



PATIENT

Emma Lou Marie

SPECIES

Canine

BREED

Border Collie Mix

SEX

Female Spayed

AGE

4 months

WEIGHT

32.5lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Dana Alterman,
RDCS, LVT

HOSPITAL NAME

Eubank Animal Clinic

REFERRING VET

Dr. Russman

INVOICE

21098

DATE

9/20/21

PRESENTING CLINICAL SIGNS

History: Grade 4/6 bilateral murmur.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 20mm/mV. The average heart rate is 120bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal in dimension. The LV chamber appears normal in diastole. The systolic function is borderline normal. A small restrictive ventricular septal defect is seen just below the aortic valve. The shunt is left to right based upon color flow (max 5m/s). The left atrium is normal. The right atrium is normal in size. The right ventricle appears normal. The mitral valve is normal in structure and mobility. Blood flow through the RVOT is normal in velocity with laminar flow. No significant MPA dilation. Trace PI. Normal LVOT velocity. Trace AI. There is no pleural or pericardial effusion seen. There are 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	NA	NA	NM	1.1	29	60	0.4	
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	NM	1.5	1.8	14.7	2.1	3.4	2.4	
*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)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is a perimembranous ventricular septal defect (VSD). The defect is relatively small in dimension, with left to right flow. The left heart is normal in dimension indicating shunt volume is small. A small aortic leak is noted which should be monitored going forward. It is worth mentioning that the systolic function is borderline normal in this patient, assuming no sedation for utilized this is of unknown significance and should be reassessed in the future. Most small congenital shunts are able to live a normal life free of medications however the true hemodynamic consequence cannot be determined prior to assessment when full stature. It should be noted that small concurrent defects are easily missed and referral for evaluation with an attending cardiologist for advanced diagnostics may be considered in any congenital case. The ECG is unremarkable with a normal sinus rhythm.

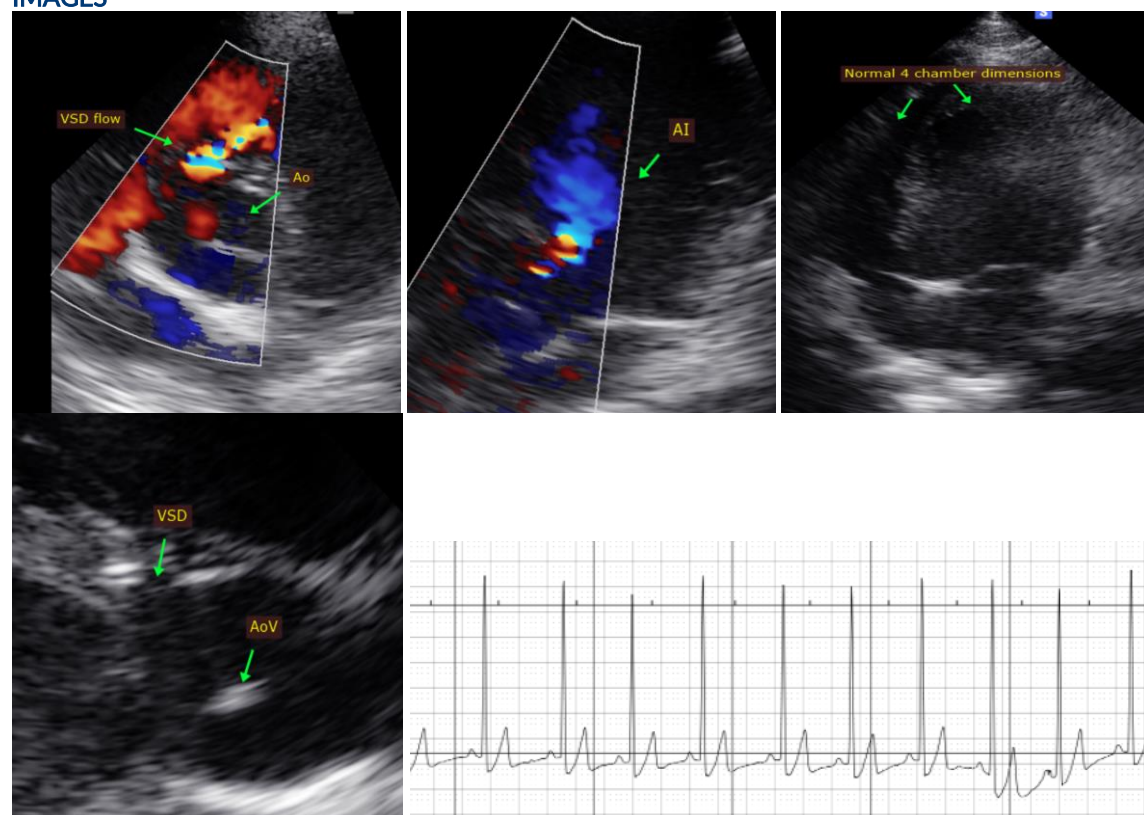
No cardiac medications are indicated. Anesthetic risk is low, however mild IV fluid restriction is advised. Ideally recommend annual monitoring for progressive dilation and need for medications.

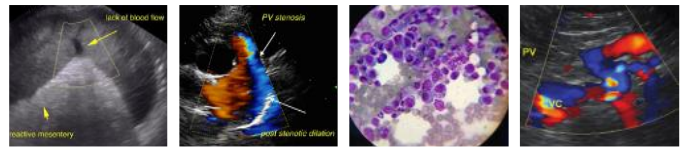
Breeding is NOT advised in a patient with congenital disease.

Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

Recommend conservative monitoring with a recheck echocardiogram in 8-12 months, sooner if any development of clinical signs.

IMAGES





PATIENT

Emma Lou Marie

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.

SPECIES

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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.

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Border Collie Mix

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

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