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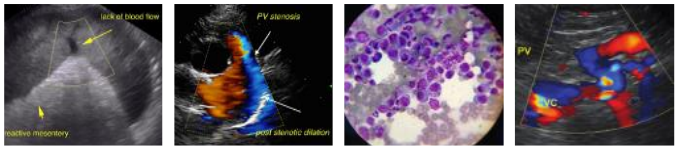


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Gigi Vohwinkel

SPECIES
Canine

BREED
Chihuahua

SEX
Female Spayed

AGE
13 years

WEIGHT
7lbs

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

IMAGING PERFORMED BY
Sands Hill Mobile Veterinary Ultrasound

HOSPITAL NAME
Surf City Animal Hospital

REFERRING VET
Dr. Carrell

INVOICE
32114

DATE
8/3/23

PRESENTING CLINICAL SIGNS

History: Grade 2/6 murmur. Assess prior to dental. On Hydrocodone and Homatropine.

ECHOCARDIOGRAM FINDINGS *Limited right-sided imaging window*

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. No obvious mitral regurgitation. Normal 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 moderate aortic insufficiency. There is moderate aortic stenosis present (41mmHg PG). No pericardial or pleural effusion noted.

CARDIAC CHART

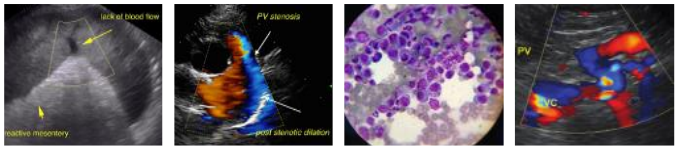
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	NA	NA	NM	1.3	60	91	NM
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**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	140	3.2	1.0	3.2	1.3	2.1	0.9
*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 mild aortic stenosis causing an increased flow velocity through the orifice. The aortic valve appears thickened with a significant leak, which suggests a valvular issue. A baseline blood pressure is strongly recommended. Fortunately, there is no evidence of compensatory LV hypertrophy at this time; however, this should be monitored closely going forward. The LA is normal indicating the risk for complication is currently low. No additional valve issues are identified. It is worth noting that the patients acoustic window is significantly limited, and small abnormalities may not have been visualized.

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



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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.

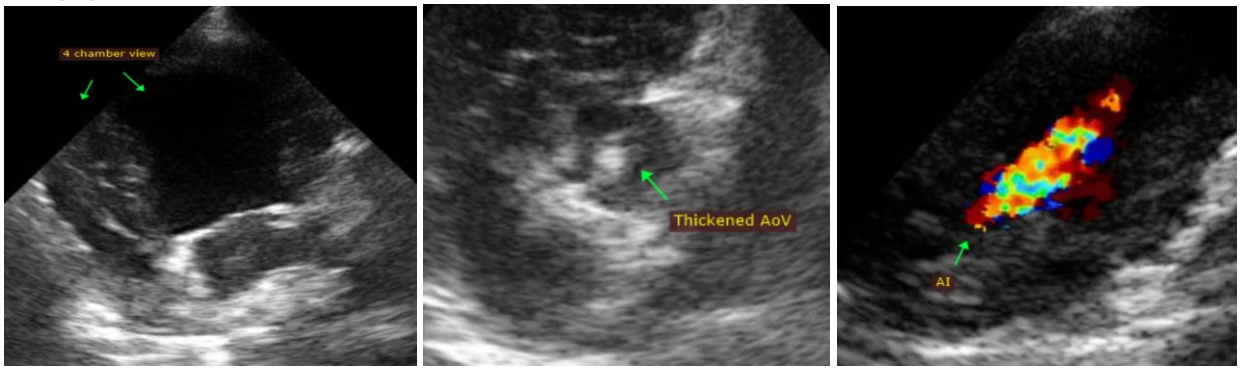
With a mild stenosis, the prognosis is good assuming the degree of obstruction does not progress. At this time, no medications are indicated. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of labored breathing, exercise intolerance or collapse episodes, as AS patients are more predisposed to development of arrhythmias than to CHF. Mild exercise restriction is advised lifelong.

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. 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.**

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