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Pet Animal Ultrasound Service
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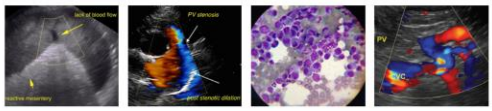


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Toby Meyer-Ogren

SPECIES
Canine

BREED
Dachshund Mix

SEX
Male Neutered

AGE
5 years

WEIGHT
18lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Wood River Animal Hospital

REFERRING VET
Dr. Schuelke

INVOICE
29080

DATE
2/17/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. History chronic valvular disease- Stage B1. Doing well overall. History urinary incontinence not improved on Prazosin. Is polydipsic, but unable to concentrate urine. Query Cushing's. On exam: Grade III/VI holosystolic murmur. BP: 115 mmHg -Pertinent previous echo findings (7/19/22 Adam Kane, DVM, DACVIM-Cardiology): LA 1.83, LA:Ao 1.07, LV 2.73 cm, normal LA size, mild-moderate MR, TR (3.01m/s, 36 mmHg), mild pHTN. *Having bi-cavity ultrasound exams.

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, 10mm/mV. The average heart rate is 90bpm (range 65-115bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. P and QRS morphologies are positive. Isolated VPCs are seen throughout; singles only and monomorphic. Three in a 1m 40s tracing. No supraventricular premature beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation. Isolated VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is normal with adequate myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is normal.
Mitral valve: The mitral valve is mildly thickened with no prolapse into the left atrial lumen. Mild eccentric mitral regurgitation with a normal velocity.
Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Mild RV enlargement.
Right atrium: Mild RA enlargement.
Tricuspid valve: The tricuspid valve appears mildly thickened with septal prolapse and mild to moderate 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

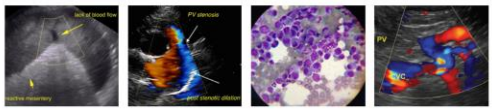
Ao diam (cm)	1.7
LA diam (cm)	2.2
LA:Ao (Swe)	1.3
IVS thickness (cm)	0.7
LVID diastole (cm)	2.7
PW thickness (cm)	0.8
LVID systole (cm)	1.6
FS (%)	40

Doppler Measurements

PV Vmax (m/s)	0.6
AoV Vmax (m/s)	1.2
MR Vmax (m/s)	5.6
TR Vmax (m/s)	2.7
TR PG (mmHg)	30

INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease persists with mild mitral and mild to moderate tricuspid regurgitation. Compared to the prior study, the left heart remains normal, indicating overall stability. While the pulmonary pressures actually measure normal in this



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exam, there is mild subjective mild right heart enlargement, that was not noted previously. Simple follow up is advised. No additional issues are identified.

The ECG does show occasional ventricular premature contractions (VPCs). 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 such as ARVC, be secondary to significant cardiac disease (mild in this study), or be extra-cardiac in origin, i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In this dog with only mild structural disease, all additional causes can be considered. An abdominal ultrasound to monitor for any underlying abnormalities, in addition to full lab work, etc. can be considered. 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.

Based strictly on the amount of arrhythmia seen in hospital, low markers of malignancy (such as polymorphism), and a lack of associated clinical signs at home, no anti-arrhythmic treatment is clearly indicated. Monitoring is advised in the future; particularly should any acute lethargy/collapse develop.

Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1).

RECOMMENDATIONS

- No cardiac medications are clearly indicated.
- Consider systemic screening as discussed.
- Omega fatty acid supplementation 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.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

- Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

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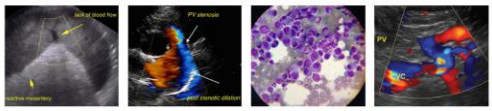

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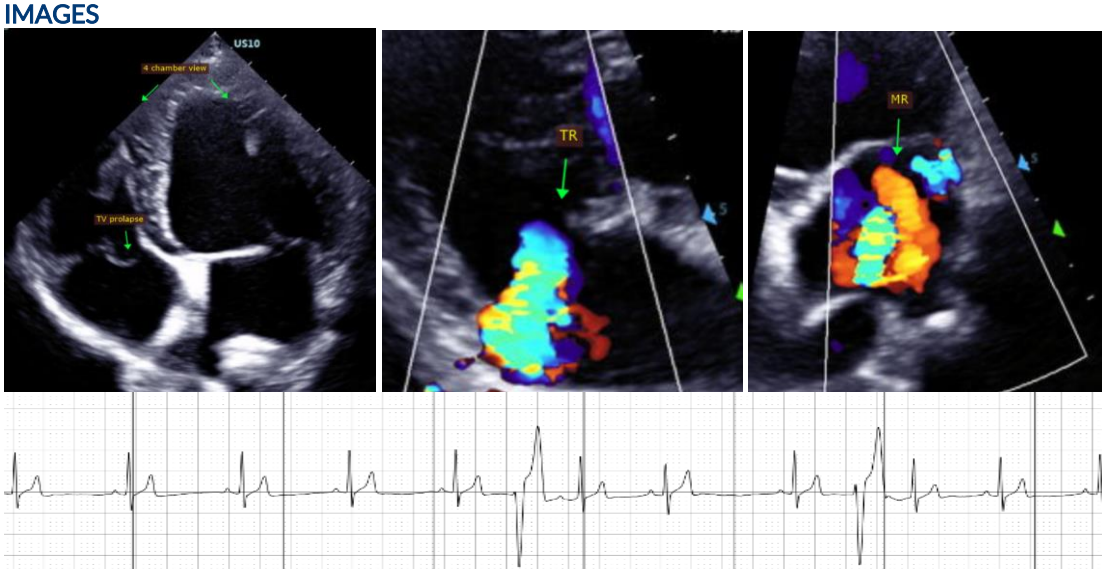
IMAGES



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

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