



DATE CLINICAL BACKGROUND & STUDY DETAILS

4.7.26 **History:** Grade 3-4/6 heart murmur.

Pertinent abnormal PE/Chem/CBC/UA Results: Labs: WNL. CXR showed mild cardiomegaly.

PATIENT

Current medications: None.

Blood Pressure: 170mmHg.

Sedation used: Not required to complete full diagnostic ultrasound.

Pertinent previous ultrasound results: No previous.

STAT: Not requested.

Imaging performed by: Stephanie Warga RDCS, RVT.

SPECIES

Canine

BREED

Bull Terrier

SEX

FS

AGE

10.13.15

WEIGHT

39.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

HOSPITAL NAME

Chadwell AH

REFERRING VET

Dr. Gold

INVOICE

47455

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve leaflets are mildly thickened with no obvious prolapse into the left atrial lumen. No mitral regurgitation. Normal left atrial dimension. Normal LV diameter with normal myocardial function. The LV wall is normal. The tricuspid valve appears normal with trace tricuspid regurgitation. Mild right prominence; however, no significant dilation or hypertrophy is identified. The pulmonic valve is difficult to visualize; however, a mildly thickened appearance is suspected. Severe elevation of pulmonic outflow velocities at the level of the valve. The PV leaflets are thickened and tethered. Mild post-stenotic dilation of the main pulmonary artery. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. No AI. 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	NM	NM	1.3	30	59	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	150	2.0	4.6	18.0	2.3	3.2	2.2
*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)

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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is elevated flow velocity through the pulmonary artery consistent with pulmonic stenosis. No sub or supra valvular components were identified at this time, making a purely valvular stenosis most likely. The degree of obstruction is severe based upon the maximum velocity/pressure gradient across the pulmonic valve; however, the right heart is not significantly enlarged, which is good news. Trace tricuspid regurgitation is also noted; however, no additional issues are identified. No mitral regurgitation is seen at this time. No additional issues are identified.

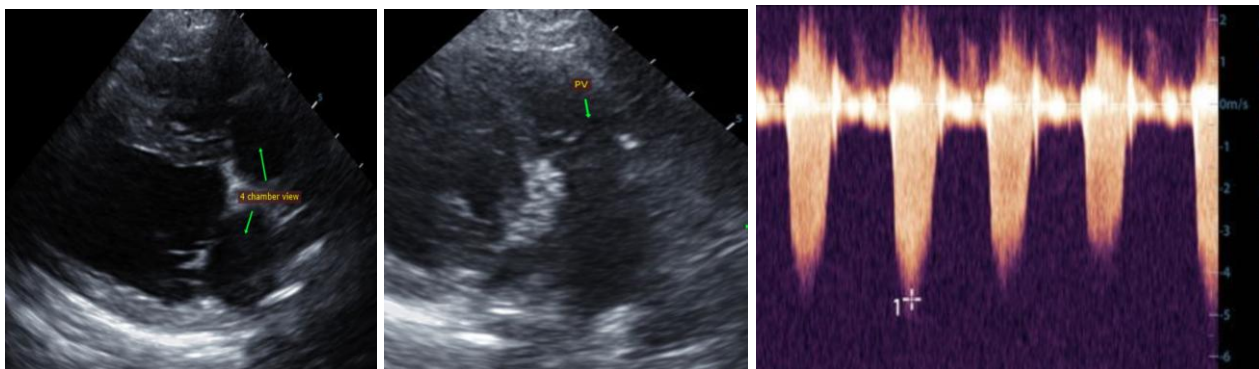
While severe PS is typically a limiting disease, a diagnosis at 11 years old is certainly a good sign. It is unlikely at this time point that the patient will experience right-sided CHF, although not entirely ruled out. In an asymptomatic dog without significant right heart enlargement, even with significant stenosis seen here, there is no obvious indication for Atenolol therapy at this time.

Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). Mild exercise restriction is advised. Omega fatty acid supplementation may have some long-term benefit, given these cases are predisposed to development of arrhythmias going forward.

Anesthetic risk is mild to moderate at this time. **Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless absolutely necessary.** Avoid vasodilators such as acepromazine. Mild IV fluid restriction is advised. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O₂ if possible. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary.

Recommend recheck echocardiogram annually to screen for concurrent disease, sooner if 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.

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