



PATIENT

Tucker Walters

SPECIES

Canine

BREED

Miniature Pinshcer

SEX

Male Neutered

AGE

11 years

WEIGHT

16.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Kitz, DVM

HOSPITAL NAME

Woodlands Animal
Hospital

REFERRING VET

Dr. Kitz

INVOICE

25379

DATE

7/13/22

PRESENTING CLINICAL SIGNS

History: Diagnosed with severe PS in 2019. Doing well on Atenolol. Grade 2-3/6 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 normal myocardial function. The LV wall is normal. The tricuspid valve appears normal with no tricuspid regurgitation present. Mild right atrial dilation. Mild right ventricular hypertrophy and remodeling indicative of pressure overload. Mild right ventricular dilation. Moderate elevation of pulmonic outflow velocities at the level of the valve; max PG 52mmHg. The PV leaflets are severely 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			1.4	1.2	59	92	0.22
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		1.1	3.6	7.5	1.6	2.3	1.15
*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

Pulmonic stenosis persists as has been previously documented. What is seen here is considered moderate with moderately increased gradient through the abnormal valve and mild right heart changes. This may reflect improvement on chronic Atenolol therapy; however, HR/alignment variability is suspected. Regardless, what is seen here appears largely stable. No additional issues are identified, such as mitral regurgitation.



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Moderate PS cases fall within a grey zone. There are many patients that will not experience clinical signs (syncope, right-sided congestive heart failure) throughout their lifetime, which is suspected to be the case here. Continue Atenolol lifelong.

SPECIES

Canine

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.

BREED

Miniature Pinshcer

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.

SEX

Male Neutered

AGE

11 years

PLAN

Continue Atenolol as prescribed.

WEIGHT

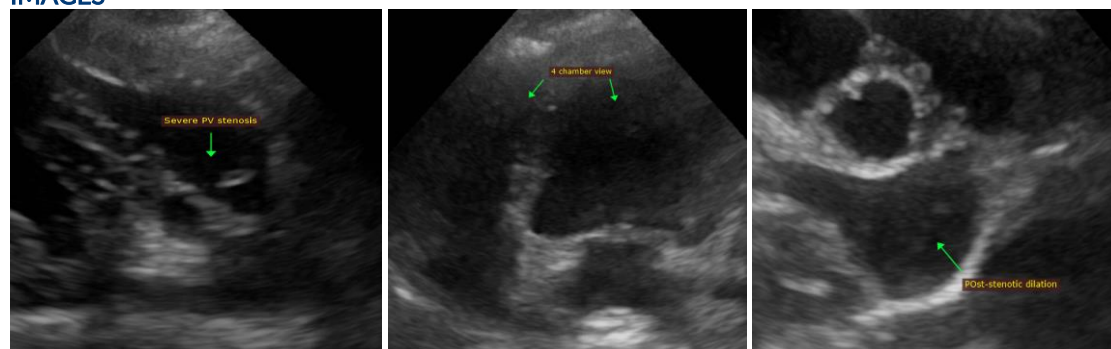
16.6lbs

Recommend recheck echocardiogram annually, sooner if syncope or signs of right-sided CHF develop.

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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.

REFERRING VET

Dr. Kitz

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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