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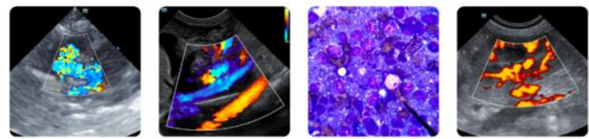


Clinical Sonography & Telecytology
Educational Teleconsultation Services™

PATIENT
Gibson Simmons

SPECIES
Canine

BREED
Pitbull Mix

SEX
Neutered Male

AGE
7 Years

WEIGHT
110 pounds

INTERPRETED BY
Sara Brethel DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Sara Hansen

HOSPITAL NAME
Forest Valley

REFERRING VET
Dr. Kenna

INVOICE
15271

DATE
04/21/26

PRESENTING CLINICAL SIGNS

Clinical Exam Findings: DRE - tacky mucosa pendulous abdomen labored breathing dorsal muscle atrophy R/O - CHF, R sided secondary to GF diet ABNORMAL Labwork Values ALT = 243 H r/o hepatobil disease, hepato congestion secondary to CHF BG = 126 H r/o stress HCT = 49.5 H normal PLt = 206 L normal Brief U/S - no obvious masses, ascites noted, TP = 4.0, entire rim of gallbladder was hyperechoic, Quick view of heart - large heart chamber with very low contractility, no pericardial effusion noted For ECHO Only: Blood Pressure NA HR/RR/BP: HR- 130 RR- 60 Is there a Heart Murmur? If so, please grade. None noted Current Medications Vetmedin, Furosemide, Benazepril Radiographic Findings Cardiomegaly noted, ascites X-rays were very difficult to get pt into position with pt's labored breathing and large dog, only able to take DV views of chest and abdomen as pt turned cyanotic in VD positions. Oxygen was provided as pt struggled/ slight purple hue to tongue after rads were completed.

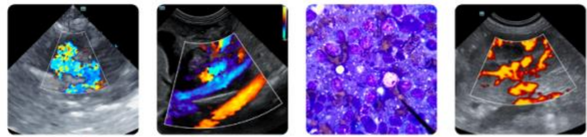
ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	4.82	2.51	NM	1.35	12.69	--	NM
CANINE CARDIAC PARAMETERS	**HR (BPM)**	**AV VMAX (m/s)**	**PV MAX (m/s)**	**BODY WEIGHT (kg)**	**LAD** LA MAX 4 Chamber	**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				
PATIENT	130	1.03	0.71	50	5.4	6.3	5.5

Cardiac Presentation

The mitral valve leaflets are normal with mild mitral regurgitation centrally directed. There is no prolapse of mitral valve leaflets. The left atrial size is normal. LV internal dimensions during diastole are increased and systolic function is decreased in the face of mitral regurgitation. The left ventricle is hypodynamic with thinning of the left ventricular walls. There is normal right atrial size with mild evidence of eccentric tricuspid regurgitation. The tricuspid valve leaflets are normal. There is no evidence of pulmonary hypertension on this evaluation. The right ventricle appears to have preserved systolic function subjectively. The aortic and pulmonic valves had normal morphology and the corresponding outflow velocities were within normal limits. There was no evidence of pulmonic or aortic insufficiency. The aorta appears normal. The pulmonary artery and associated branches appear normal. There is no evidence of pleural effusion, pericardial effusion, or intracardiac masses.

ULTRASONOGRAPHIC FINDINGS



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- Dilated cardiomyopathy phenotype with normal left atrial size and normal right atrial size.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is evidence of a dilated cardiomyopathy phenotype. Differentials include primary dilated cardiomyopathy (idiopathic), dietary related, infectious, or inflammatory. Sometimes, non-traditional grain free diets can cause decreased pumping function of the heart. There are other diseases such as infectious causes (tick borne), inflammatory conditions, or diseases that affect the body that can also cause this type of appearance to the heart. Other diagnostics to consider include screening for infectious diseases, ensuring blood work is within normal limits, and considering an abdominal ultrasound if the breed is not a classic breed for DCM (i.e.: classic breeds: Doberman, Great Dane, Irish Wolfhounds).

