



PATIENT

Freddy Keats

SPECIES

Canine

BREED

Golden Retriever

SEX

MN

AGE

4 years

WEIGHT

76.5 lbs

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP
(Canine and Feline)

IMAGING PERFORMED BY

Kim Liedberg

HOSPITAL NAME

SVS Imaging WI

REFERRING VET

Dr Shari Severson,
Clinton Veterinary
Clinic

INVOICE

13666

DATE

1/27/22

PRESENTING CLINICAL SIGNS

1/6 systolic heart murmur noted during a routine exam. No coughing. No radiographs or BW done. Freddy is asymptomatic. Given fear free medication for echo.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	--	--	NM	1.36	25	53.8	0.54
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	118	1.6	1.3	--	3.9	4.0	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. No evidence of insufficiency on color doppler assessment. The **left ventricle** presented normal thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was mildly subnormal as evidenced by the fractional shortening measurement above and subjective evaluation of the LV function. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. Trace TR present on color doppler assessment. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** 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. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure with mild LV hypocontractility
- Trace TR



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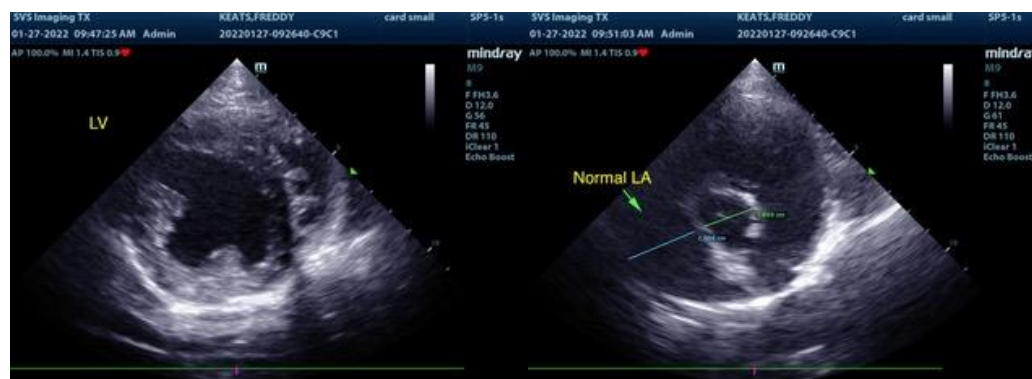
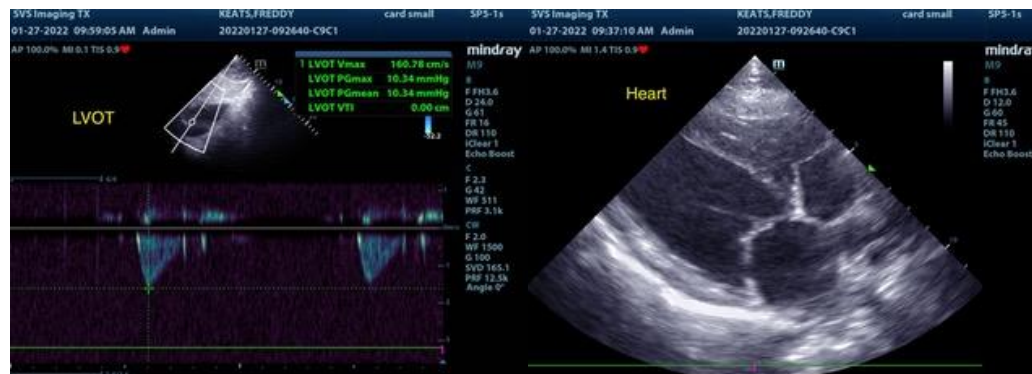
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cardiac structure of this patient is normal with mild LV hypocontractility, which is nonspecific. This may potentially indicate athletic state given the young age of the patient, although possible systemic disease, endocrine disease (such as hypothyroidism) may be contributing factors. DCM criteria is not present. An obvious cause of the murmur was not definitively evident without evidence of a shunt, significant valvular insufficiencies or stenotic disease, specifically no evidence of subaortic or aortic stenosis given the patients breed. Given the lack of clinical signs and low-grade murmur, a physiologic flow murmur may be present, assuming no evidence of volume changes, such as dehydration or anemia, while a small flow abnormality (not visualized here) cannot be definitively excluded. Regardless, given the lack of left or right heart chamber enlargement and low-grade murmur, conservative monitoring at this stage would be appropriate. No indication for cardiac medications.

Sonographic monitoring of the heart is recommended with recheck echocardiogram suggested in 6 months or sooner if clinical signs suggestive of heart disease arise or if murmur intensity increases.





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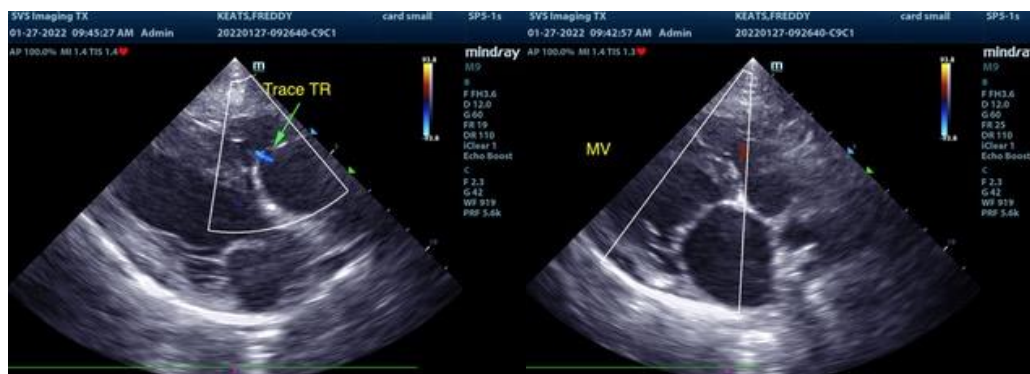
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com