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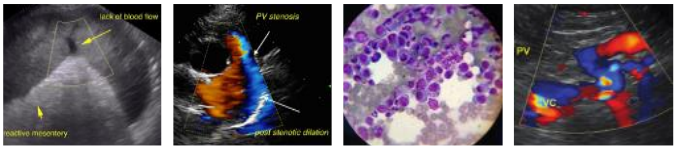
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Jones Rockwell

SPECIES
Canine

BREED
Boston Terrier

SEX
Male Neutered

AGE
6 years

WEIGHT
17.6lbs

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

IMAGING PERFORMED BY
Dave Stasiuk, RDMS, RDCS

HOSPITAL NAME
Alpine 24/7

REFERRING VET
Dr. Karagic

INVOICE
25453

DATE
7/20/22

PRESENTING CLINICAL SIGNS

History: Loud murmur.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild mitral valve thickening with minimal prolapse into the left atrial lumen. Mild eccentric mitral regurgitation. Mild left atrial dilation. No LV dilation with adequate myocardial function. Mild LV wall hypertrophy (1.0cm globally). The endocardium appears fibrotic. The papillary muscles are hyperechoic and hypertrophied. The tricuspid valve appears subjectively normal with no tricuspid regurgitation is seen. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. The pulmonic valve is normal in morphology and mobility. Normal pulmonic outflow velocity with laminar flow. No obvious pulmonic insufficiency. The aortic valve appears trileaflet with global thickening and decreased mobility; PG >100mmHg. No obvious sub-aortic ridge. Mild to moderate aortic regurgitation seen. No pericardial or pleural effusion noted.

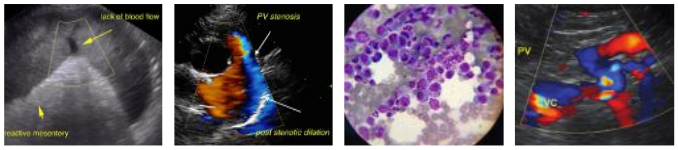
CARDIAC CHART

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	42	80	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	5.2	0.8	8.0	2.0	2.8	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)
**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)
				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 severe aortic stenosis (AS) causing significantly elevated blood flow velocity through the LVOT and aortic valve. There is also a mild to moderate leak in diastole. This is a congenital malformation of the aortic valve, leading to decreased excursion in systole. The LV walls are mildly increased in dimension indicating relative stability, however there is great concern for lifelong progression. There is also a significant amount of LV fibrosis present, which is what ultimately predisposes these cases to development of malignant arrhythmias. Mild MR is also noted, which is insignificant at this time. The remainder of the cardiac structure and function appears adequate.



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No surgical intervention is available at this time for this particular abnormality. Medical management through heart rate control is recommended as below, in hopes of decreasing the obstruction long term. Omega fatty acid supplementation may be of some long term anti-arrhythmic benefit.

Prognosis is guarded yet highly variable, with many dogs in the severe category succumbing to malignant arrhythmias early in life and others maintaining asymptomatic status long term. Diagnosing this condition in a 6-year-old dog is rare and may suggest a better long-term picture. Serial echocardiography is recommended lifelong to assess for progression and risk for complication. Monitor for development of labored breathing, exercise intolerance or collapse episodes, as AS patients are more predisposed to development of arrhythmias than to CHF. Moderate lifelong exercise restriction is advised.

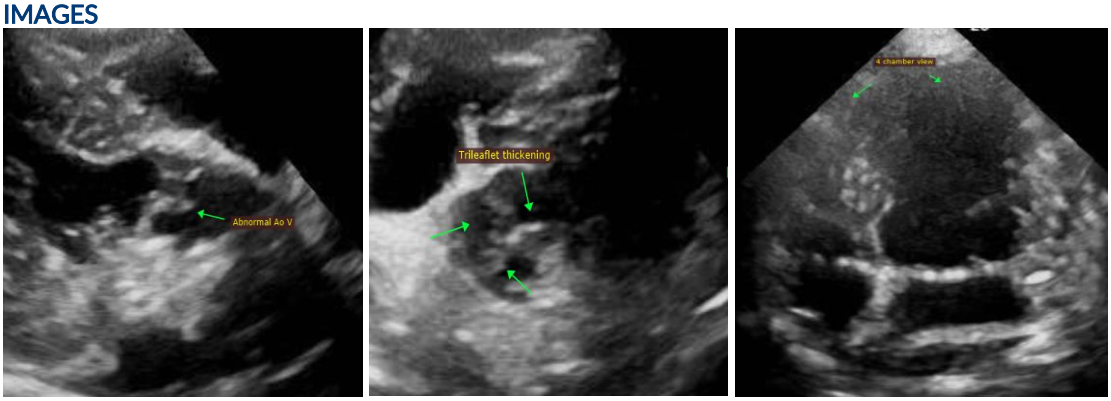
Once Atenolol is initiated, anesthetic risk is mild if needed. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless clinically indicated. Avoid ketamine and acepromazine due to systemic vascular effects. Mild IV fluid restriction is advised. Recommend prophylactic antibiotics for any orthopedic or dental procedure in the future given predisposition to endocarditis.

PLAN

Institute atenolol to effect: Initiate 6.25mg PO q12-24h and up-titrate to desired effect. Goal is to suppress heart rate <130bpm even with stress/activity.

Recommend recheck echocardiogram in 1 year, 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.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com