IMAGING PERFORMED BY

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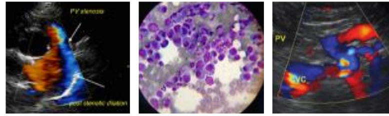

SonoPath

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PATIENT
Waffle Sye

SPECIES
Canine

BREED
Pomeranian

SEX
Female Spayed

AGE
9.26.11

WEIGHT
12lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME
Banfield Towson

REFERRING VET
Dr. Washington

INVOICE
25115

DATE
7.1.22

PRESENTING CLINICAL SIGNS

History: Recheck echo, previously evaluated at CVCA and diagnosed with severe PS (2018 and 2021). Grade 5/6 murmur.
-Current medications: Atenolol 10mg/mL 0.6mL BID until further directed.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (1/2021 CVCA): Severe PS, moderate RHE, no LHE. Numeric measurements not included; however, 2018 report shows PV max: 4.8m/s.
-STAT: Not requested
-Imaging performed by: Andi Parkinson, BS, RDMS.

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. Decreased LV diameter with adequate myocardial function. Septal flattening in systole. The LV wall appears normal. The tricuspid valve appears mildly elongated with trace insufficiency seen. Moderate right atrial dilation. Moderate right ventricular hypertrophy and remodeling indicative of pressure overload. Right ventricle is mildly dilated. Pulmonic outflow velocities are severely elevated at the level of the valve. The pulmonic valve appears thickened, and a valvular stenosis is suspected. There is mild post-stenotic dilation of the main pulmonary artery and branches. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. No obvious cardiac shunts are present. 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			NM	1.4	55	90	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	NM	1.1	6.0	5.4	1.5	1.8	0.8
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Hansson et al, Vet Rad and Ultrasound 2002				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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

Compared to what is available from the prior study, these findings are similar. Severe PS is unchanged with moderate right heart enlargement. The velocity through the stenosis is mildly increased comparatively; however, only the 2018 values are available. Regardless, in an asymptomatic patient these findings are of little progressive concern. The left heart remains normal, and no obvious additional issues are identified.

Given these findings, continue Atenolol lifelong as prescribed. A baseline heart rate should be assessed routinely with a target of 120-140bpm in hospital. Monitor for any associated clinical signs, such as exertional syncope or right-sided CHF.

Mild exercise restriction is advised lifelong. Fish oil may be of some long-term benefit.

Anesthetic risk is moderately elevated at this time. Referral to a facility with an Anesthesiologist should be considered. 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.

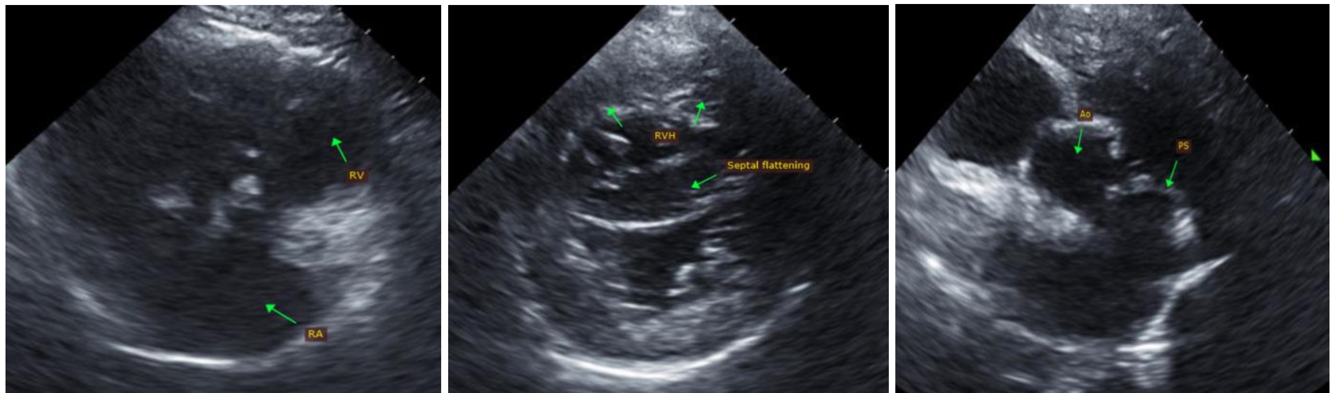
Prognosis remains guarded long-term with risk for right-sided CHF, worsening syncope and/or sudden death in the future.

PLAN

Continue atenolol as prescribed, maintaining a heart rate of 120-140bpm stressed.

An echocardiogram is recommended annually, 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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