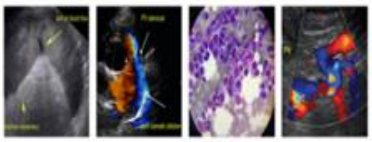
Mass Veterinary Services



SonoPath
Clinical Sonography & Telecytology
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PATIENT
Pickles Hamilton

SPECIES
Canine

BREED
Dachshund

SEX
Female Spayed

AGE
8 years

WEIGHT
12.3lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
26111

DATE
8/31/22

PRESENTING CLINICAL SIGNS

History: Pickles was noted to have a heart murmur in May 2016. An echocardiogram done in July 2016 revealed a normal heart structure and function. She needs dental work. Good appetite and normal activity level. On exam: NSR, grade IV/VI murmur with PMI left apical area radiating to right, PSS, lung fields clear. BP: 150mmHg x 5. Currently no medications *Sedated with propofol for study.
-Pertinent previous echo findings (7/22/16 Angell Animal Medical Center): LA 1.70 cm; LA:Ao 1/43; LV 2.52 cm; no valvular regurgitation noted.

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 130bpm (range 78-188bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. P and QRS morphologies are positive. Occasional isolated APCs are noted; no couplets, triplets, or SVT are appreciated. No ventricular premature beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation. Isolated APCs.

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. Trivial mitral regurgitation.
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 no tricuspid regurgitation.
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)	1.5
LA diam (cm)	1.7
LA:Ao (Swe)	1.1
IVS thickness (cm)	0.66
LVID diastole (cm)	2.3
PW thickness (cm)	0.64
LVID systole (cm)	1.1
FS (%)	52

Doppler Measurements

PV Vmax (m/s)	0.88
AoV Vmax (m/s)	1.6
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

INTERPRETATION OF THE FINDINGS

Overtly normal cardiac structure and function. No cause of the murmur is identified in this study, which is surprising given the intensity. Trivial MR is noted; however, this is unlikely to be heard on physical exam. In the absence of significant volume changes (dehydration)

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or anemia, other possibilities include a physiologic flow murmur only present with elevated heart rates, or a small flow abnormality not seen here. Baseline lab work is recommended if not recently performed. It is reasonable to monitor periodically via recheck echocardiography in the future, particularly should the murmur persist/progress. No significant valvular insufficiencies were noted, and no structural issues identified.

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

APCs are a very non-specific finding. They can be primary in origin, develop secondary to significant cardiac disease (not present in this study), or be extra-cardiac in origin; i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In an 8-year-old dog without structural cardiac disease, ruling out all differentials can be considered. That being said, these are considered largely benign at this time and simple monitoring would be a reasonable approach.

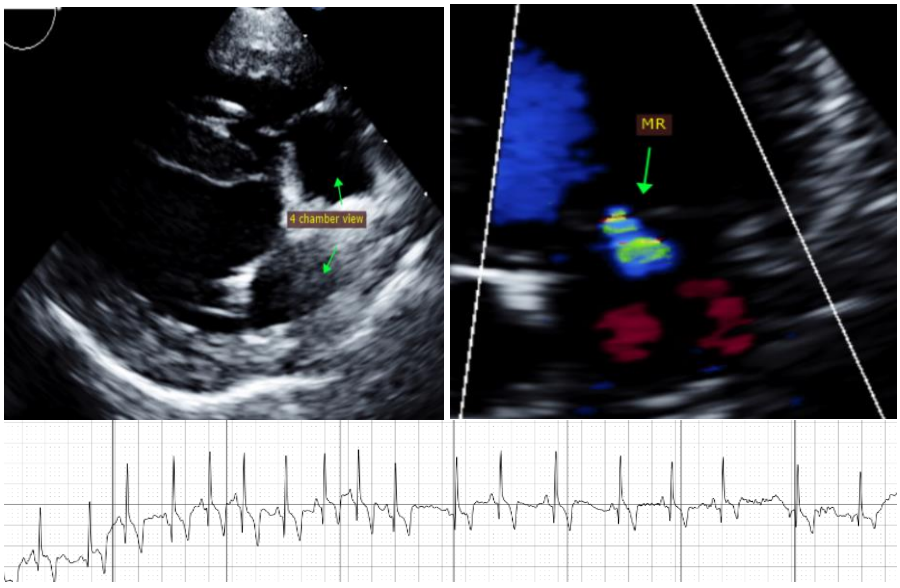
RECOMMENDATIONS

- No cardiac medications are clearly indicated at this time.
- Consider systemic evaluation.
- Fish oil supplementation is recommended for dogs with arrhythmias (1000-2000mg of omega 3 and 6 once to twice daily).
- No cardiac contraindication for general anesthesia.
- Monitor at home for collapse, exercise intolerance, and/or lethargy.

PLAN

Recheck echocardiogram in 1 year to screen for development of disease the pre-existing murmur may mask.

IMAGES



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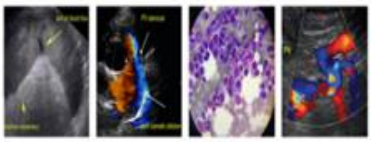

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)