

**PATIENT**

Kiwi Galloway

**SPECIES**

Canine

**BREED**

Lab Mix

**SEX**

Female Spayed

**AGE**

11 months

**WEIGHT**

45lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Lindsey Daniel, DVM

**HOSPITAL NAME**

Affordable Vet  
Services

**REFERRING VET**

Dr. Thorne

**INVOICE**

28629

**DATE**

1/30/23

**PRESENTING CLINICAL SIGNS**

History: Moderate systolic heart murmur.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve leaflets with no obvious prolapse into the left atrial lumen. No mitral regurgitation. Normal left atrial dimension. Normal LV diameter with adequate myocardial function. The LV wall is normal. The tricuspid valve appears mildly thickened with no obvious tricuspid regurgitation present. The right heart is prominent. Mild pulmonic stenosis is suspected at the level of the valve, although outflow velocities do not document elevation. The PV is not well visualized; however, post-stenotic dilation is seen. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. Normal outflow velocity. No obvious congenital shunts. No pericardial or pleural effusion noted.

**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	1.3	46	79	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	200	1.3	1.4	20.4	2.5	3.3	1.8
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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 diagnosis is mild pulmonic stenosis (PS); however, the valve itself is not well visualized and other ancillary possibilities should be considered. (coronary anomaly, super valvular stenosis, etc.). The overall right heart does not appear significantly affected supporting a mild abnormality. No additional obvious issues are identified.

Any congenital case should ideally be offered referral to an attending Cardiologist as the gold standard, in order to confirm the presumptive diagnosis and assess for other small defects that are difficult to identify. This often requires advanced diagnostics such as a bubble study and may alter treatment and prognostic information.



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Assuming the diagnosis remains mild PS, medications nor surgery are typically recommended as the majority of mild dogs will live a normal life span without associated clinical signs and long-term prognosis is good. Medical management includes drugs that will slow heart rate and lessen the obstruction. The obstruction will worsen at higher heart rates, so maintaining a slow rate can help avoid clinical signs. Commonly, beta blocker medications such as Atenolol are used to control the heart rate; however, in mild cases this is not warranted.

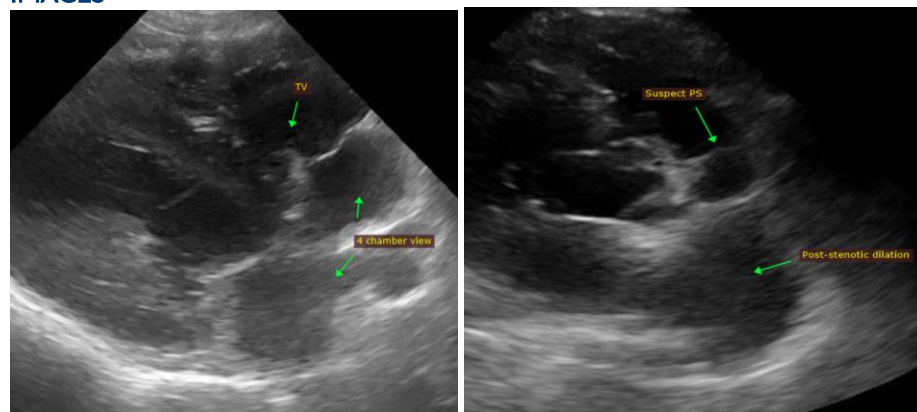
Monitor at home for symptoms including exercise intolerance, difficulty breathing, abdominal distention and/or syncope (fainting). Mild activity restriction is advised lifelong.

Anesthetic risk is considered mild if needed. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate. Avoid excessive vasodilation/hypotension. Pre-oxygenate for 5-10 minutes prior to induction. A reasonable protocol would be as follows: premedicate with opioid/benzodiazepine, propofol or alfaxalone induction, isoflurane maintenance. Monitor ECG, BP as is standard.

**PLAN**

Recommended referral for advanced evaluation. If declined, recommend recheck echocardiogram in 1 year, sooner if any clinical signs arise.

**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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