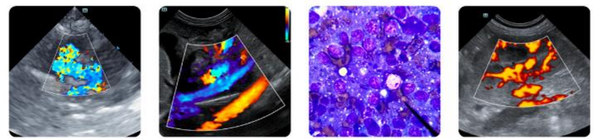


PATIENT

Zeus O'Neal

SPECIES

Canine

BREED

German Shepherd

SEX

Male Neutered

AGE

4 years

WEIGHT

92lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Gudrun Gunther, DVM

HOSPITAL NAME

New Frontier Animal Medical Center

REFERRING VET

Dr. Solonynka

INVOICE

47711

DATE

4/28/26

PRESENTING CLINICAL SIGNS

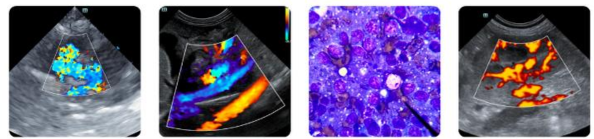
History: Productive cough started last week. 4/25 after long coughing fit O noted pale gums that returned to normal color within 10 minutes. Abdominal swelling noted 4/26. Presented 4/27 with abdominal fluid wave and tachycardia. Abdominocentesis performed - inhouse cytology showed mostly RBC, medium basophilic cells, few neutrophils, modified transudate TP 2.8. Started on Pimobendan and Furosemide 4/27. Improved in overall wellbeing after abdominocentesis and starting medications.
-Abnormal PE/Chem/CBC/UA Results: CBC: increased reticulocytes, leukocytosis due to neutrophilia (16.71), monocytosis (1.87), mild eosinophilia. CHEM: elevated phosphorus 7.7 Hypoproteinemia 4.8, Albumin 6.2. CXR show general cardiomegaly, diffuse parenchymal pattern, limited abdominal detail, hepatomegaly.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Marked left ventricular dilation with diminished systolic function. Increased EPSS and increased sphericity. Decreased LV wall thickness. Marked left atrial enlargement. The mitral valve appears mildly thickened, with no obvious prolapse into the left atrial lumen. Mild central mitral regurgitation; decreased velocity. The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Mildly elevated velocity. Moderate right atrial and ventricular dilation. The aortic valve is normal with decreased outflow velocity. No AI. Normal pulmonic valve with a normal outflow velocity. No PI. No pericardial effusion seen. 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	3.0	NM	2.8	8	10	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	0.8	0.6	41.7	5.4	7.6	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)
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 Clin North Am 15:1177, 1995				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)



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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 severe biatrial dilation. Mild MR and trace TR are identified with mild pulmonary hypertension. No additional issues are seen.

Systolic failure can be primary in nature (DCM/ARVC) or secondary to diet, taurine deficiency, hypothyroidism, myocarditis, tachycardia-induced cardiomyopathy, or infiltrative disease such as lymphoma. In a relatively young german shepherd, DCM is possible; however, a diet history should be obtained due to the recent correlation between grain free/boutique/exotic diets. Thyroid status can be assessed, a cTnI submitted, etc.; however, prognosis at this stage is unchanged.

Given the severity of disease seen here and reported ascites, the diagnosis is right-sided CHF, and immediate treatment is recommended as below. If the patient is or becomes unstable, hospitalization for oxygen support and IV therapy is strongly recommended. 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.

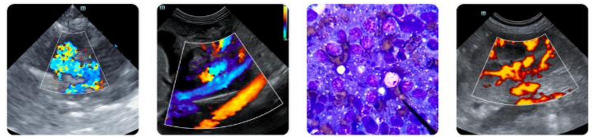
Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Moderate activity restriction is advised. Monitor for development of a cough, worsening labored breathing, abdominal distention, exercise intolerance or collapse episodes in the future. Monitoring of sleeping 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, consider referral for 24-hour supportive care. A baseline ECG and BP are recommended. Recommend the following oral medications: Institute aldosterone antagonist Spironolactone 1-2mg/kg PO q12h. Institute diuretic Lasix 1-2mg/kg PO q8h for 3-5 days, once doing well at home, decrease to q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute taurine supplement 1000mg PO q12h. Consider diet history (avoiding non-traditional options), 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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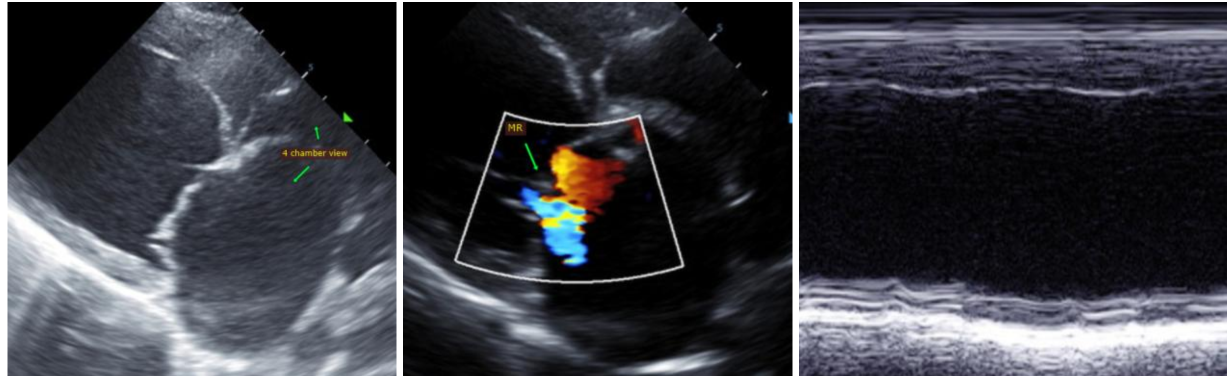
IMAGES



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)
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