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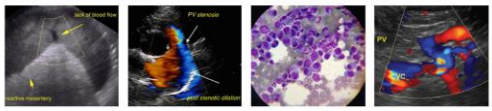

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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PATIENT
Pedro Woodin

SPECIES
Canine

BREED
Chihuahua

SEX
Male Neutered

AGE
8 years

WEIGHT
21lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Littleton Animal Hospital

REFERRING VET
Dr. Brooks

INVOICE
25088

DATE
6/30/22

PRESENTING CLINICAL SIGNS

History: History of HW positive - never treated. Negative on 6/6/22. MBS all WNL. No murmur ausculted; HR 160 bpm; however, deep respirations with slight increase in effort noted, crackles ausculted. Lasix 12.5 mg BID started 6/6/22. Radiographs: cardiomegaly - right sided; pulmonary edema. BP: 170-180mmHg.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Mild right-sided cardiomegaly. Heavy interstitial pattern. No obvious evidence of CHF.

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 diffusely thickened with no prolapse into the left atrial lumen. Mild eccentric mitral regurgitation. Normal velocity.
Aortic valve/aorta: The aortic valve is normal. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Mild RV hypertrophy.
Right atrium: Mild RA enlargement.
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. Trace pulmonic insufficiency. MPA and branches are mildly dilated. 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 80bpm.

2-Dimensional Measurements

Ao diam (cm)	1.7
LA diam (cm)	2.0
LA:Ao (Swe)	1.2
IVS thickness (cm)	0.8
LVID diastole (cm)	2.7
PW thickness (cm)	0.8
LVID systole (cm)	1.3
FS (%)	53

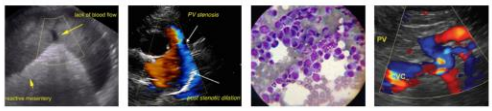
Doppler Measurements

PV Vmax (m/s)	0.73
AoV Vmax (m/s)	1.4
MR Vmax (m/s)	5.1
TR Vmax (m/s)	3.3
TR PG (mmHg)	43

INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease causing mild mitral and mild to moderate tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. The TR velocity and MPA dilation are suggestive of mild to moderate pulmonary hypertension, likely secondary to the prior heartworm disease. The right atrium is mildly enlarged, indicating relatively compensated disease. No additional issues are noted in this study.

Clinical signs of weakness, heavy breathing, cyanosis, and syncope are attributed to severe PAH. Patients with severe PAH and pulmonary disease can eventually develop



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right-sided congestive heart failure (ascites), debilitating cyanosis, labored breathing and exertional syncope if poorly controlled.

Given the history of heartworm disease, **the current clinical signs are more likely respiratory in origin**. Heartworm infestation causes chronic pulmonary damage, as well as development of pulmonary hypertension as a secondary issue. Recommend coverage with broad spectrum pulmonary antibiotic (fluoroquinolone) if the patient is still symptomatic. Additionally, vasodilation using sildenafil may be beneficial. If response is insufficient (i.e., syncope/dyspnea develops), can also add Pimobendan; however, based upon what is seen here this is likely unnecessary. Anti-inflammatory taper course of steroids may also be useful depending on severity of signs. No indication for Lasix, as diuretics can actually further decrease preload and worsen clinical signs.

Going forward, symptomatic care is recommended through use of theophylline and PRN cough suppressants to help decrease the inflammatory component as much as possible. The prognosis overall is guarded, and I am hopeful we can provide some medical relief going forward.

RECOMMENDATIONS

- Discontinue Lasix as discussed.
- Consider a course of Baytril as discussed.
- Institute Sildenafil 1-2mg/kg PO q12h. If response is lacking can also institute Pimobendan 0.3mg/kg PO q12h.
- Consider long-term management of respiratory disease using Hydrocodone, taper course of steroids, and/or theophylline, etc.
- 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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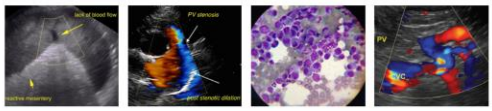

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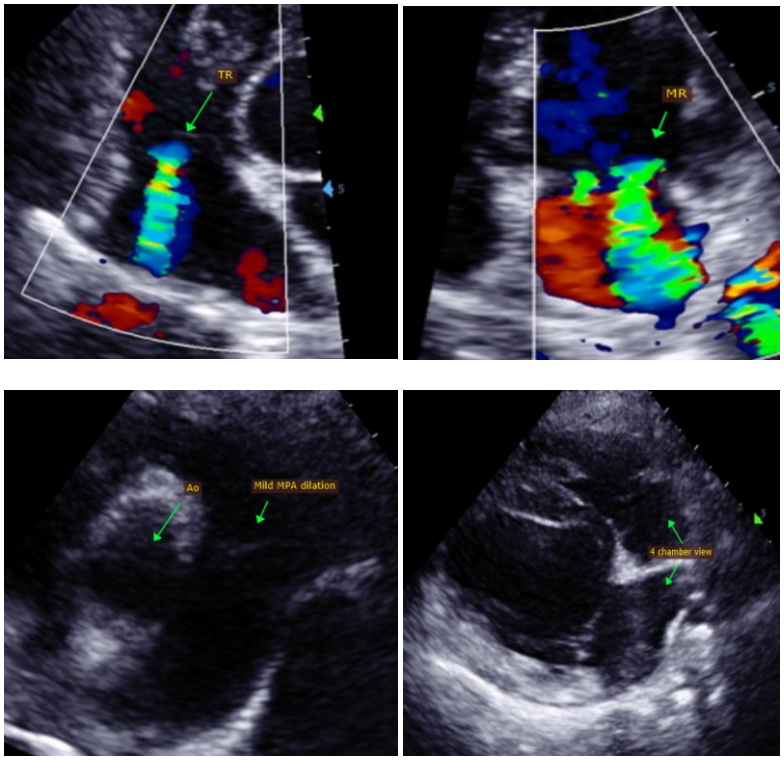
IMAGES



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
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