



PATIENT

Castiel Hathaway

SPECIES

Canine

BREED

Alaskan Malamute

SEX

Male Neutered

AGE

1.3 years

WEIGHT

100lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jack Reese

HOSPITAL NAME

Willow Run Veterinary
Clinic

REFERRING VET

Dr. Arnold

INVOICE

47797

DATE

5/7/26

PRESENTING CLINICAL SIGNS

History: Heart murmur noted as puppy; seemed to resolve as patient neared maturity but today a grade 3/6 heart murmur was once again noted. Asymptomatic.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Incorrect image labeling; confirmed to be the correct patient by JR. Normal mitral valve with no obvious prolapse into the left atrial lumen. No mitral regurgitation with a normal left atrial dimension. Normal LV diameter with adequate myocardial function. Normal LV wall thickness. A small ventricular septal defect is noted just below the aortic valve; flow appears L-R on color flow imaging (not assessed on spectral doppler). The tricuspid valve appears normal in form and function. No TR. The right heart is mildly enlarged. The pulmonic and aortic valves are normal in morphology and mobility. No aortic or pulmonic insufficiency. Normal aortic and pulmonic outflow velocity. No pericardial or pleural effusion noted. No obvious cardiac tumors.

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)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			NM	1.3	40	72	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)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT		2.0	1.4	45.4	2.9	4.2	2.5
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
*Note: All measurements based upon multi-modal images and methods. An average value is reported.				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

The cause of the murmur is a ventricular septal defect (VSD). The shunt is allowing left to right flow; however, the max velocity is not assessed. The LA and LV are normal suggesting low risk for complication at this time. Of some concern, the right heart does appear mildly enlarged without explanation. This would not develop secondary to a VSD. Consider referral to an attending Cardiologist for advanced imaging in any congenital case, particularly given these findings.



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No cardiac medications are clearly indicated. Continued assessment for progressive LA or LV dilation in the future will help predict long term prognosis, which is fair at this time. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

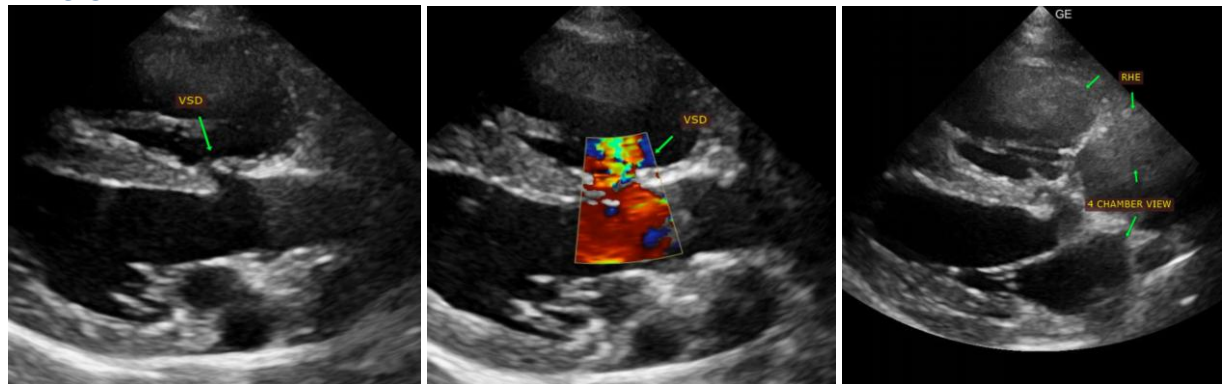
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively 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

Consider referral as discussed.

If declined, recommend conservative monitoring with a recheck echocardiogram in 1 year, 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 findings or if I can be of any further assistance, please contact me.

Maggie Machen Lamy, DVM
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