



**PATIENT**

Remmington Doolin

**SPECIES**

Canine

**BREED**

Golden Retriever

**SEX**

Female Intact

**AGE**

1 year

**WEIGHT**

70.5lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

J. Stegemoller, DVM

**HOSPITAL NAME**

Bonnars Ferry  
Veterinary Clinic

**REFERRING VET**

Dr. Lang

**INVOICE**

27268

**DATE**

11/3/22

**PRESENTING CLINICAL SIGNS**

History: Recheck echo – previously WSU. Has been doing well after diagnosis HR - 104 before sedation when very happy in the hospital. BP when relaxed with butorphanol - 126/75mmHg. -Current medications: Atenolol 0.39mg/kg (12.5mg q12h).

-Sedation: Butorphanol.

-Pertinent previous echo findings (2/2022 WSU): SAS, PG: 100mmHg, MV dysplasia with SAM. IVSd: 1.1, LVWd: 1.1, AV max: 1.9, moderate to severe LVH, LA: normal.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The mitral valve leaflets appears thickened and mildly elongated with no obvious prolapse and mild mitral regurgitation. Normal velocity. No left atrial dilation. Normal LV diameter with normal myocardial function. The left ventricular walls are mildly hypertrophied (1.1/1.2cm). Mildly hypertrophied papillary muscles. Sub-aortic narrowing is visualized (see below). The aortic valve is mildly thickened. Moderate sub-aortic stenosis is present, with an elevated LVOT velocity. Mild aortic insufficiency. The tricuspid valve appears subjectively normal. No tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology. The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal PA outflow velocity. No pericardial or pleural effusion noted. No cardiac tumors identified.

**CARDIAC CHART**

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	5.2	NA	NM	1.2	36	70	NM
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	NM	4.2	1.0	32.0	3.3	4.4	2.8
<b>*Normal chamber parameters expressed as a mean value (SD)</b>				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Moderate sub-aortic stenosis (SAS) is identified causing elevated blood flow velocity through the LVOT and aortic valve. The velocity is indicative of a moderate pressure gradient (70mmHg), with only mild LVH. The mitral valve is also abnormal, with mild dysplasia and mild MR. Compared to what is available from the prior study, this suggests mild improvement on Atenolol, as the



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previous hypertrophy/gradient were considered severe. Mild MR is unchanged, and no left atrial enlargement has developed. No additional issues are identified.

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These findings would suggest a positive response to Atenolol therapy, which is certainly a good sign. Going forward, there will still remain risk for progression to clinical signs.

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Omega fatty acid supplementation may be of some long-term benefit.

**SEX**

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Prognosis is guarded yet highly variable, with many dogs in the moderate to severe category succumbing to malignant arrhythmias by mid-life and others maintaining asymptomatic status for some time. Serial echocardiography is recommended lifelong to assess for progression and risk for complication as the patient matures. Monitor for development of labored breathing, exercise intolerance or collapse episodes, as SAS patients are more predisposed to development of arrhythmias than to CHF. Mild exercise restriction is advised lifelong.

**AGE**

1 year

Anesthetic risk is mild. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless clinically indicated. Avoid ketamine and acepromazine due to systemic vascular effects. Mild IV fluid restriction is advised. Recommend prophylactic antibiotics for any orthopedic or dental procedure in the future given predisposition to endocarditis.

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**PLAN**

Continue Atenolol as prescribed.

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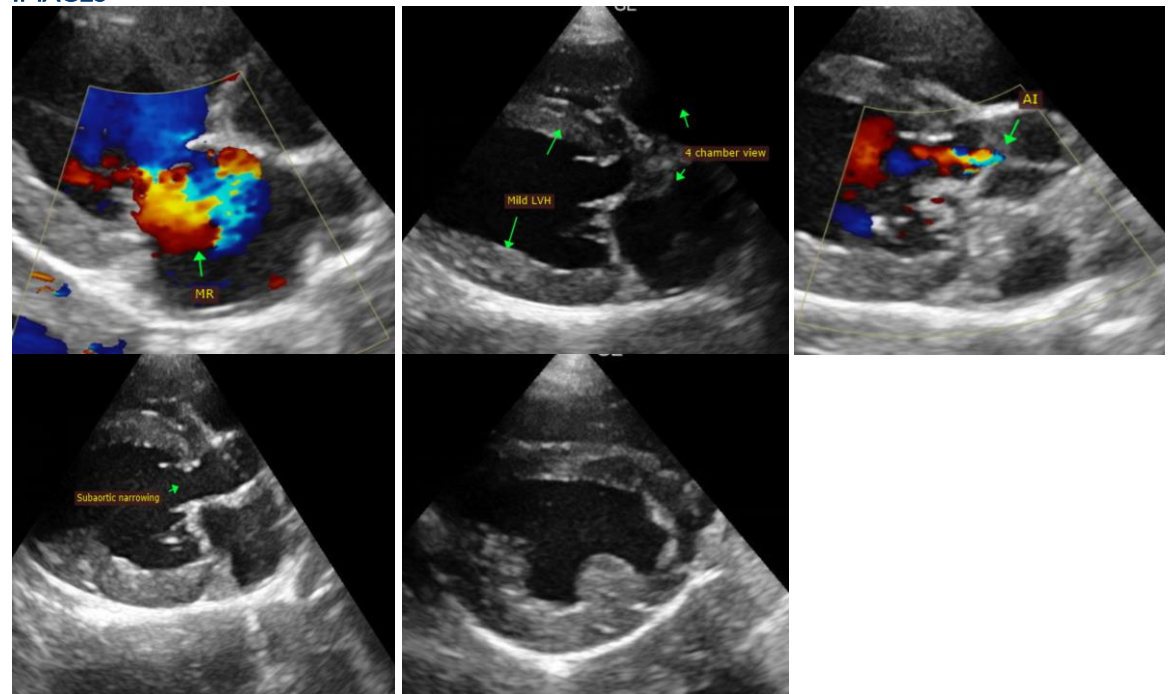
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(Cardiology)

Recommend recheck echocardiogram annually, sooner if clinical signs arise.

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**IMAGES**



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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.

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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.

**BREED**

Golden Retriever

Maggie Machen Lamy, DVM  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

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