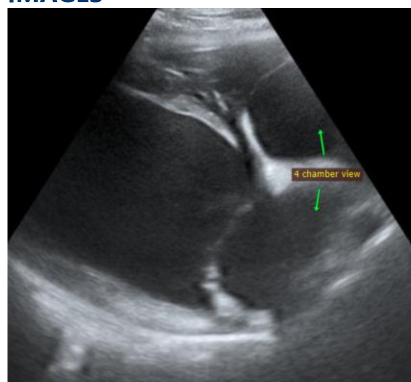
Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

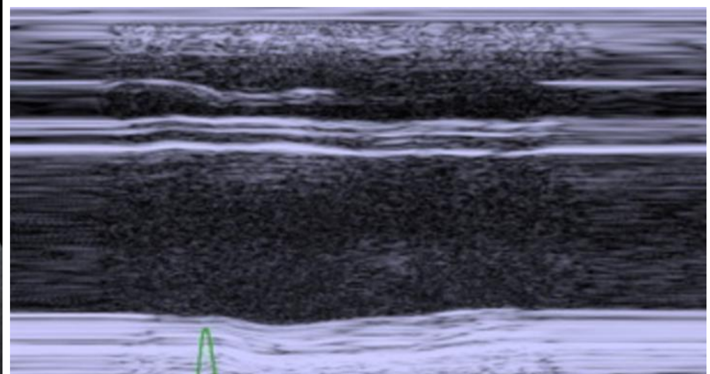
Anesthetic risk is considered elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively 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. Avoid Alpha-2 Agonist lifelong.

**PLAN**
Baseline BP is recommended. Institute Pimobendan 0.3mg/kg PO q12h. If BP >130mmHg, institute ACEI 0.5mg/kg PO q12h. Diet history/thyroid status as discussed. Consider reassessing the LV in the absence of sedation.

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

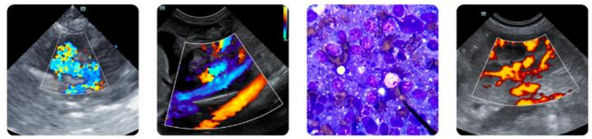
**IMAGES**



**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





**PATIENT**

Apollo Cruz

**SPECIES**

Canine

**BREED**

Labrador Retriever

**SEX**

Male Neutered

**AGE**

9.4 years

**WEIGHT**

57.7lbs

**INTERPRETED BY**

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

**IMAGING PERFORMED BY**

Christensen, DVM

**HOSPITAL NAME**

Tranquility Veterinary Clinic

**REFERRING VET**

Dr. Christensen

**INVOICE**

46994

**DATE**

2/25/26

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**
**Diplomate of the American College of Veterinary Internal Medicine (Cardiology)**
info@sonopath.com