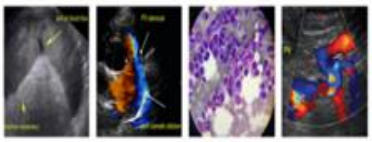
Mass Veterinary Services



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Freddie Sherwood

SPECIES
Canine

BREED
Rottweiler Mix

SEX
Male Intact

AGE
1.8 years

WEIGHT
75.8lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
23127

DATE
3/16/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. History exposure to parvo in utero with mild decrease in LV systolic function noted on echocardiograms. Current presentation: Freddie has been doing well at home with no clinical issues. Good appetite and activity level. On auscultation: NSR, no murmurs noted, PSS, lung fields clear. Medications: 1) Pimobendan/vetmedin 10mg 1 tab twice a day *Sedated with propofol for study 2) Alprazolam 2mg 1-2 tabs prior to vet visits.
-Pertinent previous echo findings (8/18/21 MML): LA 2.8 cm; LA:Ao 1.3; LV 4.4 cm; mild LAE; LV FS 23-25%.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 20mm/mV. The average heart rate is 110bpm with an underlying sinus rhythm. P for every QRS complex and vice versa. P and QRS morphologies are positive. Isolated VPCs are seen throughout; singles only, monomorphic. No supraventricular premature beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with isolated VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is normal in diastole and increased in systole. Mild decline in myocardial function; FS 23-25%. LV wall thicknesses appear normal.
Left atrium: The left atrium is mildly enlarged.
Mitral valve: The mitral valve is normal with mild central MR.
Aortic valve/Aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.
Right atrium: Normal RA dimension.
Tricuspid valve: The tricuspid valve appears normal with mild tricuspid regurgitation; normal velocity.
Pulmonic valve/Pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.
Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.

2-Dimensional Measurements

Ao diam (cm)	2.3
LA diam (cm)	2.3
LA:Ao (Swe)	1.0
IVS thickness (cm)	0.9
LVID diastole (cm)	4.1
PW thickness (cm)	0.9
LVID systole (cm)	3.1
FS (%)	24

Doppler Measurements

PV Vmax (m/s)	1.0
AoV Vmax (m/s)	1.1
MR Vmax (m/s)	NM
TR Vmax (m/s)	2.5
TR PG (mmHg)	25

INTERPRETATION OF THE FINDINGS

Unchanged mild structural abnormalities are appreciated in this study. The LV dimensions and function are similar to previous without significant left atrial enlargement.

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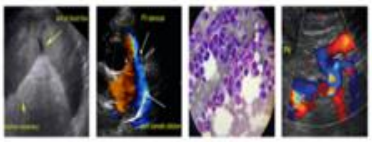

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As a new development, isolated VPCs are noted on the ECG. VPCs are ectopic beats generated from abnormal conductive or fibrotic tissue in the ventricles of the heart muscle, and even frequent single VPCs will often cause no clinical signs in dogs. When sustained however, ventricular tachycardia can lead to symptoms such as lethargy and collapse.

VPCs are a very non-specific finding. They can be primary in origin (arrhythmic disease; a rule out diagnosis), develop secondary to significant cardiac disease, or be extra-cardiac in origin, i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In this young dog with underlying LV dysfunction, these likely due to stress and ventricular fibrosis. Unfortunately, there is always an elevated risk for collapse and sudden death in any arrhythmic patient, and even on medications this risk unfortunately still persists.

In addressing arrhythmias in dogs, we must not only consider why they are happening as above, but also whether or not treatment is warranted. Given only isolated VPCs, consider application of a holter monitor if interested in further evaluation. The patient is notably stressed in hospital and heavy sedation has to be utilized, which both may lead to an increase in the abnormality. This will tell us the frequency and complexity of the rhythm over 24 hours of normal activity. An alternative approach would be to simply monitor at home for symptoms and utilize a holter monitor should the patient begin to experience clinical signs such as lethargy or collapse, which is also reasonable. No obvious indication for anti-arrhythmic therapy based upon what is seen here. Discussion with the owner is advised.

Given these findings, no additional medications are indicated. Continue Pimobendan going forward. Patient will carry lifelong risk for progressive structural disease, development of CHF, malignant arrhythmias and/or sudden death in the future.

RECOMMENDATIONS

- Continue Pimobendan 0.3mg/kg PO q12h.
- Consider holter versus monitor as discussed.
- Omega fatty acid supplementation may be of some long-term benefit and mild salt restriction may be of some long-term benefit.
- Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.
- Mild activity restriction is advised.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

- Recommend conservative monitoring with a recheck echocardiogram and ECG in 6-12 months, sooner if any syncope is noted at home.

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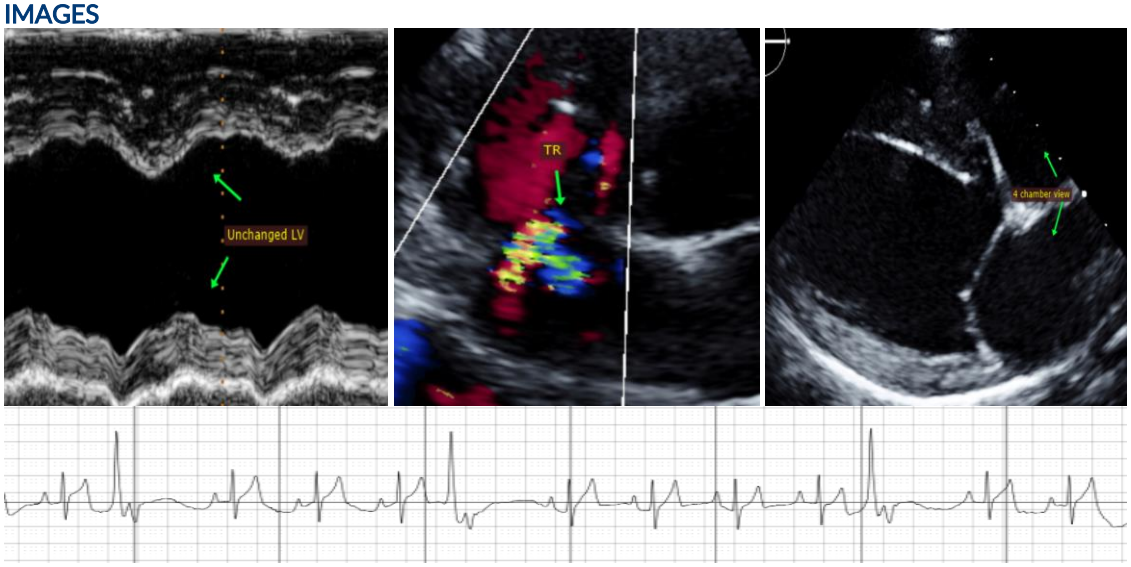

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Echocardiogram performed by: Pamela Harrigan, RDCS
Pet Animal Ultrasound Service (4paus.com)