

PATIENT

Macy Morgan

SPECIES

Canine

BREED

Terrier Mix

SEX

Female Spayed

AGE

9 years

WEIGHT

22.8lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM
DACVIM (Cardiology)

IMAGING PERFORMED BY

Pamela Harrigan,
RDCS

HOSPITAL NAME

Mass Veterinary Services

REFERRING VET

Dr. Masloski

INVOICE

31340

DATE

6/14/23

PRESENTING CLINICAL SIGNS

History: Macy was noted to have a heart murmur in July of 2021 and developed CHF in March. The owner feels the hycodan has lessened her cough, but she is still coughing a bit. She is eating well with normal activity level. On exam: arrhythmia, grade IV-V/VI murmur with PMI left apical area radiating to right, PSS, lung fields clear, mm pink, moist, CRT<2. BP: 140-150mmHg. Current medications: 1) Pimobendan/vetmedin 2.5mg 1 tab twice a day 2) Lasix/furosemide 12.5mg 1 tab twice a day 3) Enalapril 5mg 1/2 tab twice a day 4) Hydrocodone with homatropine/hycodan 5mg 1/2 tab three times a day *No sedation for study.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The underlying rhythm is sinus in origin with an average heart rate of 140bpm (range 83-166bpm). P for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Occasional sinus pauses. Isolated APCs are seen throughout; singles only. No VPCs or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with isolated APCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is increased with hyperdynamic myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is markedly dilated.
Mitral valve: The mitral valve is diffusely thickened with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with a normal velocity.
Aortic valve/Aorta: The aortic valve is mildly thickened. Mildly increased aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: The right ventricle is dilated with minimal hypertrophy.
Right atrium: Mild RA dilation. No evidence of tamponade.
Tricuspid valve: The tricuspid valve appears mildly thickened with mild to moderate tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension.
Pulmonic valve/Pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow. The MPA and branches are mildly dilated.
Pericardium/other: Scant to small volume pericardial effusion noted. No pleural effusion. No obvious cardiac masses.

2-Dimensional Measurements

Ao diam (cm)	1.8
LA diam (cm)	4.6
LA:Ao (Swe)	2.6
IVS thickness (cm)	0.7
LVID diastole (cm)	5.7
PW thickness (cm)	0.7
LVID systole (cm)	3.4
FS (%)	40

Doppler Measurements

PV Vmax (m/s)	0.7
AoV Vmax (m/s)	1.6
MR Vmax (m/s)	4.0
TR Vmax (m/s)	3.8
TR PG (mmHg)	58



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INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease causing severe mitral and mild to moderate tricuspid regurgitation. Significant 4 chamber dilation indicates the risk for biventricular congestive heart failure is elevated. Additionally, there is moderate pulmonary hypertension present, which puts the patient at risk for right-sided congestion, and/or syncope. No additional issues are identified.

Scant pericardial effusion (PCE) is identified. In a patient with this degree of heart disease, PCE is either due to a small left atrial tear (leading to hemorrhage into the pericardial space) or right ventricular failure. Either is possible in this patient with both severe LA dilation and significant pulmonary hypertension, and treatment for both is recommend including sildenafil as below.

Strict activity restriction and supportive care is advised until the fluid is able to reabsorb, as there is a high risk for decompensation and further episodes. If any syncope/decompensation occurs acutely in the future, then the amount of PCE should be reassessed.

The ECG shows a sinus rhythm with isolated APCs. These are no doubt secondary to marked atrial dilation. What is seen here does not warrant therapy; however, this patient is at high risk for atrial fibrillation. The most common sign of AF is acute lethargy or collapse and reassessment is advised should either of these are noted in the future.

The prognosis is poor long term, with a predicted survival time of <6 months. Patient will always be at high risk for recurrent biventricular CHF, LA tear, progressive cough and/or malignant arrhythmias/sudden death in the future.