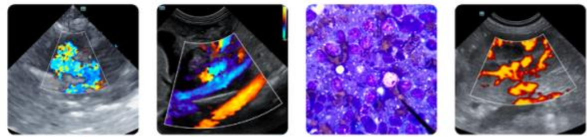
Cardiac medications such as Pimobendan (0.27-0.32mg/kg PO q12) is recommended along with an ACE inhibitor (enalapril or benazepril 0.5mg/kg POq12-24). 2-3 weeks after starting ACE inhibition, repeat kidney values are recommended.

Due to the potential for arrhythmias with DCM, a Holter monitor is recommended. If a Holter is unavailable, recommend evaluating the rate and rhythm with an electrocardiogram. Unfortunately, due to the nature of this disease, the patient is at risk of passing away suddenly.

While there is a DCM phenotype, the left atrial size and right atrial size is within normal limits and the ascites does not appear to be secondary to underlying congestive heart failure. Recommend discontinuing furosemide therapy. The patient's heart rate being 130 is also not supportive of congestive heart failure. Recommend ensuring blood pressure is normal. Can consider fluid analysis and cytology of the effusion. Recommend ensuring the patient is getting 0.27 to 0.32 mg/kg of Vetmedin twice daily. An abdominal ultrasound can be considered and likely the patient needs a therapeutic abdominocentesis due to the reported difficulty breathing. Recheck echo in four to six months.

It recommended to consider switching to a grain-based commercial dog food diet made by Purina, Science Diet, or Royal Canin (if there is no history of a food allergy) since there is currently an association between cardiac changes (poor pumping function and dilation of the heart) and multiple grain free and limited ingredient diets. Current investigation is still underway and the definitive causative factor has not been identified. A grain source including corn or barley should be seen on the dog food label. Substitutes for common grain sources such as peas, lentils and even rice have been implicated in cardiac dysfunction. Any diet change should be gradual by adding small amounts to the current diet first and then increasing the ratio of the new food gradually over two weeks to avoid gastrointestinal upset.

Cardiac supplementation can be considered for this patient. If the patient is eating well, recommend starting taurine (30mg/kg PO q12) and L-carnitine (50mg/kg q8) supplementation (brands: Now, Solgar, PetAg, Twinlabs). Fish oil supplementation can also be administered (EPA 40mg/kg + DHA 25mg/kg PO q24). Can consider staging these medications (ie: starting one and then a week later starting another) due to the potential for stomach upset.



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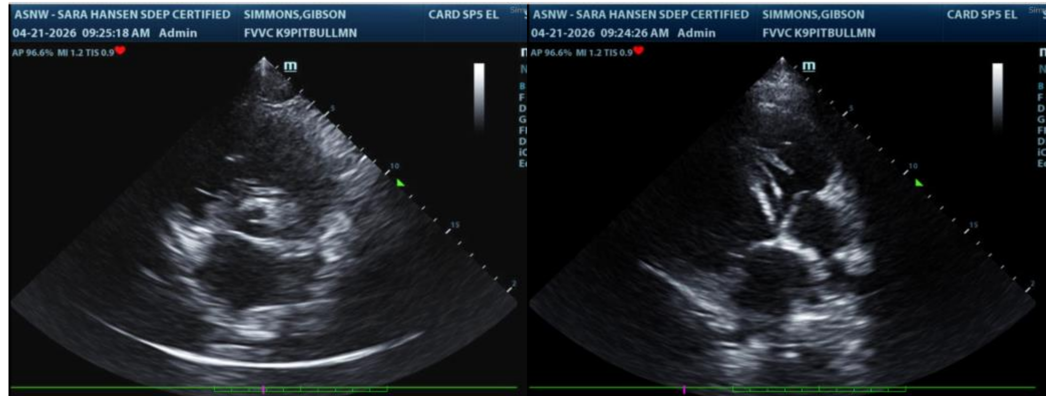

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Sara Brethel DVM, DACVIM (Cardiology)

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