



**PATIENT**

Momma Kuylen

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Female

**AGE**

11 years

**WEIGHT**

8lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Jessie Evoniuk, DVM

**HOSPITAL NAME**

State Avenue Vet  
Clinic

**REFERRING VET**

Dr. Evoniuk

**INVOICE**

20994

**DATE**

9/13/21

**PRESENTING CLINICAL SIGNS**

History: Always breathes heavy, didn't sleep last night and was very restless. Has had a few episodes where patient was "upside down blue and not breathing". Grade 3/6 murmur. HR: 168bpm.  
-Current medications: Lasix 12.5mg and Vetmedin 1.25mg, Clavamox provided this AM.  
-Radiographs: cardiomegaly, no LSHF noted, pulmonary arterial enlargement. Harsh lungs.  
-Abnormal lab results: HW NEGATIVE.

**ECHOCARDIOGRAM FINDINGS** \*Limited images included; study incomplete

Brief 2D and color flow imaging is available. Thickening of the anterior mitral valve leaflet without obvious prolapse into the left atrial lumen. Mild mitral regurgitation suspected; limited visualization. No left atrial dilation. Decreased LV diameter with adequate myocardial function. Increased LV wall thickness consistent with pseudohypertrophy. The tricuspid valve is not evaluation. PAH is not assessed for. No obvious RV/RAE. The pulmonic and aortic valves are not assessed. Normal pulmonic outflow velocities with laminar flow. No pericardial or pleural effusion noted. No obvious cardiac masses.

**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	NM	NM	1.1	54	90	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	NM	1.2	3.6	105	1.3	0.6
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Chronic degenerative valve disease causing mild mitral regurgitation is suspected. This is a limited study, without a full image set. What can be said is the LA and LV are small in dimension, ruling out left-sided CHF as a cause of the signs. The LV walls are increased with a small LV chamber which is most consistent with pseudohypertrophy; this typically develops secondary to volume depletion following Lasix administration. Concurrent systemic hypertension should be ruled out as a contributing factor once the patient is stabilized. Pulmonary hypertension is not assessed for



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in this image set, and cannot be ruled out (PA enlargement noted on CXR). A full study should be performed once the patient is stabilized.

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Given these findings, **the clinical signs are certainly non-cardiac in origin and Lasix should be immediately discontinued.** Primary respiratory diseases are considered more likely particularly given a chronically abnormal breathing pattern. Highly recommend chest radiographs to further evaluate the lung fields with a Radiologist review if possible. No obvious indication for Lasix or Pimobendan at this time. Additionally, cautious fluid resuscitation should be considered depending on patient's clinical hydration status, renal values, etc. Without assessing for PAH, there is not a clear indication for Sildenafil therapy at this time. Should the patient experience symptoms of PAH (exertional dyspnea or collapse), a trial can be instituted to determine if there is a positive clinical response. The best way to approach a respiratory case such as this would be primary airway treatment and support (oxygen if needed, course of Baytril or similar AB, bronchodilators if needed, etc).

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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.

## WEIGHT

8lbs

From a cardiac standpoint, anesthetic risk is considered mild if needed once respiratory disease is stabilized. 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.

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Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

## PLAN

Discontinue Lasix and Pimobendan. Consider fluid therapy, oxygen, etc as indicated. Highly recommend chest radiographs review; consider Baytril, respiratory therapy as discussed. If exertional dyspnea or collapse are noted, a Sildenafil trial can be safely utilized; administer 1-2mg/kg PO q8h and assess response.

## IMAGING PERFORMED BY

Jessie Evoniuk, DVM

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

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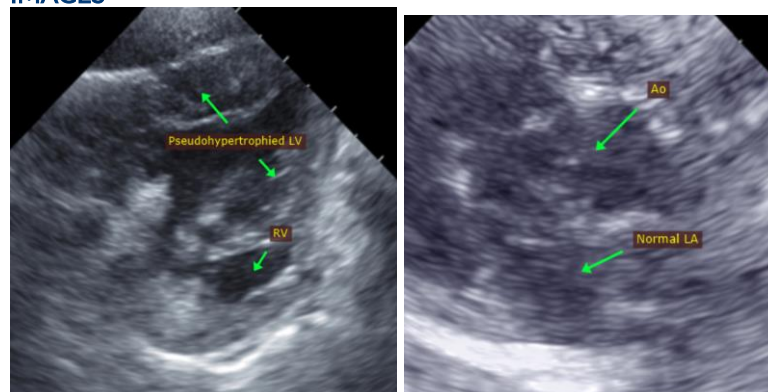
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## IMAGES





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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.

**SPECIES**

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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

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

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