SonoPath
Clinical Sonography & Telecytology
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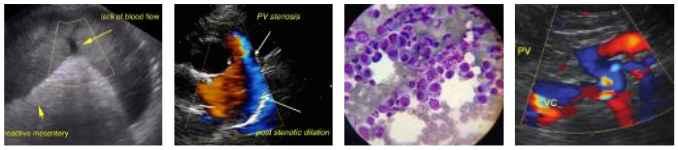


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Kodiak Bickta

SPECIES
Canine

BREED
Rottweiler Mix

SEX
Male Neutered

AGE
5 years

WEIGHT
98lbs

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. Wick

INVOICE
27251

DATE
11/3/22

PRESENTING CLINICAL SIGNS

History: Coughing. Bronchial/alveolar pattern on CXR; possible PA enlargement. Heartworm negative.
Sedation: Dexdomitor, Telazol, and Torb.
-Current medications: Cough tabs and Doxycycline.

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. Mild anterior-directed mitral regurgitation with minimal left atrial dilation. Normal MR velocity. Normal LV diameter in diastole with an increasd systolic dimension; moderately depressed myocardial function. The tricuspid valve appears normal with trace tricuspid regurgitation. Normal velocity. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. Normal MPA. The pulmonic and aortic valves are normal in morphology and mobility. Decreased pulmonic and aortic outflow velocities. The aortic root is mildly dilated. Trace aortic and no pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

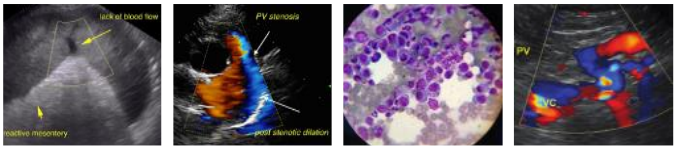
CARDIAC CHART

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	5.0	2.0	NM	1.3	21	40	0.8
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	0.73	0.6	44.5	3.6	4.8	3.8
*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

Chronic degenerative valve disease causing mild mitral and trace tricuspid regurgitation is suspected, although pathology secondary to sedation is also possible. The LV is dilated in diastole with moderate dysfunction, which should be monitored going forward. Regardless, lack of significant left atrial enlargement indicates the current risk for complication is low. The aortic root is dilated with a small insufficiency noted, and a baseline BP is strongly recommended. No concurrent issues such as pulmonary hypertension are noted in this study with a normal MPA/right heart dimension and normal TR velocity.



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Unfortunately, it is nearly impossible to accurately evaluate a patient's LV function using Dexdomitor. In dogs specifically, the drug was shown to increase both LV diameters and lower FS, which is seen in this study. Additionally, the drug can lead to valve regurgitation that is not otherwise present, which may explain leaks in the mitral and aortic valves, although early CVD is suspected. Given that this breed is predisposed to DCM, consider reassessing LV function without sedation to reestablish a baseline. Given that the patient is coughing, we can however, safely say that there is no significant pulmonary hypertension seen in this study.

Given these findings, the cough is unlikely to be cardiac in origin and primary respiratory causes should be considered. Consider further respiratory work up/treatment (hydrocodone, taper course of steroids, Enrofloxacin, TTW/BAL, etc.). PAH can certainly develop in a dog with a chronic cough and monitoring for associated clinical signs is recommended (exertional dyspnea or collapse).

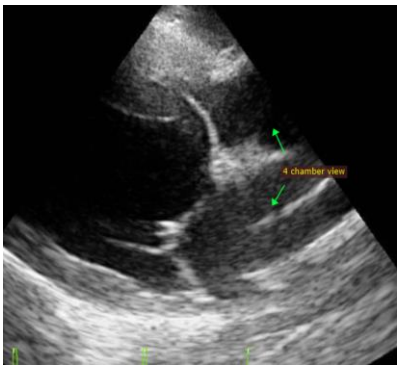
No cardiac medications are clearly indicated. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

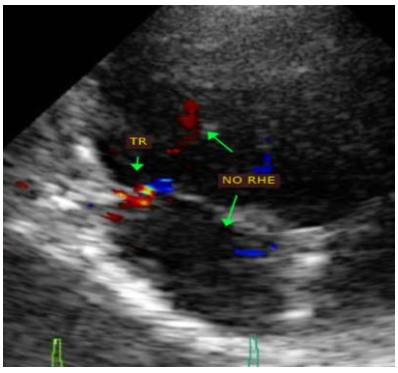
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively 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.

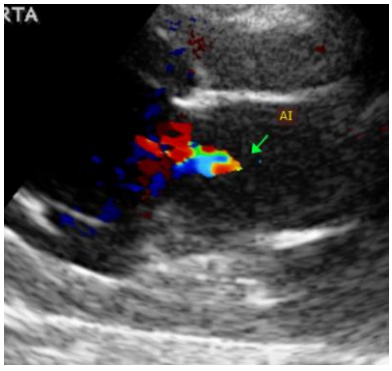
Plan: Consider reassess LV function without sedation. Baseline BP recommended. Further cough treatment/evaluation as discussed.

Recommend conservative monitoring with a recheck echocardiogram in 6-12 months, sooner if any development of clinical signs.

IMAGES







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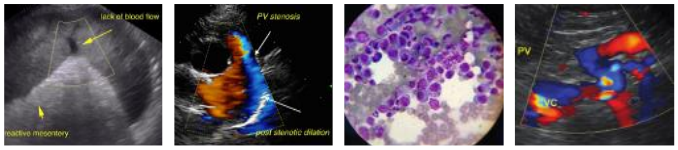

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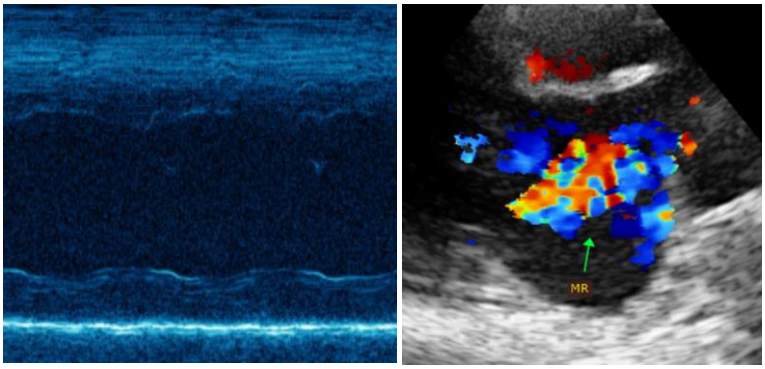

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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