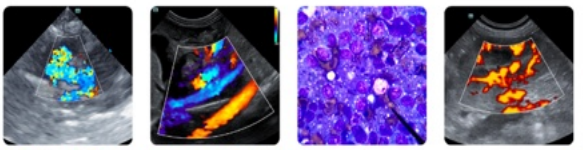


SonoPath www.thefocalzone.com info@thefocalzone.com 289.808.2608

PATIENT

Freddy McKenzie

SPECIES

Canine

BREED

Doberman

SEX

Neutered male

AGE

7.5 years

WEIGHT

48.4 kg

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Queensway VH

REFERRING VET

Dr. Addison

INVOICE

74686

DATE

4/21/26

PRESENTING CLINICAL SIGNS

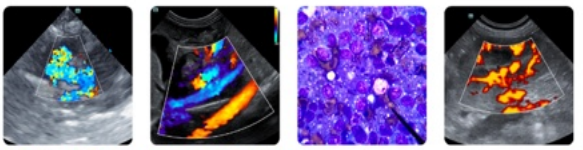
History: Presented 4/4/26 for acute onset of dry coughing after exercise. O concerned about DCM as has had a Doberman before with the disease. No close contact with other dogs. Had been pulling on collar when cough was elicited. NAF on PE, patient very excited and panting, no obvious murmur or arrhythmia but hard to auscultate. HR varied between 120-132. Has not seen further coughing but owner has restricted exercise. No meds.
Abnormal PE/Chem/CBC/UA Results: Please read attached ECG Initial rads suspected caudodorsal parenchymal patter, VHS 11, VLAS 2, image not great quality due to patient compliance.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The left atrium is at the upper limits of normal to mildly enlarged. The left ventricle is at the upper limits of normal in dimension with marginal systolic function. The right atrium and ventricle are normal in dimension with normal systolic function. The anterior and posterior mitral valve leaflets are appropriately thin but do not completely appose during systole due to annular dilation, and there is no significant prolapse. There is mild mitral regurgitation identified. The tricuspid valve leaflets are appropriately thin with adequate apposition and intact chordae, with trivial tricuspid regurgitation and no evidence of pulmonary hypertension. The left ventricular outflow tract demonstrates normal laminar flow, and the visible aorta is unremarkable. The right ventricular outflow tract assessment reveals normal laminar flow with appropriate main pulmonary artery diameter and right pulmonary artery distensibility. There is no pulmonic and no aortic valve insufficiency identified. There is no visible pericardial, pleural, or free peritoneal fluid documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial, and visible extra-cardiac regions are free of masses, spontaneous echo contrast, or thrombi.

CANINE CARDIAC PARAMETERS	Body Weight kg	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	48.4 kg	160	6.47	2.61	1.32	5.56	4.0
CANINE CARDIAC PARAMETERS	**FS**	**EPSS**	**PV V MAX (m/s)**	**AV V Max (m/sec)**	**MR Vmax**	**TR Vmax**	**RPA distensibility (normal >30%)**
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	28	1.0	1.4	1.8	6.4	1.3	31

ECG:
The underlying rhythm is sinus in origin with a varying R-R interval and average heart rate of 160bpm bpm. The majority of the QRS complexes are supraventricular in origin with consistent P-Q intervals. There are intermittent isolated QRS complexes that are prolonged in duration (>70ms) and deviated



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MEA, suggesting a ventricular origin. There is no evidence of atrioventricular block or atrial ectopy identified. This is most consistent with an underlying sinus rhythm with intermittent ventricular ectopy.

ULTRASONOGRAPHIC FINDINGS

These findings identify reduced left ventricular function in the setting of an enlarged left ventricle. Intrinsic myocardial dysfunction (ie DCM) is a concern. Other possibilities, including primary valve disease with secondary ventricular changes or myocardial depressant effects of systemic disease must also be considered. It would also be important to verify that the owners are not feeding a grain-free, exotic, or boutique diet, as a secondary nutritional cardiomyopathy must also be considered. Ventricular arrhythmias occur in many clinical settings, generally divided into cardiac and non-cardiac causes. Cardiac conditions include structural heart disease, pericardial effusion/cardiac neoplasia, and rarely myocarditis. Non-cardiac causes are common and include splenic disease, metabolic disease, electrolyte disturbances, tick-borne disease, fever, anemia, trauma, GDV, hepatic disease, GI disease, pancreatitis, DIC, and sepsis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

At this time, therapy for the myocardial dysfunction can be considered, to include Vetmedin (0.25-0.35 mg/kg BID) and enalapril (0.5 mg/kg BID, assuming normotension and lack of renal insult). If the owners are feeding a grain-free diet, an immediate diet change would be necessary, and the addition of taurine (50 mg/kg BID) would be appropriate. If there is any concern for metabolic/systemic disease, additional testing (complete bloodwork including T4 and resting cortisol, abdominal ultrasound) should be considered. Otherwise, thoracic radiographs, blood pressure, and chemistry panel should be performed now for a baseline, and again in 1-2 weeks. A follow-up echocardiogram, thoracic radiographs, blood pressure, and chemistry panel is recommended in 3 months to assess for either static, improved, or progressive changes. Owners should monitor resting respiratory rate at home. Values above 30 breaths/minute or an increase in respiratory rate 10% above baseline should prompt veterinary re-evaluation.

