



**PATIENT**

Bruno Principe

**SPECIES**

Canine

**BREED**

Chihuahua Mix

**SEX**

Male Neutered

**AGE**

7 years

**WEIGHT**

7.2lbs

**PRESENTING CLINICAL SIGNS**

History: Bruno was noted to have a heart murmur in April. He has a history of leptospirosis non 2013. Bruno has had a cough for some time that has gotten worse with time. His appetite waxes and wanes but his activity level remains good. On exam, grade IV/VI systolic murmur. BP: 100mmHg x 3 (sedated).

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and Doppler imaging is available.

**Left ventricle:** LV is mildly dilated with hyperdynamic myocardial function.

**Left atrium:** The left atrium is severely dilated with a horizontal component.

**Mitral valve:** Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation, normal velocity.

**Aortic valve/Aorta:** The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.

**Right ventricle:** Mild RV enlargement.

**Right atrium:** Mild RA enlargement.

**Tricuspid valve:** The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. TR velocity consistent with mild pulmonary hypertension.

**Pulmonic valve/Pulmonary artery:** The pulmonic valve is normal in morphology and mobility. Normal pulmonic outflow velocities. No pulmonic insufficiency.

**Pericardium/other:** No pericardial or pleural effusion noted. No obvious cardiac masses

**Heart rhythm:** ECG reveals a sinus rhythm with an average HR of 130bpm.

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGING**

**PERFORMED BY**

Pamela Harrigan,  
RDCS

**HOSPITAL NAME**

Mass Veterinary Services

**REFERRING VET**

Dr. Masloski

**INVOICE**

25994

**DATE**

8/24/22

**2-Dimensional Measurements**

Ao diam (cm)	1.0
LA diam (cm)	2.2
LA:Ao (Swe)	2.2
IVS thickness (cm)	0.47
LVID diastole (cm)	2.9
PW thickness (cm)	0.48
LVID systole (cm)	1.9
FS (%)	34

**Doppler Measurements**

PV Vmax (m/s)	0.42
AoV Vmax (m/s)	1.0
MR Vmax (m/s)	4.7
TR Vmax (m/s)	3.2
TR PG (mmHg)	42

**INTERPRETATION OF THE FINDINGS**

The murmur is due to 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 going forward. Early PAH is documented, which is not surprising in a coughing dog with severe LA dilation. No additional issues such as systolic dysfunction are noted.

A cough in this patient with this degree of heart disease is likely multi-factorial in origin, including mainstem bronchi compression and/or potentially some degree of upper or lower airway disease given the breed. Early CHF/pulmonary edema should also be considered; however, this is less likely based upon the chronic cough history. Chest radiographs should be considered. Recommend institute cardiac supportive medications including a weak diuretic (Spironolactone) and advise close monitoring at home for need for Lasix therapy. Pending response, cough suppression (up to q4-6 hours) may also be helpful for mechanical cough. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.



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Long term prognosis is guarded; however, I am hopeful we can stabilize the patient for some time on medications. Once CHF develops, they are generally able to maintain a good quality of life for an average of 8-12 months. Patient will always be at risk for progression to CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

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**RECOMMENDATIONS**

- Consider CXR.
- Institute Pimobendan 0.3mg/kg PO q12h.
- Institute Spironolactone 1-2mg/kg PO q12h.
- Consider hydrocodone with homatropine for QOL (0.2-0.4mg/kg PO up to q4-6 hours PRN for cough; available in 5/1.5mg tabs and 5mg/5ml liquid suspension).
- Consider a course of Baytril depending on severity of the cough.
- Elective anesthesia is not advised.
- 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. Monitoring of sleeping breathing rates is the best way to screen for progression to CHF at home.

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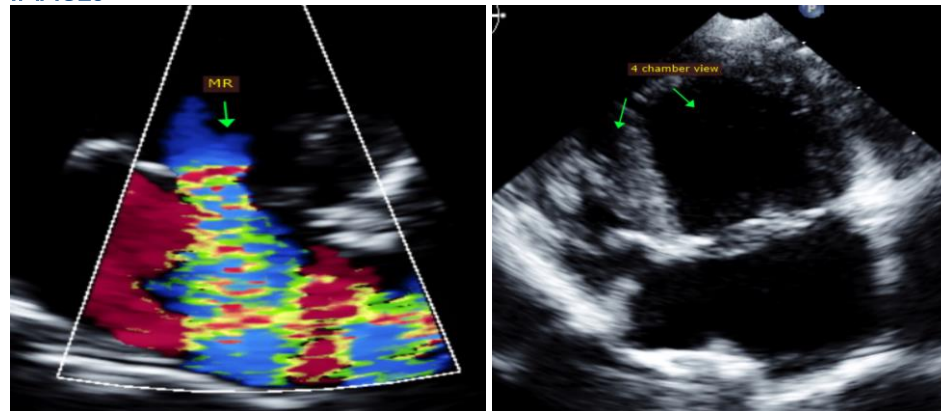
**PLAN**

- A renal panel is recommended in 1-2 weeks, then every 3-4 months lifelong. If doing well and BP is >130mmHg, institute ACE-I 0.5mg/kg PO q12h.
- A recheck echocardiogram is recommended in 4-6 months to screen for progression, sooner if clinical signs arise.

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM  
DACVIM (Cardiology)

**IMAGES**



**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS

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**SonoPath**  
Clinical Sonography & Telectology  
EDUCATIONAL TELECONSULTATION SERVICES™  
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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.

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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.

**BREED**

Chihuahua Mix

Maggie Machen Lamy, DVM  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

**SEX**

Male Neutered

**Echocardiogram performed by:** Pamela Harrigan, RDCS  
Pet Animal Ultrasound Service (4paus.com)

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