SonoPath
Clinical Sonography & Telecytology
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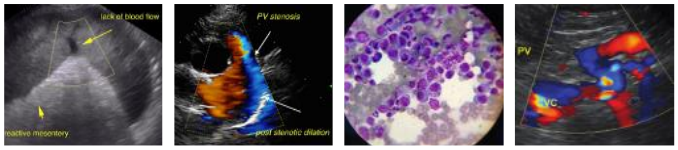

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Brutis Mewbourn

SPECIES
Canine

BREED
Dachshund

SEX
Male Intact

AGE
15 years

WEIGHT
14.4lbs

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

IMAGING PERFORMED BY
Amanda Crook, SDEP

HOSPITAL NAME
River Edge Pet Medical Center

REFERRING VET
Dr. Gray

INVOICE
21435

DATE
10/8/21

PRESENTING CLINICAL SIGNS

History: Presented on 9/6 for bleeding from mouth from dental infection. Had been on amoxi/clav at that point for 10 days. Heart murmur auscultated at that time Grade 2. Now is Grade 4-5. Assess prior to anesthesia.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 188bpm (range 166-214bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Tall R waves. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus tachycardia. Tall R waves.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild thickening of mitral valve leaflets with no obvious prolapse into the left atrial lumen. Mild eccentric mitral regurgitation with normal left atrial dimension. Elevated MR velocity. LV diameter is borderline with adequate myocardial function. Suspicion of pseudohypertrophy. The tricuspid valve appears thickened with mild septal prolapse and mild tricuspid regurgitation. Velocity consistent with mild to moderately pulmonary hypertension. Mild right atrial dilation. Right ventricle appears normal. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. 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	6.0	3.6	1.3	1.2	61	92	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	1.3	0.83	6.5	2.1	2.6	1.0
*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

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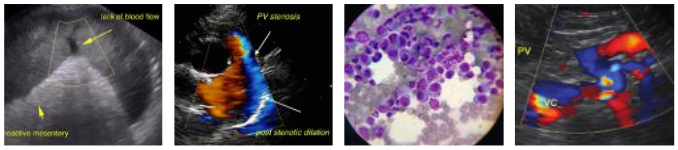

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing mild mitral and mild tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Mild to moderate pulmonary hypertension with mild right atrial enlargement is of unknown significance in an asymptomatic dog. Monitoring going forward is certainly advised, as this patient may be at risk for clinical PAH (exertional dyspnea/syncope). Finally, there is some evidence of pseudohypertrophy, and baseline lab work and blood pressure is strongly recommended. No additional issues such as systolic dysfunction are noted in this study. The ECG is unremarkable with a normal sinus tachycardia.

Given these findings no cardiac medications are clearly indicated. Should a cough develop in the future, the best way to combat progressive PAH is adequate cough control with hydrocodone, intermittent antibiotics, etc. It is important to note that a cough worsens the PAH, rather than the PAH causing a clinical cough. Assessment of progression in the future will help predict long term prognosis, which is guarded 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.

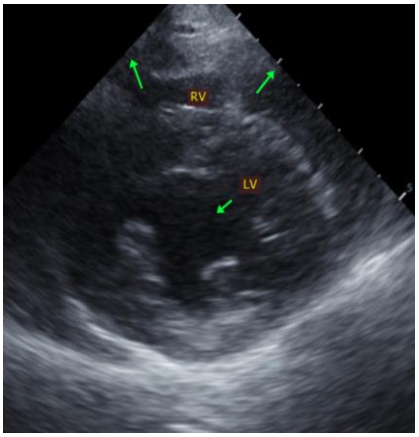
Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively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

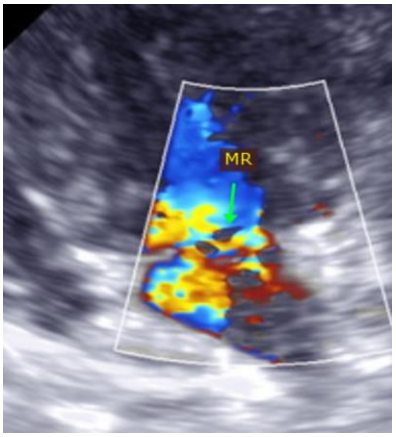
PLAN

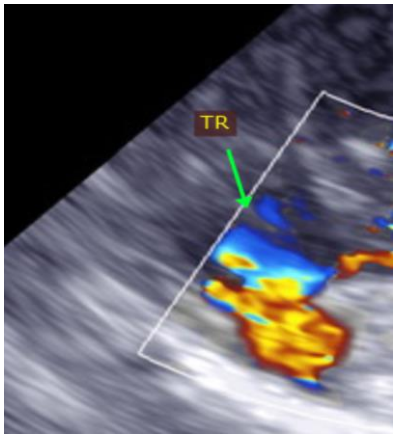
Baseline lab work and BP if not recently performed.

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

IMAGES







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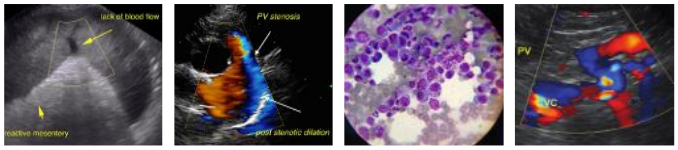

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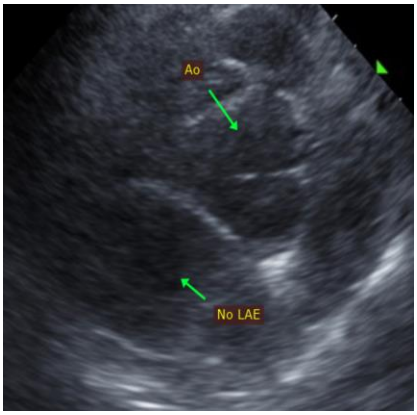

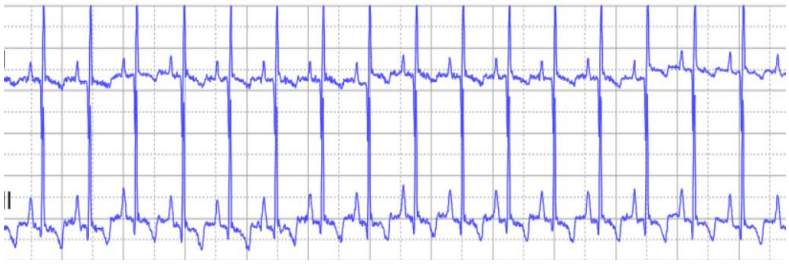

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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