



PATIENT

Oliver Grau

PRESENTING CLINICAL SIGNS

History: Grade 4/6 heart murmur.

SPECIES

Canine

BREED

Basset Hound

SEX

Male

AGE

20 weeks

WEIGHT

30lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

Warren Animal
Hospital

REFERRING VET

Dr. Duffy

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve with no obvious prolapse into the left atrial lumen. Mild central diastolic mitral regurgitation with no left atrial dilation. Normal LV with adequate myocardial function. Normal LV wall thickness. A small VSD is suspected just below the aortic and tricuspid valves. The shunt is suspect to left to right, although max velocity is not assessed. Color flow is inconclusive, making this a suspicion rather than a diagnosis. The tricuspid valve appears normal in form and function. Trace TR. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. The pulmonic valve is normal in morphology and mobility. Normal aortic outflow velocities. The aortic valve appears thickened in some views, although inconsistent. The aortic root appears dilated. No aortic or pulmonic insufficiency. Normal pulmonic outflow velocities. 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			1.2	1.2	38	69	0.2
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	1.1	1.0	13.6	2.3	3.4	2.1
*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

Multiple small abnormalities are visualized. First, there is suspicion for a restrictive perimembranous ventricular septal defect (VSD). This is suspicious as color flow is inconclusive; however, 2D and Spectral doppler are suggestive. There is also an abnormal aortic valve; however, flow through the region appears normal. Finally, diastolic MR is noted, which can be seen with arrhythmias, and a baseline ECG is strongly recommended. No additional issues are identified; however, it is important to note that small defects are easily missed without advanced diagnostics such as a bubble study, angiography, etc.

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Referral to a local Cardiologist is recommended for any patient with congenital disease, particularly with multiple defects. The goal of this would be to confirm the diagnosis and ensure no additional defects are missed. Based upon what is seen here, prognosis is guarded long-term as many small VSD patients will live a normal life free of complications.

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Treatment of an asymptomatic patient with a VSD is of no known benefit. Reassessment is advised prior to utilizing medications.

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Mild lifelong activity restriction is advised.

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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.

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Patient may be at risk lifelong for progression to left-sided congestive heart failure, development of arrhythmias, and/or sudden death. Monitor closely for any development of associated clinical signs, including changes in RR/RE, cough, syncope or significant exercise intolerance.

WEIGHT

30lbs

PLAN

Consider referral as discussed.

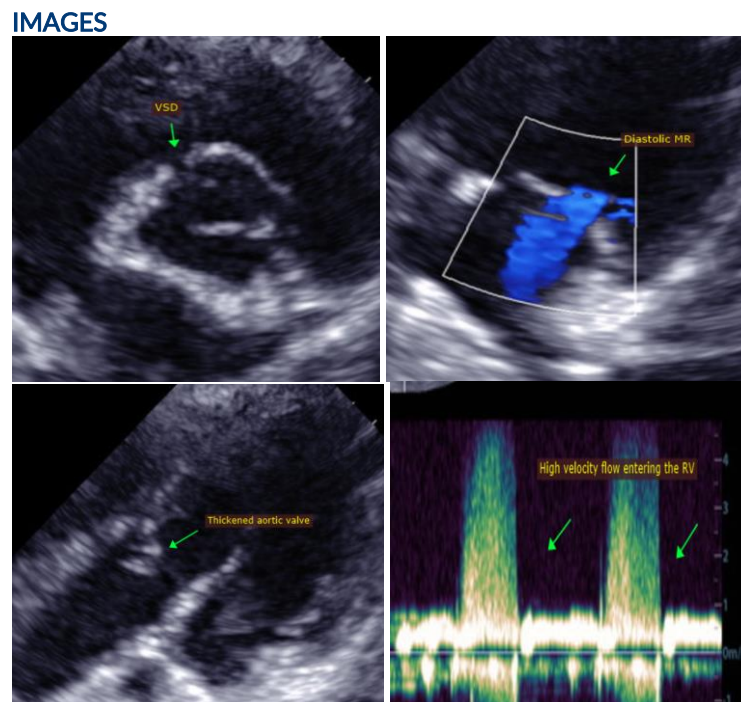
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(Cardiology)

Recommend conservative monitoring with a recheck echocardiogram in 6-12 months (or once full stature), sooner if any development of clinical signs.

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The information and recommendations provided are based on the images presented by the referring



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veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

Canine

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

Basset Hound

Maggie Machen Lamy, DVM
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info@sonopath.com

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