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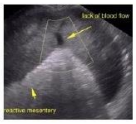
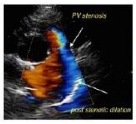
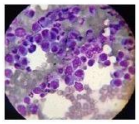
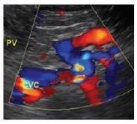

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT
Rudy Rumney

SPECIES
Canine

BREED
Jack Russell Terrier Mix

SEX
Male Neutered

AGE
13 years

WEIGHT
36.8lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Crystal Hill, RVT

HOSPITAL NAME
Southside Animal Clinic

REFERRING VET
Dr. Grams

INVOICE
20586

DATE
8/17/21

PRESENTING CLINICAL SIGNS

History: 3-4/6 heart murmur. Noted significant arrythmia at a July visit for skin. At times several seconds between beats. ECG and atropine response test suggestive of high vagal tone (atropine resolved arrythmia). New exercise intolerance and coughing and collapsing.
-Radiographs: Showed cardiomegaly and minimal or no edema. No respiratory distress.
-Current medications: Emergency clinic started Pimobendan and Furosemide.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 50mm/s, 20mm/mV. The majority of the tracing is non-diagnostic. From what can be seen, the heart rate ranges from 90-200bpm. Premature beats are suspected. No obvious additional abnormalities are identified.
ECG diagnosis: Suspect profound respiratory sinus arrythmia with atrial premature contractions; however, this is not definitive.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with minimal prolapse into the left atrial lumen. Mild mitral regurgitation with mild left atrial dilation. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with no tricuspid regurgitation. Prominent right heart in some views. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or 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	NM	NA	1.2	1.5	55	87	0.33
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	1.5	1.1	16.7	2.46	3.4	1.7
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998				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)

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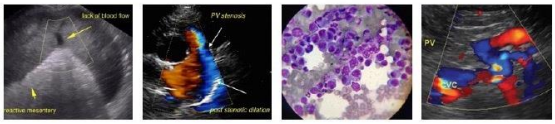

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Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435 Hansson et al, Vet Rad and Ultrasound 2002 Bonagura et al. Echocardiography: principles of interpretation, Vet	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
	40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
	50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing mild mitral regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Mild pulmonary hypertension is suspected, which is likely secondary to the cough. No concurrent issues such as systolic dysfunction are noted in this study.

The ECG is difficult to interpret; however, suspicion for a respiratory sinus arrythmia persists. Additionally, there are some concern for premature beats; although this is not definitive. **A more diagnostic single lead tracing or potentially a six lead ECG or Holter are strongly recommended.**

Given these findings, the cough is certainly non-cardiogenic in origin. Respiratory disease is considered most likely. If the cough is poorly controlled/progresses long term, this can certainly lead to worsening of PAH. Clinical signs of significant PAH include exertional dyspnea/collapse. Continued monitoring is advised. Cough control is recommended lifelong (hydrocodone, intermittent AI prednisone, fluoroquinolone for acute flare up, etc.). No indication for Lasix therapy at this time.

Syncope is likely related to hypoxia secondary to coughing; however, the situational component should be further explored particularly in light of possible arrhythmias. If this is the case resolving the symptom should improve the episodes; however, follow up is certainly advised if these persist with a holter monitor.

In a dog without significant left atrial enlargement, Pimobendan is also likely unnecessary and can be safely discontinued. 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.

Anesthesia is not advised prior to further arrythmia evaluation.

PLAN

No indication for Lasix or Pimobendan at this time. Further cough evaluation/treatment as discussed. Reassess ECG as discussed. If syncope persists despite resolution of the cough, highly recommend a holter monitor.

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

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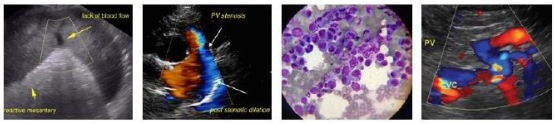

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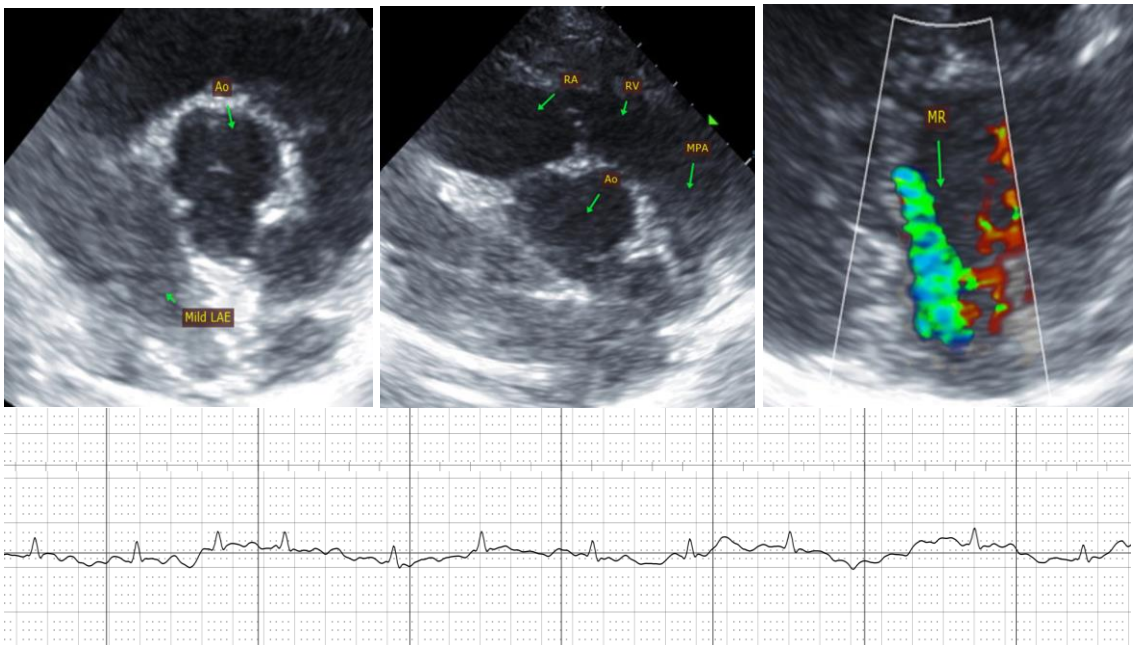
IMAGES



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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