



PATIENT

Molly Gubernatis

SPECIES

Canine

BREED

Boxer

SEX

Female Spayed

AGE

11 years

WEIGHT

83.5lbs

PRESENTING CLINICAL SIGNS

History: Presented for dental prophylaxis and oral tumor biopsy. Pulmonary nodule L cranial lung lobe. New grade 3/6 heart murmur.

-ECG report: Ventricular arrhythmia.

-Pertinent abnormal PE/Chem/CBC/UA Results: WNL.

-Radiographs: Large consolidated opacity left cranial lung lobe.

-Current medications: Rimadyl 150mg 11/2 and intermittent previous.

-Sedation used: Not required for a full diagnostic ultrasound.

-STAT: Not requested.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Trace mitral regurgitation. Borderline left atrial dimension. No LV dilation with adequate myocardial function. LV wall thickness is normal. The tricuspid valve appears subjectively normal, with no tricuspid regurgitation. 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 pulmonic insufficiency. The aortic valve is thickened with trace aortic insufficiency. There is moderate aortic stenosis present (64mmHg PG). No pericardial or pleural effusion noted.

CARDIAC CHART

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Stephanie Pearce,
RDCS, RVT

HOSPITAL NAME

Hickory Veterinary
Hospital

REFERRING VET

Dr. Lyle

INVOICE

22329

DATE

12/7/21

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	2.6	NM	1.5	31	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	112	4.2	1.2	37.9	3.2	4.0	2.8
*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)
				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 moderate aortic stenosis causing an increased flow velocity through the orifice. The aortic valve appears thickened with a small leak, which suggests a valvular issue. Fortunately, there is no evidence of compensatory LV hypertrophy at this time; however, this should be monitored closely going forward. The LA is borderline enlarged indicating the risk for complication is currently low.

Valvular AS is most often congenital; however, the finding of a new murmur is atypical in a senior dog. Acquired disease is highly uncommon, particularly in asymptomatic dogs without a history of a fever or signs of infection. Infectious endocarditis is always a rule out for a newly stenotic aortic valve; however, there is no obvious vegetative lesion present, and this patient is reportedly healthy. Calcification of the aortic valve is common in humans (rare in dogs) and screening a systemic calcium level seems reasonable in this patient as a part of full baseline lab work.

With a moderate stenosis, the prognosis is fair until we can assess progression in LV compensatory changes. Rate control is typically indicated to help lower heart rate and decrease the obstruction using atenolol. That being said, in a senior dog without LV hypertrophy or any associated syncopal episodes, this is not clearly necessary. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of labored breathing, exercise intolerance or collapse episodes, as AS patients are more predisposed to development of arrhythmias than to CHF. Mild exercise restriction is advised lifelong.

These findings may or may not be related to reported ventricular arrhythmias as this breed is also predisposed to ARVC. Follow up and treatment of the arrhythmia should be dictated by the ECG report.

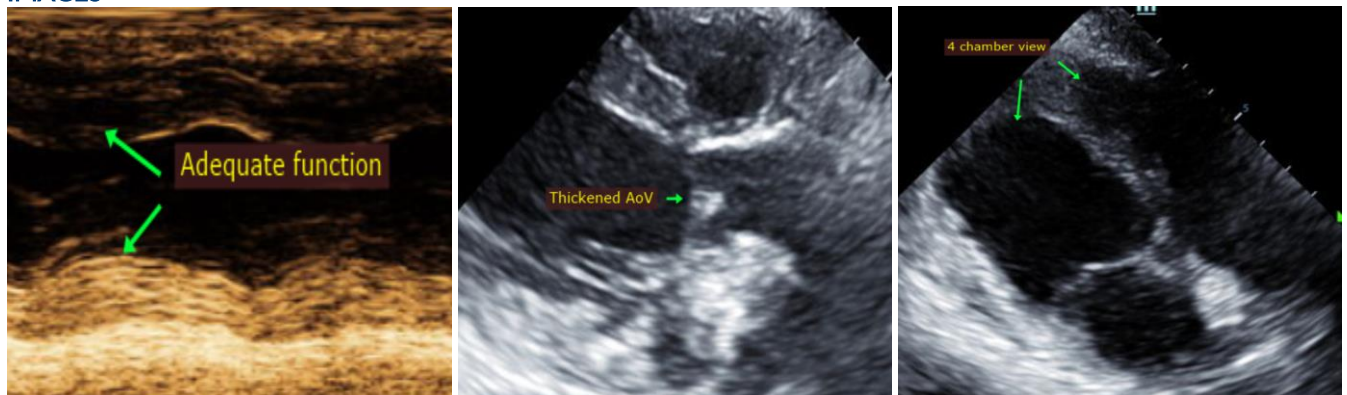
Monitor at home for any associated clinical signs, including fainting/exercise intolerance, changes in breathing pattern or development of a cough.

From a structural standpoint, anesthetic risk is considered mild if needed. **This does NOT take into account the ventricular arrhythmia, as treatment and/or evaluation may be advised prior to proceeding.** 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. Aortic abnormalities carry an increased risk for endocarditis, and **prophylactic antibiotics are recommended for any orthopedic or dental procedure.**

PLAN

Recheck echocardiogram recommended in 6 months, sooner if any clinical signs develop.

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