RECOMMENDATIONS

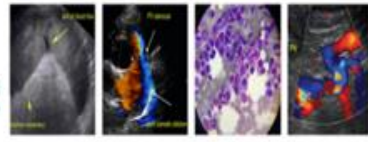
- Continue Lasix, Pimobendan, Enalapril and Hydrocodone as prescribed.
- Institute Sildenafil 1-2mg/kg PO q8h.
- Institute Spironolactone 1-2mg/kg PO q12h.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Elective anesthesia is not advised, as there is high risk for complication. Risk: benefit ratio should be considered. Consider consultation with and/or referral to a facility with an anesthesiologist. Should you elect to proceed, cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, iso or sevoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 cage. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Moderate IV fluid restriction is recommended to avoid fluid overload, while considering comorbidities, hydration status, BP, etc. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.
- Strict activity restriction.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

- Recheck renal values in 1-2 weeks, then every 3-4 months on diuretic therapy.



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

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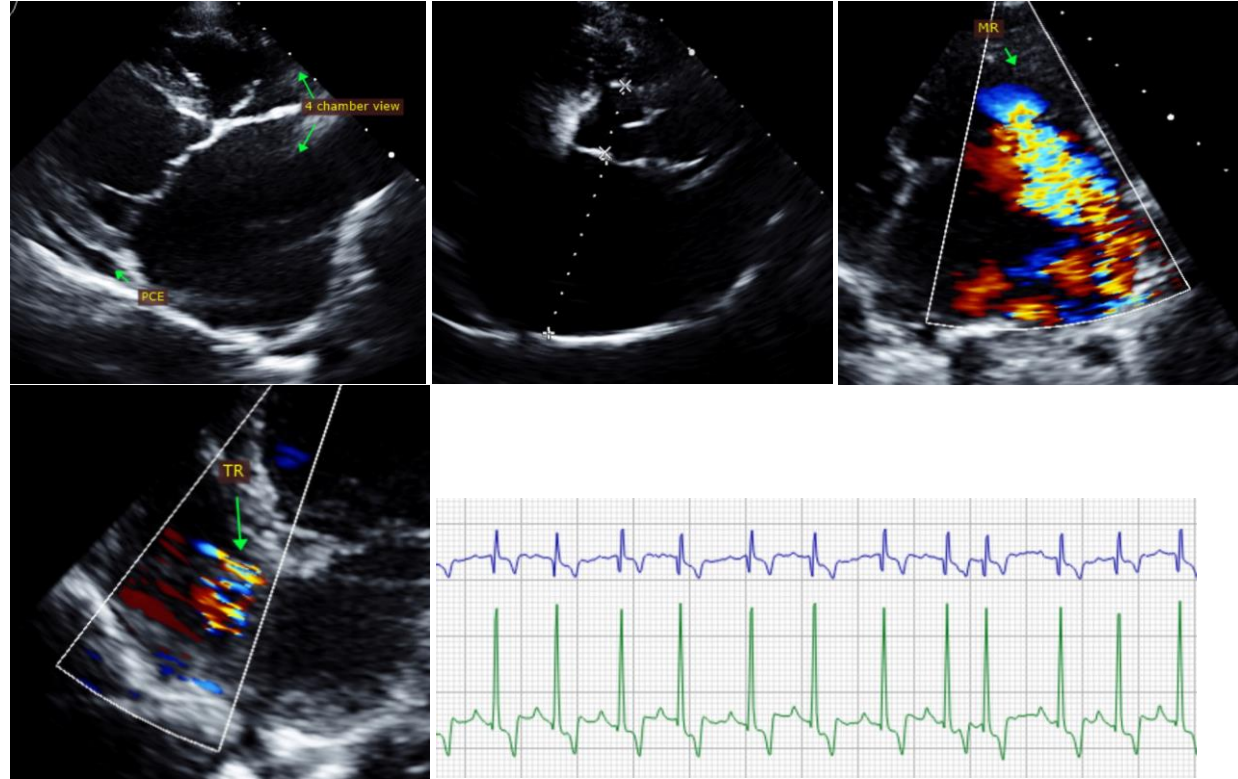
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

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