The following sources for supplemental taurine are recommended:
Mega taurine caps by Twinlab (1000mg capsule)
Taurine by Swanson Health Products (500mg capsule)
Taurine by NOW foods (500mg capsule)
Taurine 500 by GNC (500mg tablet)

While therapy is not specifically indicated based on these findings at this time, further diagnostics will help tailor therapeutic recommendations. Consider the following:
- Abdominal ultrasound to look for abdominal causes of VPCs (e.g., splenic/adrenal changes)
- Consider 24-48 hour ambulatory ECG (Holter) monitor to assess significance of arrhythmia

Anesthesia considerations:
Anesthesia should be avoided if possible. If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) or spironolactone is being given, it should not be administered on the morning of general anesthesia. Other cardiac medications should be administered per the normal dosing schedule. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 5 ml/kg/hour) if possible (i.e., if not hypotensive). A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Premedication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is

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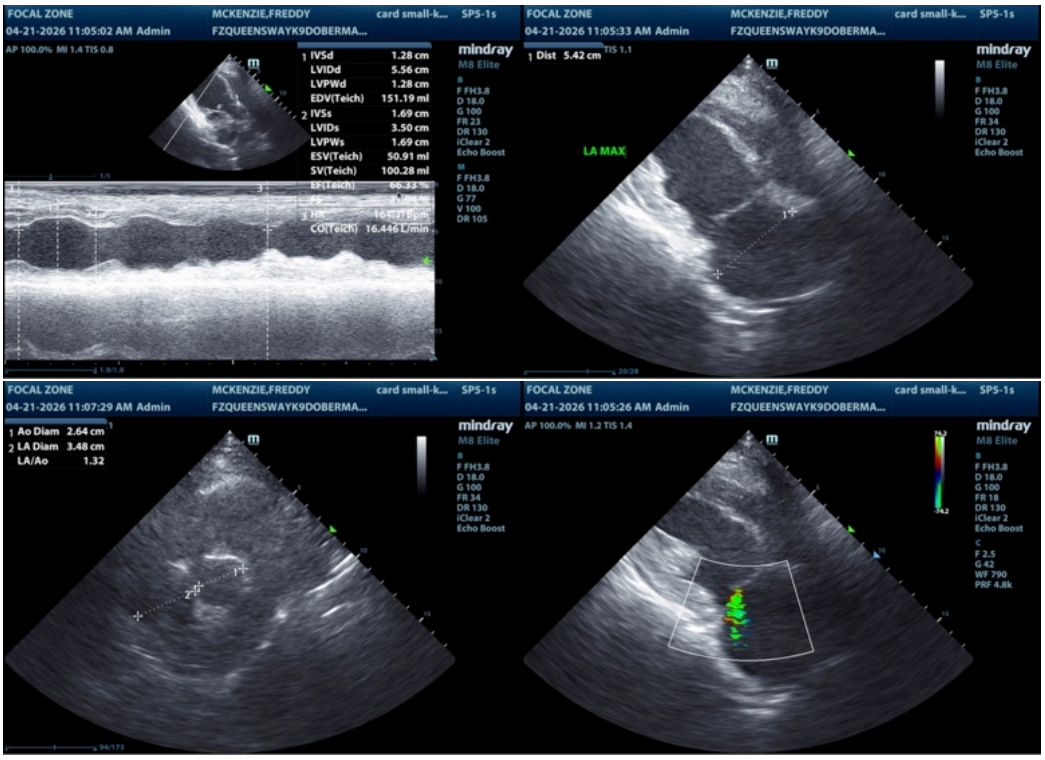
reasonable. Dobutamine (2.5-10 µg/kg/min as a CRI, starting at 2.5 µg/kg/min and increasing the dosage incrementally) may be used in lieu of fluid boluses to augment systemic blood pressure.

Diet:
A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly palatable with adequate protein and calories for maintaining optimal body condition. Consider omega-3 fatty acid supplementation. Ensure the patient is not currently receiving a boutique, exotic, or grain-free diet.

Activity:
Moderate physical activity (meandering walks, exploring the backyard, playing with toys inside, getting excited when family gets home, etc.) is encouraged, but periods of strenuous aerobic activity (jogging, strenuous outdoor ball play, prolonged play at the dog park, etc.) should be avoided, especially during periods of high heat (> 80 F) and humidity. Dogs with heart disease tend to tolerate cool and cold temperatures much better than high temperatures. Avoid sudden increases in activity (e.g. 2 block walks during the week but 2 mile walks followed by 30 minutes at the dog park on the weekends) as this may be difficult for the cardiovascular system to deal with.



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.
Bradley Harris, DVM, DACVECC, DACVIM (cardiology)
info@SonoPath.com