



PATIENT

Bridger New Hope
Rescue

SPECIES

Canine

BREED

Mix

SEX

Male

AGE

~12 weeks

WEIGHT

18.2lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Lindsey Daniel, DVM

HOSPITAL NAME

Countryside
Veterinary Clinic

REFERRING VET

Dr. Rider

INVOICE

28877

DATE

2/8/23

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 obvious mitral regurgitation. Normal left atrial dimension. Normal LV diameter with adequate function. The LV wall appears normal. The tricuspid valve appears normal with no insufficiency seen. Mild right atrial dilation. Mild right ventricular hypertrophy and dilation. Moderate to severe pulmonic stenosis is identified; however, the valve itself is not clearly visualized. Moderate post-stenotic dilation. Trivial PI. The aortic valve appears to have normal morphology and mobility with a normal outflow velocity. No obvious cardiac shunts are visualized. 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	1.2	39	70	0.3
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	130	1.4	4.3	8.3	2.0	2.7	1.6
*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)
<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)
				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 moderate to severe pulmonic stenosis. The outflow velocity is elevated consistent with a significant stenosis and appears to be at the level of the valve. There is mild right heart enlargement noted, indicating the risk for complication is currently low. No other congenital abnormalities were visualized.

Referral for further evaluation and consultation with a local Cardiologist is highly recommended. My main concern in this case is the severity of disease will likely worsen as this young puppy matures. If a valvular stenosis is confirmed, balloon valvuloplasty is the gold standard therapeutic option and may improve long term outcome. If surgery is not a possibility for any reason, this



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patient's condition will likely limit lifespan, with many severe PS cases developing CHF by mid-life.

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Going forward, medical management with atenolol is recommended to decrease heart rate and lessen the presumed obstruction as below. I would not suggest initiating at this time however, as this puppy is very young with only mild RH enlargement. If surgery is declined, I would consider instituting this medication once he is at least 4 months of age, with a recheck in 6 months.

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Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). Mild exercise restriction is advised lifelong.

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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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PLAN

Referral for further evaluation is advised as discussed. If declined, once the puppy is 6mo old institute atenolol to effect: ¼ tab PO BID to start (up-titrate to desired effect). Goal is to suppress heart rate <120-140bpm even with stress/activity.

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Recheck echocardiogram in 6 months to screen for progression, sooner if clinical signs develop at home.

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IMAGES



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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.

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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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Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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