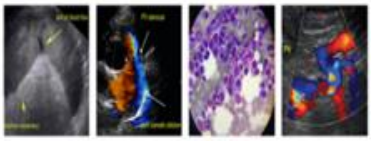
Mass Veterinary Services



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

PATIENT
Bhani Filiault

SPECIES
Canine

BREED
Havanese

SEX
Female Spayed

AGE
10 years

WEIGHT
14.56lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
23022

DATE
3/9/22

PRESENTING CLINICAL SIGNS

History: Bhani was recently adopted from the shelter and was noted to have a heart murmur. She has a dry, hacking cough noted for the past week and panting overnight. The family feels she has some exercise intolerance. No collapsing episodes. Good appetite with no S/V/D/PU/PD. On auscultation: NSR, grade IV/VI murmur with PMI left apical area radiating to right, PSS, lung fields clear. BP: > 300mmHg *No sedation for study.

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 mildly enlarged.
Mitral valve: The mitral valve is mildly thickened with mild prolapse into the left atrial lumen. Moderate eccentric 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.
Right atrium: Normal RA.
Tricuspid valve: The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with early pulmonary hypertension.
Pulmonary 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.
Heart rhythm: ECG reveals a sinus rhythm with an average HR of 140bpm.

2-Dimensional Measurements

Ao diam (cm)	1.5
LA diam (cm)	2.3
LA:Ao (Swe)	1.5
IVS thickness (cm)	0.7
LVID diastole (cm)	3.0
PW thickness (cm)	0.7
LVID systole (cm)	1.7
FS (%)	43

Doppler Measurements

PV Vmax (m/s)	1.0
AoV Vmax (m/s)	1.7
MR Vmax (m/s)	5.8
TR Vmax (m/s)	2.9
TR PG (mmHg)	34

INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease causing moderate mitral and mild tricuspid regurgitation. Lack of chamber enlargement indicates the current risk for complication is low. Mild pulmonary hypertension is noted, which is likely developing secondary to the chronic cough. No concurrent issues such as systolic dysfunction are noted in this study. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1).

Given these findings, the cough is certainly non-cardiogenic in origin. Respiratory disease is considered most likely given the breed and should be addressed as such. If the cough is poorly controlled/progresses long term, this can certainly lead to worsening of PAH. Clinical signs of significant PAH include exertional dyspnea/collapse. Cough control is recommended lifelong (hydrocodone, intermittent AI prednisone, fluoroquinolone for acute flare up, etc.).

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The reported blood pressure is markedl elevated and should be reassessed for accuracy particularly given no reported clinical signs of severe hypertension (retinal changes, etc.) or evidence of LVH on echo. Ideally obtain serial measurements in a controlled, low stress environment and continue until 3 consecutive readings plateau within 5mmHg of variability. If persistently >180mmHg despite a relatively calm demeanor, recommend institution of amlodipine to effect. Additionally, if deemed accurate, screening for predisposing underlying causes of SHT is recommended (Cushings, PLN, adrenal tumor, etc.), as primary disease is relatively uncommon and a rule out diagnosis

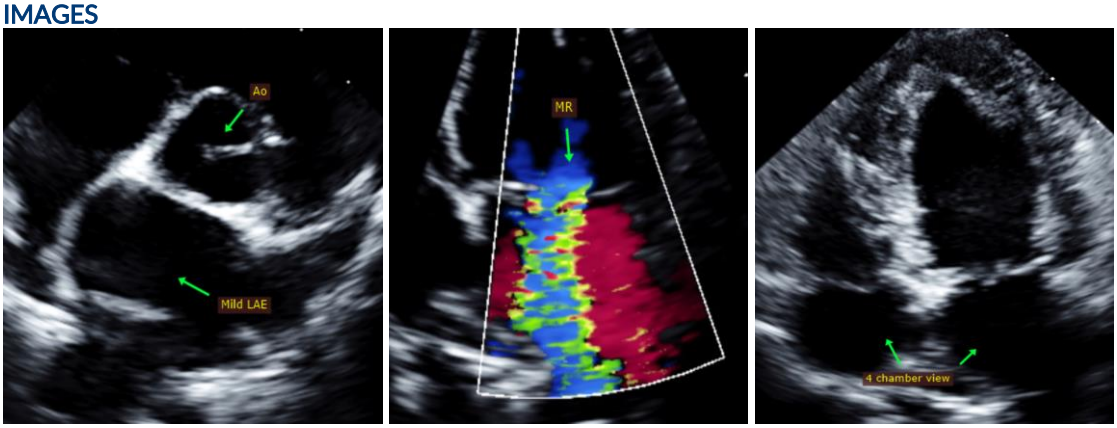
RECOMMENDATIONS

- Given these findings, no cardiac medications are indicated.
- Consider hydrocodone as needed.
- Reassess BP as discussed.
- Consider further respiratory treatment/evaluation 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 progressive 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.

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

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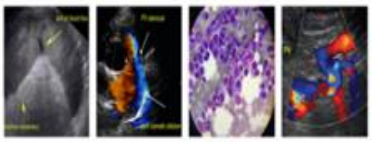

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dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

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)