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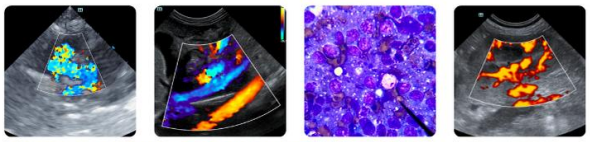


Clinical Sonography & Telecytology
Educational Teleconsultation Services™

PATIENT

Walker Arends

SPECIES

Canine

BREED

Labrador Retriever

SEX

Male Intact

AGE

8.2 years

WEIGHT

35.7

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Greg Kuhlman, DVM

HOSPITAL NAME

Red River Animal Emergency Hospital & Referral Center

REFERRING VET

Dr. Kuhlman

INVOICE

46903

DATE

2/19/26

PRESENTING CLINICAL SIGNS

History: Presented for weight less, decreased energy, and decreased appetite. Fluid in his abdomen. AUS performed and suggested that the fluid was not likely from the abdomen. He has not been eating much since his last visit. He has been shivering since yesterday. Has a perineal hernia on the right. No heart murmur was auscultated, but it was difficult to hear the heart. No coughing or sneezing has been observed. Started on 10mg Pimobendan BID, Furosemide 80 mg QID x 2 days, then 80mg BID.
-Abnormal PE/Chem/CBC/UA Results (2/19/26): Significant ascites. The heart is difficult to auscultate. Heart rate was 180bpm, resp rate 60 rpm, efforted breathing with abdominal effort. Snap 4Dx negative. On Heartgard. (2/12/26): ascites fluid cytology modified transudate; low cellularity. Chem: TP 5.1 g/dL, ALT 199 U/L, Cl 107 mmol/L; CBC: Monocytes 1.46 K/uL, PDS 8.5 fl. BP: 102mmHg.

ECHOCARDIOGRAM FINDINGS

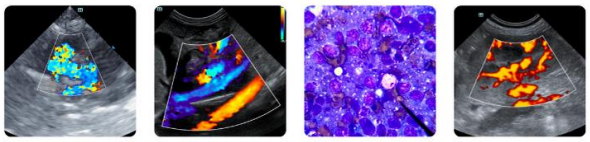
2D, m-mode, color flow and doppler imaging is available. Severe left ventricular dilation with diminished systolic function. Increased EPSS and increased sphericity. Decreased LV wall thickness. Severe left atrial enlargement. The mitral valve appears mildly thickened, with no obvious prolapse into the left atrial lumen. Mild central mitral regurgitation. Decreased MR velocity. The tricuspid valve appears mildly thickened. Moderate right atrial and ventricular dilation. Mild tricuspid regurgitation. Normal velocity. Normal velocity. The aortic valve is normal with decreased outflow velocity. No AI. Normal pulmonic valve with decreased outflow velocity. No PI. Scant pericardial effusion. No pleural effusion noted. No obvious cardiac tumors.

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	4..0	2.1	NM	2.2	6	10	NM
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT**	**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	0.6	0.5	35.7	4.5	7.4	7.0
*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)
				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)

Note: All measurements based upon multi-modal images and methods. An average value is reported.

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



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has end-stage cardiomyopathy and systolic dysfunction. This is causing dilation and volume overload of both the left and right heart and significant biatrial dilation. Moderate MR and mild TR are identified which are likely secondary to dilation. No concurrent issues are seen**. A full screening ECG is recommended, as there is suspicion for an arrythmia contributing in this case.**

Systolic failure can be primary in nature (DCM) or secondary to taurine deficiency, hypothyroidism, myocarditis, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. In a senior lab, primary DCM is certainly possible. Consider screening for any contributing issues, such as an atypical diet or hypothyroidism. Additionally, supplementing with Taurine is recommended. Thyroid status can be assessed, a cTnI submitted, etc., however prognosis at this stage is unchanged.

Given the severity of disease seen here in addition to reported ascites, biventricular CHF is suspected, and treatment is recommended as below. No dyspnea is reported; however, should the patient become unstable, highly recommend hospitalization for oxygen support and IV therapy. Even if the response to medications is good, this patient will always be at high risk for recurrent CHF, development of syncope, malignant arrhythmias and/or sudden death going forward. The prognosis is poor at this stage in the disease process, with an average survival time of <6 months.

Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Moderate activity restriction is advised. 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.

PLAN:

If patient appears unstable or tachypneic, highly recommend continued hospitalization for supportive care. **A baseline ECG is recommended.** Recommend the following oral medications: Institute aldosterone antagonist Spironolactone 1-2mg/kg PO q12h. Institute diuretic furosemide 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute taurine supplement 1000mg PO q12h. Consider diet history, thyroid status, etc.

Recommend recheck renal panel and blood pressure in 1-2 weeks to ensure tolerance to medications. If BP >130mmHg and doing well at home, institute ACEI 0.5mg/kg PO q12h at that time.

Recheck echocardiogram in 6 months, sooner if problems arise in the interim.

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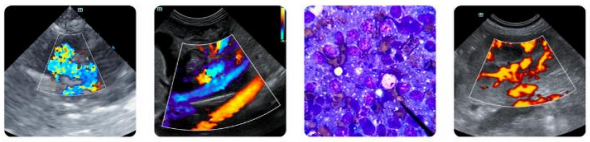

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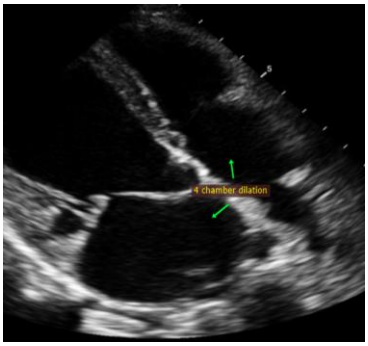
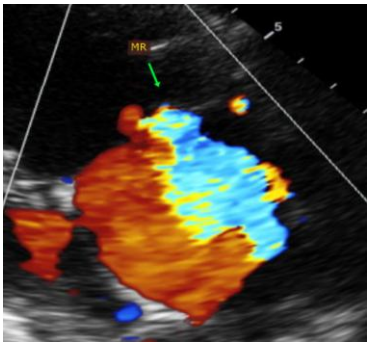
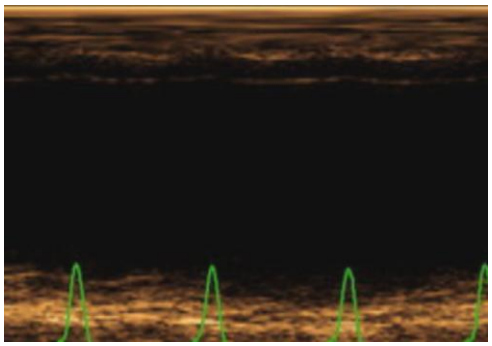
IMAGES







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