



**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT**  
Norm Loger  
History: Came in for pre-op mass removal; grade 5/6 murmur with palpable thrill noted. No marked lethargy/coughing noted.  
Abnormal PE/Chem/CBC/UA Results: 4/19/23: CBC wnl; PHOS 2.3 (2.9-6.6); T4 wnl

**SPECIES**

Canine

**BREED**

Golden Retriever

**SEX**

Neutered male

**AGE**

12 years

**WEIGHT**

78.5 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Jill Rumachik

**HOSPITAL NAME**

Clarity Imaging LLC

**REFERRING VET**

Eric Howlett

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The **mitral** valve appeared to have adequate apposition. The **left ventricle** presented minor concentric hypertrophy with adequate contractility and normal volume. The heart rate was contained at 80 bpm. Aortic outflow velocity was excessive in this patient with turbulence at the **left ventricular outflow** tract. The aortic valve was thickened and somewhat clubbed with post valvular aortic dilation. Fixed obstruction of the left ventricular outflow tract was noted by impingement of the left ventricular septum. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window. The

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			1.15	1.4	45		0.1
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)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT		5.0	1.5	78.5 lbs	3.4	3.9	

**ULTRASONOGRAPHIC FINDINGS**

Subaortic stenosis pattern, compensated at this time with mild left ventricular hypertrophy.

**INVOICE**

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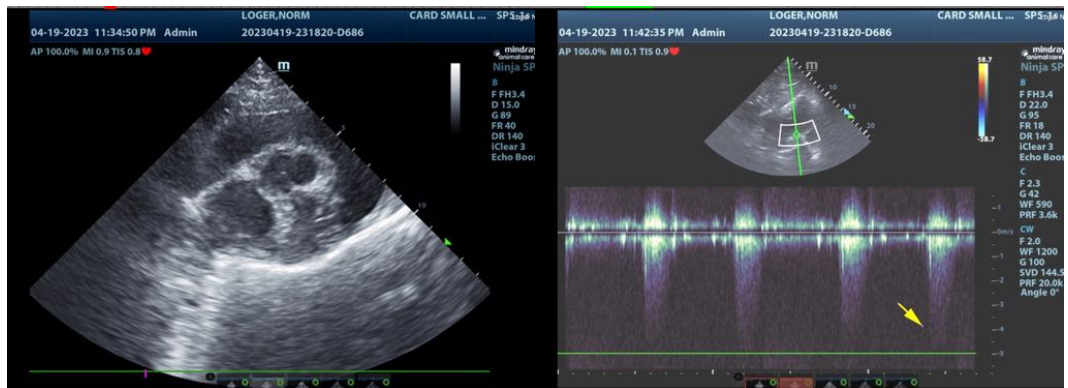
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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

There is some mild anesthetic risk in this patient. No specific treatment is recommended unless basal heart rate is > 120 bpm or exercise intolerance is an issue then Atenolol therapy is indicated. Torbutrol pre-med, Propofol induction and Isoflurane maintenance is recommended. Preoperative antibiotics for 5 days and 5 days post are recommended to ensure that endocarditis does not initiate. Note that the a weak signal was noted at the left ventricular outflow tract; therefore, the velocity noted is approximate; however, there was no evidence of decompensation noted. If this patient has had a murmur its entire life then this is likely a manifestation of subaortic stenosis; however, history of endocarditis inducing these lesions cannot be completely ruled out.





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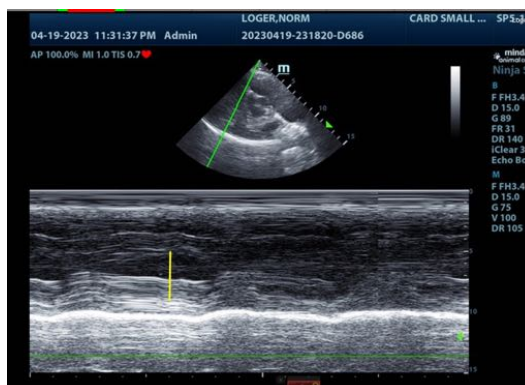
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com