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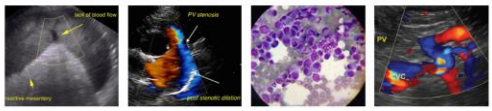

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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PATIENT
Maggie Cho

SPECIES
Canine

BREED
Yorkshire Terrier

SEX
Female Spayed

AGE
11 years

WEIGHT
9.8lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
New England Animal Medical Center

REFERRING VET
Dr. Fernandez

INVOICE
21807

DATE
11/1/21

PRESENTING CLINICAL SIGNS

History: Admitted in CHF on 10/27/21. Radiographs: cardiomegaly; pulmonary edema. Started treatment. Readmitted next day with difficulty breathing. On exam: grade IV/VI systolic murmur, crackles bilaterally, worse on right side; slight increased respiratory effort.
-Current medications: Pimobendan 1.25mg BID; Enalapril 2.5mg BID; Furosemide 12.5mg, 3/4 t BID; Spironolactone 25mg, 1/4 t SID; Entyce 0.5ml SID.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV moderately dilated with hyperdynamic myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is markedly dilated.
Mitral valve: The mitral valve is severely diffusely thickened with mild prolapse into the left atrial lumen. Marked eccentric mitral regurgitation with a decreased velocity.
Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Right ventricular is mildly dilated.
Right atrium: RA is mildly dilated.
Tricuspid valve: The tricuspid valve appears normal with moderate tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension.
Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. Mild 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 180bpm.

2-Dimensional Measurements

Ao diam (cm)	1.2
LA diam (cm)	3.4
LA:Ao (Swe)	3.0
IVS thickness (cm)	0.6
LVID diastole (cm)	3.7
PW thickness (cm)	0.6
LVID systole (cm)	1.8
FS (%)	50

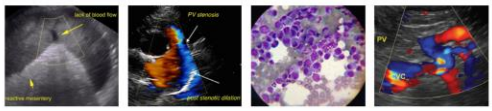
Doppler Measurements

PV Vmax (m/s)	0.56
AoV Vmax (m/s)	NM
MR Vmax (m/s)	4.4
TR Vmax (m/s)	3.9
TR PG (mmHg)	60

INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease causing marked mitral and moderate tricuspid regurgitation. Marked left atrial and ventricular enlargement indicates the risk for spontaneous congestive heart failure is elevated. Mild right heart dilation is consistent with moderate TR and moderate pulmonary hypertension which may be secondary to chronic LA pressure elevation. No additional issues such as systolic dysfunction are identified.

Given the severity of disease and prior radiograph findings, this patient is certainly in CHF and continued lifelong medications are indicated as below. The patient continues to be tachypneic, and more aggressive diuresis is recommended as below utilizing TID Lasix in addition to q12h spironolactone. My suspicion is this patient has relative hypotension, and the ACEI should be discontinued. Finally, this breed is predisposed to concurrent airway



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issues and the findings of crackles/recurrent tachypnea may reflect either airway disease or refractory CHF. Reassessing chest radiographs to compare to the prior study is highly useful in a case like this to determine if ancillary respiratory therapy should also be instituted. No obvious indication for Sildenafil in the absence of exertional syncope or collapse; however, if the response to traditional therapy remains to be insufficient this can also be utilized.

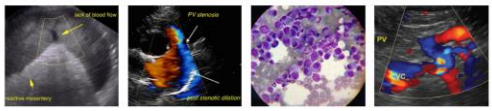
Long term prognosis is poor with this degree of disease, with an average survival time of 8-9 months for canine patients with active pulmonary edema on medications, however they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

RECOMMENDATIONS

- Highly recommend reassess CXR with submission to a Radiologist for comparison to 10.27.21 films. Goal is to decipher refractory CHF from concurrent airway issues.
- Based upon these films, this will dictate if more aggressive CHF therapy and/or pulmonary respiratory therapy should be the focus.
- Assuming the CXR show refractory CHF, increase Lasix to 1-2mg/kg PO q8h with hospitalization for injectable therapy if indicated.
- Increase Spironolactone to 6.25mg PO q12h.
- Discontinue Enalapril until the patient is stabilized.
- Continue Pimobendan as prescribed.
- Consider hydrocodone with homatropine (5mg tabs or 5mg/5ml solution), 0.22-0.4mg/kg up to q4-6 hours PRN if needed for QOL.
- If response to the treatment remains refractory, consider Sildenafil 1-2mg/kg PO q8-12h depending on severity.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Elective anesthesia is not advised.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.
- Monitoring of sleeping breathing rates is recommended as the best way to screen for recurrence of CHF at home.

PLAN

- Recheck renal values and BP in 1-2 weeks then every 3-4 months life-long. If doing well at that time and BP is >130, reinstitute ACE-I 0.5mg/kg PO q12h.
- Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.



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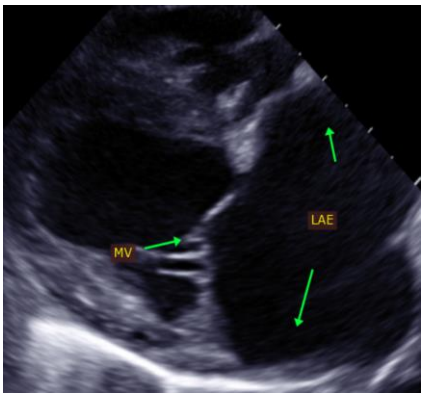
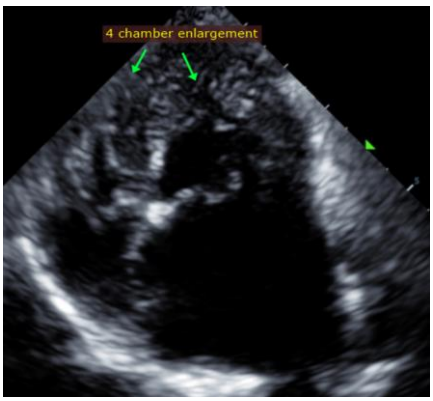
IMAGES





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