

**PATIENT**

Mike Perez

**PRESENTING CLINICAL SIGNS**

History: Concern for right-sided CHF with large volume ascites.  
 -Current medication: Sotalol 1/4 80mg tab, Hematopan Spironolactone 25mg BID x 7 days.

**SPECIES**

Canine

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Marked left ventricular dilation with diminished systolic function. Decreased LV wall thickness with increased sphericity. Severe left atrial enlargement. The mitral valve appears normal in form and function, with no obvious prolapse into the left atrial lumen. Mild central mitral regurgitation secondary to annular stretch. Decreased MR velocity. Mild tricuspid regurgitation. Normal TR velocity. Severe right atrial and ventricular dilation. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; decreased LVOT velocity. No aortic insufficiency. Normal pulmonic valve with no pulmonic insufficiency seen. Decreased RVOT velocity. No pericardial or pleural effusion noted. Large volume ascites. No obvious cardiac tumors.

**BREED**

Boxer

**SEX**

Male Neutered

**AGE**

3 years

**CARDIAC CHART**

**WEIGHT**

56.2lbs

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	4.0	NA	NM	2.8	5	12	1.5
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)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	NM	0.4	0.4	25.5	4.3	4.4	4.2
*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)
*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)

**INTERPRETED BY**

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

**IMAGING PERFORMED BY**

G. Ferrer, DVM

**HOSPITAL NAME**

Paseos Veterinary Center

**REFERRING VET**

Dr. Quinones

**INVOICE**

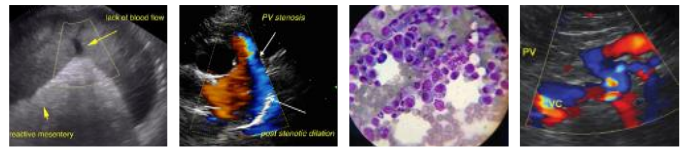
22086

**DATE**

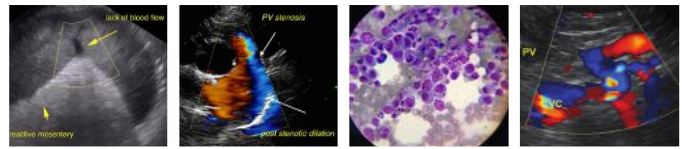
11/18/21

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Unfortunately, this patient has marked biventricular cardiomyopathy and systolic dysfunction. This is causing dilation and volume overload of both the left and right heart resulting in insufficiency of the mitral and tricuspid valves. The severity of dysfunction and pump failure is severe and confirms the origin of ascites is congestive heart failure. Patient will always be at risk for right and/or left-sided CHF, development of arrhythmias/syncope and/or sudden death going forward.



<b>PATIENT</b>	Systolic failure can be primary in nature (DCM or ARVC) or secondary to taurine deficiency, myocarditis, hypothyroidism, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. While primary disease is possible in a young Boxer, consider testing for primary causes that may be treatable such as taurine deficiency. A <b>thorough diet history</b> should be obtained given the recent correlation with grain free/boutique brand/exotic ingredient diets.
Mike Perez	
<b>SPECIES</b>	
Canine	
<b>BREED</b>	
Boxer	The attached ECG during the study shows a regular rhythm, although the heart rate is significantly elevated. A full baseline ECG is recommended as tachycardia alone can lead to development of right sided heart failure (tachycardia-induced cardiomyopathy). Additionally, the patient is reportedly on Sotalol without further explanation. Sotalol is a negative inotrope and there may be a better option depending on patient history and need for this medication. <b>Further historical information and ECG evaluation is strongly advised.</b>
<b>SEX</b>	
Male Neutered	Regardless of cause, prognosis is poor at this stage in the disease process, with an average survival time of <6 months. The only treatable cause of systolic failure is diet/taurine deficiency, which is uncommon on commercially formulated dog foods. If the diet is of concern, highly recommend immediate diet change and taurine supplement regardless of blood taurine results. Please see the FDA website for more information. If the patient does not respond to medical therapy and QOL suffers, euthanasia should be elected.
<b>AGE</b>	
3 years	
<b>WEIGHT</b>	
56.2lbs	<b>Immediate hospitalization and lifelong cardiac supportive medications</b> are recommended as below due to active decompensation, tachycardia and patient instability. A therapeutic abdominocentesis should be performed, and repeated when the patient becomes inappetent or uncomfortable in the future. Cases of systolic failure are at high risk for malignant tachyarrhythmias (such as VT or rapid AF) and sudden death, and this should be expressed to the owner. Activity restriction is advised.
<b>INTERPRETED BY</b>	
Maggie Machen Lamy, DVM, DACVIM (Cardiology)	Elective anesthesia is not advised due to high risk for complications.
<b>IMAGING PERFORMED BY</b>	
G. Ferrer, DVM	Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, worsening labored breathing, abdominal distention, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to assess response to medications and recurrence of CHF in the future.
<b>HOSPITAL NAME</b>	<b>PLAN:</b>
Paseos Veterinary Center	Immediate ECG is advised. Consider use of Sotalol versus mexiletine versus discontinue overall. Immediate hospitalization is recommended for ECG monitoring, abdominocentesis, and supportive care. Oral medications are as follows: Initiate Lasix 1-2mg/kg PO q8h for 3-5 days, if doing well at that time decreased to q12h. Institute Spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute taurine 1000mg PO q12h. Diet history/change as discussed.
<b>REFERRING VET</b>	
Dr. Quinones	Reassess ECG, blood pressure and renal values in 1-2 weeks, then every 3-4 months life-long. Do not utilize an ACE-I in this patient due to likely hypotension. If QOL remains low, euthanasia should be considered in this end-stage case.
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22086	A recheck echocardiogram is recommended in 4-6 months to screen for progression, sooner if clinical issues arise in the interim.
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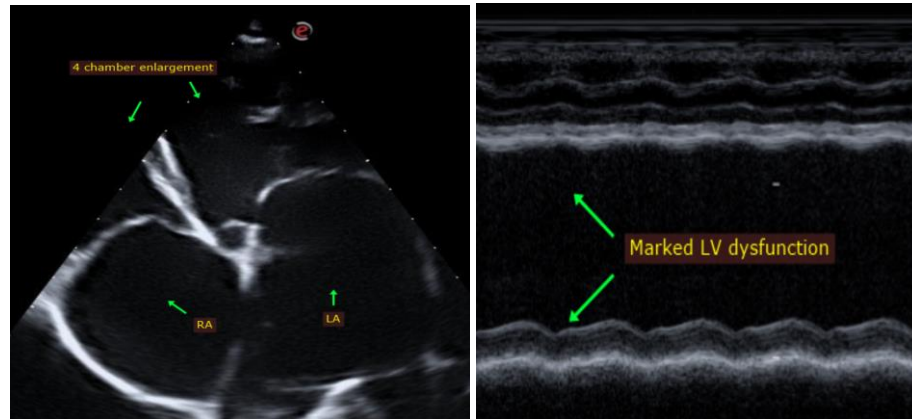
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**IMAGES**



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.

**Maggie Machen Lamy, DVM**  
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