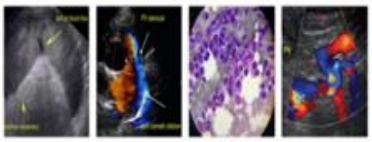
Mass Veterinary Services



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Luna Hencesmith

SPECIES
Canine

BREED
Golden Retriever

SEX
Female Spayed

AGE
3.9 years

WEIGHT
64.3lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
26090

DATE
8/30/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. History Subaortic Stenosis, moderate with increased gradient from when a puppy. Currently, Lula is doing well; no respiratory issues. -Pertinent previous echo findings (11/26/19 Emily Karlin, DVM, DACVIM-Cardiology): LA 3.12 cm; LA:Ao 1.24; LV 3.88 cm; IVS 1.02 cm; PW 1.02 cm; LVOT Vmax 3.81 m/s; 58 mmHg); LV wall thickness normal-minimally thickened; focal narrowing/ridge below aortic valve; 1+ AI. On exam today: NSR, grade III/VI murmur noted at heart base, PSS, lung fields clear. BP: 120mmHg x 4. Current medications: 1) fish oils 2) vitamin E *No sedation for study.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV chamber is normal without significant LV hypertrophy. The endocardium appears hyperechoic. Mild papillary muscle hypertrophy.
Left atrium: The left atrium is normal.
Mitral valve: The anterior mitral valve leaflet is thickened. SAM is visualized on 2D imaging. No significant mitral regurgitation is appreciated.
Aortic valve/aorta: Mild subaortic narrowing with a hyperechoic ridge is visualized. Velocity through the region, consistent with a moderate to severe stenosis. The aortic valve appears normal. Trivial aortic insufficiency.
Right ventricle: Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.
Right atrium: Normal RA dimension.
Tricuspid valve: The tricuspid valve appears normal with no TR.
Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.
Pericardium/other: No pericardial or pleural effusion noted. No congenital shunts appreciated. No obvious cardiac masses.
Heart rhythm: ECG reveals a sinus rhythm with an average HR of 120bpm.

2-Dimensional Measurements

Ao diam (cm)	2.9
LA diam (cm)	3.0
LA:Ao (Swe)	1.0
IVS thickness (cm)	1.0
LVID diastole (cm)	3.4
PW thickness (cm)	1.2
LVID systole (cm)	1.6
FS (%)	53

Doppler Measurements

PV Vmax (m/s)	1.3
AoV Vmax (m/s)	4.2
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

INTERPRETATION OF THE FINDINGS

Subaortic stenosis (SAS) persists with elevated blood flow velocity through the LVOT. Further contributing to the outflow obstruction appears to be a dysplastic mitral valve, which was not noted previously. This likely contributes a dynamic component to the obstruction. The good news is, while the obstruction is mildly progressed compared to the prior study, the overall left heart dimensions appear normal. This may suggest a heart rate dependent phenomenon. No additional issues are identified.

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While atenolol could be considered with a significant obstruction, there is a low resting heart rate on exam and no significant cardiac remodeling making this unnecessary. Reassessing the need for heart rate control is recommended going forward, particularly should any syncope be noted.

Prognosis is guarded yet highly variable with many dogs in the severe category succumbing to malignant arrhythmias by mid-life and others maintaining asymptomatic status long term.

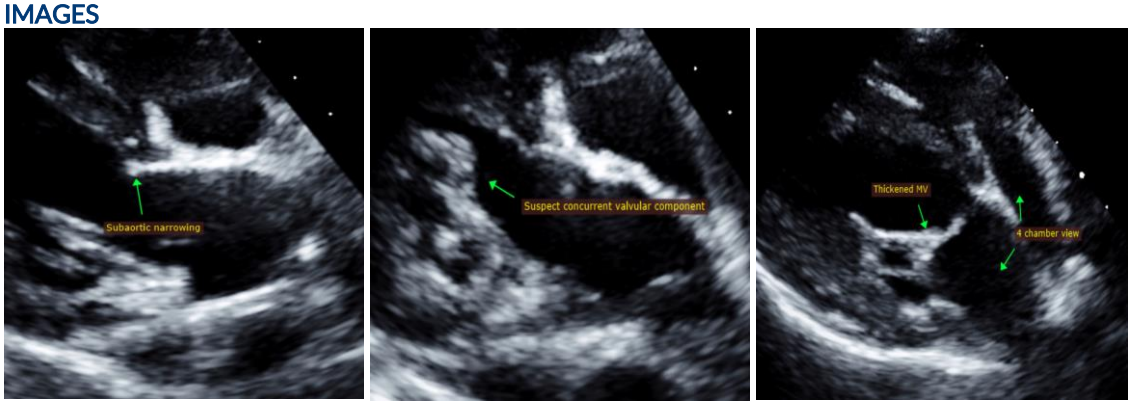
RECOMMENDATIONS

- Omega fatty acid supplementation and mild salt restriction may be of some long term anti-arrhythmic benefit.
- Anesthetic risk is moderate if needed. **Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless clinically indicated.** Avoid ketamine and acepromazine due to systemic vascular effects. Pre-oxygenate for 5-10 minutes prior to induction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas. Mild IV fluid restriction is advised. Recommend prophylactic antibiotics for any orthopedic or dental procedure in the future given predisposition to endocarditis. Monitor for arrhythmias both intra and post-operatively.
- Monitor for development of labored breathing, exercise intolerance or collapse episodes, as AS patients are more predisposed to development of arrhythmias than to CHF.
- Moderate lifelong exercise restriction is advised.

PLAN

- Recommend conservative monitoring with a recheck echocardiogram in 6-12 months, sooner if any development of clinical signs.

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

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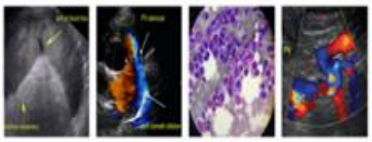

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findings or if I can be of any further assistance, please contact me.

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)