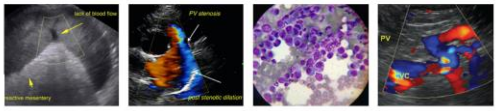
Mass Veterinary Specialty Services
1-413-734-1292



SonoPath
Clinical Sonography & Telecytology
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PATIENT
Lola Wilson

SPECIES
Canine

BREED
Shih Tzu

SEX
Female Spayed

AGE
11 years

WEIGHT
13.75lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Specialty Services

REFERRING VET
Dr. Masloski

INVOICE
21012

DATE
9/14/21

PRESENTING CLINICAL SIGNS

History: Lola is referred to evaluate a heart murmur and collapsing episodes vs seizures noted at home. Her first episode occurred 5th of July after she had received some trazadone. The second event was 3rd September. During the episodes, Lola cries like she is taking her last breath, goes limp and appears to stop breathing for 3-5 minutes. The episodes have both occurred around midnight while Lola was sleeping. Lola is otherwise doing well with no labored breathing and no C/S/V/D. Her appetite and activity level remain normal. CV/RESP: NSR grade I-II/VI murmur with PMI left apical area PSS lung fields clear. BP: 140mmHg x4

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is mildly decreased with adequate myocardial function. LV wall thicknesses are borderline.
Left atrium: The left atrium is normal.
Mitral valve: The mitral valve is normal with no prolapse into the left atrial lumen. No MR.
Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Normal RV.
Right atrium: Normal RA dimension.
Tricuspid valve: The tricuspid valve appears mildly thickened with mild tricuspid regurgitation; velocity consistent with mild to moderate pulmonary hypertension.
Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. Trace 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 tachycardia with an average HR of 200bpm.

2-Dimensional Measurements

Ao diam (cm)	1.3
LA diam (cm)	1.8
LA:Ao (Swe)	1.4
IVS thickness (cm)	0.84
LVID diastole (cm)	1.5
PW thickness (cm)	0.78
LVID systole (cm)	0.85
FS (%)	43

Doppler Measurements

PV Vmax (m/s)	1.1
AoV Vmax (m/s)	0.96
MR Vmax (m/s)	NA
TR Vmax (m/s)	3.5
TR PG (mmHg)	52

INTERPRETATION OF THE FINDINGS

The primary abnormality identified is mild to moderate pulmonary hypertension. The right heart is not significantly enlarged, and this is of unknown significance at this time. This breed is predisposed to both airway disease and development of pulmonary hypertension, and follow up is certainly advised. Additionally, the LV chamber is small with mildly increased wall thickness, which may suggest volume depletion (BP normal ruling out SHT). **Baseline lab work is strongly recommended.** No additional issues are identified, and the overall cardiac output appears sufficient.

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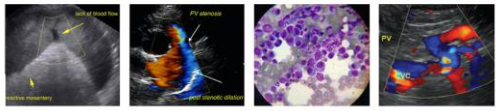

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While pulmonary hypertension can certainly cause **brief exertional** syncope, the situational component and length of these episodes would suggest they are unlikely to be related. An exception to this would be PTE-type events due to acute blood clot formation which are difficult to prove and uncommon. Full systemic evaluation may be useful. Other systemic/neurologic possibilities should also be considered as these are more likely. The screening ECG shows a sinus tachycardia, which is suspected to be stress-induced. A holter monitor could be considered if no underlying cause is identified; however, in this particular breed this is of low suspicion.

Prognosis is guarded long-term as the patient is asymptomatic aside from in frequent episodes.

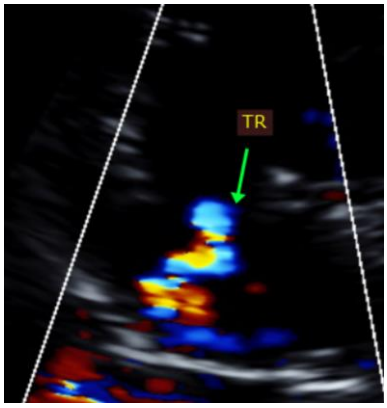
RECOMMENDATIONS

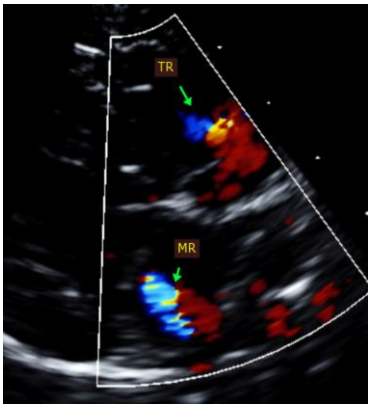
- No obvious indication for cardiac supportive medications.
- A holter monitor can be considered if no cause for the episodes is identified.
- Baseline labs if not recently performed.
- Consider full systemic evaluation as discussed.
- Monitor for any development of respiratory signs.
- Omega fatty acid 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.

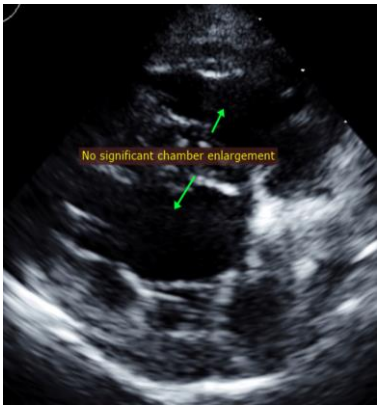
PLAN

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

IMAGES







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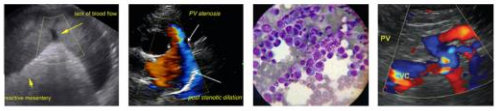

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)