



PATIENT

Lulu Taylor

SPECIES

Canine

BREED

Shih Tzu

SEX

FS

AGE

11 years

WEIGHT

13 lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM
DACVIM (Cardiology)

IMAGING PERFORMED BY

Pamela Harrigan,
RDCS

HOSPITAL NAME

Falmouth Animal
Hospital

REFERRING VET

Dr. Hauser

INVOICE

26659

DATE

10/3/22

PRESENTING CLINICAL SIGNS

History: Sudden onset increase respiratory rate. HO chronic valvular heart disease - Stage B2. Prior echocardiogram 2/8/21 (Jean Betkowski, VMD. DACVIM): LA 2.33 cm, LA: Ao 1.7, LV 3.38, moderate to marked LAE, moderate to marked LVE, mild TR (3.3 m/s). Radiographs: Severe cardiomegaly c/w known valvular disease, diffuse age - related pulmonary changes and/or chronic bronchitis. Early/ low grade cardiogenic edema cannot be ruled out, trace pleural effusion or pleural fibrosis. On exam: increased RR, grade III/IV/VI systolic murmur. Current medications: Pimobendan 1.87 mg q12h, started Furosemide 12.5 mg q12h. *Respiratory signs improved with flow by O2.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: Significant LV dilation with hyperdynamic myocardial function. Decreased LV wall thickness.
Left atrium: The left atrium is markedly dilated. Pulmonary veins appear dilated as they enter the lumen.
Mitral valve: diffuse thickening of mitral valve leaflets with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation. Normal velocity.
Aortic valve/Aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Moderate RV dilation.
Right atrium: Moderate right atrial dilation.
Tricuspid valve: The tricuspid valve appears mildly thickened with septal prolapse, and moderate tricuspid regurgitation. Elevated velocity consistent with moderate pulmonary hypertension.
Pulmonic valve/Pulmonary artery: The pulmonic valve is normal in morphology and mobility. The MPA appears mildly dilated. Normal pulmonic outflow velocities with laminar flow. No PI.
Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.
Heart rhythm: ECG reveals a sinus rhythm with an average HR of 190bpm.

2-Dimensional Measurements

Ao diam (cm)	1.2
LA diam (cm)	3.3
LA:Ao (Swe)	2.75
IVS thickness (cm)	0.6
LVID diastole (cm)	3.7
PW thickness (cm)	0.6
LVID systole (cm)	1.8
FS (%)	51

Doppler Measurements

PV Vmax (m/s)	0.55
AoV Vmax (m/s)	0.86
MR Vmax (m/s)	5.1
TR Vmax (m/s)	3.6
TR PG (mmHg)	52

INTERPRETATION OF THE FINDINGS

The cause of the murmur is chronic degenerative valve disease causing severe mitral and moderate tricuspid regurgitation. Four chamber dilation indicates the risk for spontaneous congestive heart failure is elevated. Moderate pulmonary hypertension is noted, which is likely secondary to a combination of chronic LA pressure elevation and potentially some degree of primary airway disease based upon the CXR interpretation/signalment. No additional issues are identified.



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In light of a progressive cough and severity of disease on echocardiogram, there is concern for early congestive heart failure and institution of full cardiac supportive medications is recommended as below. Sildenafil is also recommended based upon the findings and presenting symptoms. The radiographic infiltrate does not appear significant enough to explain severe dyspnea, and concurrent antibiotic coverage may be reasonable as well to cover all the bases. If the cough persists despite therapy, Hydrocodone should be utilized for quality of life.

The average survival time of canine patients with active pulmonary edema is 8-9 months 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

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- Consider hospitalization for O2 support/stabilization if needed. In this instance, institute injectable Lasix and Baytril or similar, oral pimobendane and Sildenafil as below.
- If able to be treated out patient, the following medications are recommended:
- Institute furosemide 1-2mg/kg PO q12h.
- Institute spironolactone 1-2mg/kg PO q12h.
- Institute Pimobendan 0.3mg/kg PO q12h .
- Institute Sildenafil 1-2mg/kg PO q12h.
- Institute Baytril or similar antibiotic if indicated.
- Pending response, consider hydrocodone with homatropine 0.2-0.4mg/kg up to q4-6 hours PRN for any residual mechanical cough in the face of normal sleeping respiratory rates.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.
- Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home.
- Elective anesthesia is not advised.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

PLAN

- Monitor renal values and BP in 1-2 weeks. If BP >130mmHg, institute ACEI 0.5mg/kg PO q12h. Monitor renal panel/BP every 3-4 months lifelong.
- Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.



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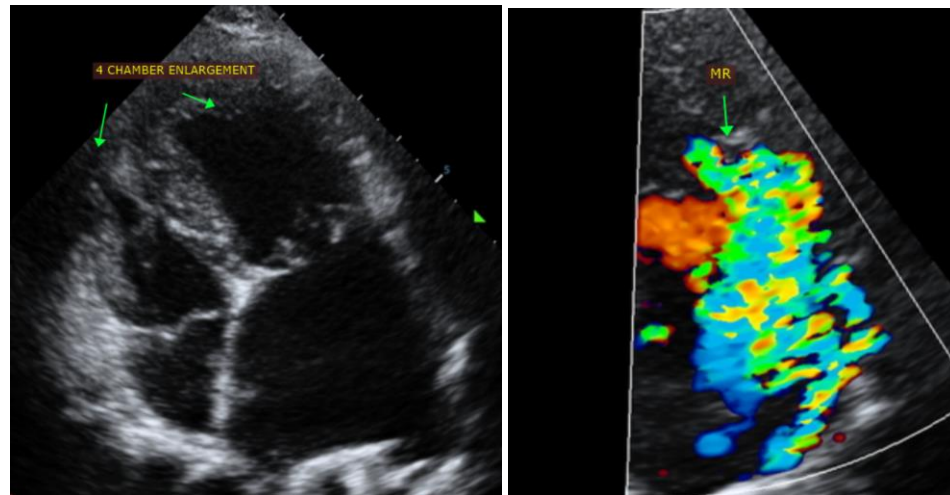
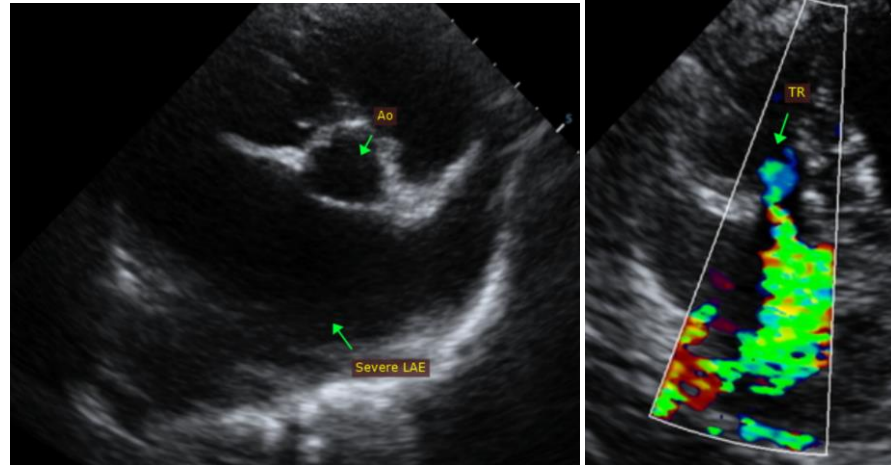
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IMAGES



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. 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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