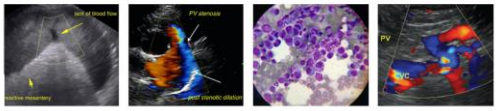
Mass Veterinary Specialty Services
1-413-734-1292



SonoPath
Clinical Sonography & Telecytology
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PATIENT
Emmitt Cusson

SPECIES
Canine

BREED
Boxer

SEX
Male Neutered

AGE
7 years

WEIGHT
74lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Specialty Services

REFERRING VET
Dr. Masloski

INVOICE
21156

DATE
9/22/21

PRESENTING CLINICAL SIGNS

History: Recheck echo. History malignant ventricular tachycardia with normal cardiac structure and function. Current presentation: Emmitt was discharged from Bolton ER on Monday (2 days ago) after being seen for collapse episodes and noted to have Ventricular Tachycardia on ECG. He was initially on a lidocaine CRI then changed to oral Mexiletine and his Sotalol was increased to 80mg twice a day at that time. Emmitt has been panting a fair amount since then with episodes of not quite being himself (antisocial, hiding in closet). No coughing and he continues to eat well but is a bit lethargic. CV/RESP: transient arrhythmia, no murmurs noted, PSS, lung fields clear. BP: 170mmHg.
-Current medications: 1) Sotalol 80mg 1 tab twice a day 2) Mexiletine 150mg 1 tab three times a day *No sedation.

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; 25mm/s, 20mm/mV. Significant baseline artifact. The ventricular rate is highly variable, ranging from 42-100bpm. Baseline artifact impedes identification of AV block (blocked p waves); however, this is confirmed on the echocardiogram. There does appear to be some P to QRS conduction (i.e., 2nd degree block), with no escape foci appreciated. The block ranges from 1:1 up to 4:1. No ventricular arrhythmias identified.
ECG diagnosis: High grade 2nd AV block; likely secondary to anti-arrhythmic medications.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is normal with decreased myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is mildly dilated.
Mitral valve: The mitral valve is mildly thickened with no prolapse into the left atrial lumen. Trace central mitral regurgitation noted during prolonged diastole.
Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Prominent right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.
Right atrium: RA mildly dilated.
Tricuspid valve: The tricuspid valve appears normal with trace tricuspid regurgitation.
Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.
Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.

2-Dimensional Measurements

Ao diam (cm)	2.2
LA diam (cm)	3.5
LA:Ao (Swe)	1.6
IVS thickness (cm)	1.0
LVID diastole (cm)	4.4
PW thickness (cm)	0.9
LVID systole (cm)	3.6
FS (%)	18

Doppler Measurements

PV Vmax (m/s)	0.73
AoV Vmax (m/s)	1.5
MR Vmax (m/s)	NM
TR Vmax (m/s)	NM
TR PG (mmHg)	NA

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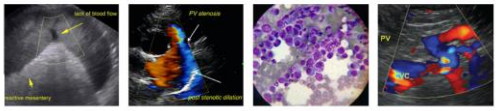

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INTERPRETATION OF THE FINDINGS

Unusual case. The primary issue appears to still be refractory VT, based upon recent hospitalization. The ECG today certainly does not show rapid arrythmias; however, significant AV block has developed likely due to the medications. This is likely the cause of the LV changes appreciated in the echocardiogram, with a significant decline in systolic function. No additional issues are identified.

These findings are likely the cause of lethargy noted at home. While it is encouraging that the VT has responded to treatment, this patient certainly cannot maintain with such a low heart rate/AV block. Recommend decrease Sotalol dose as below while maintaining Mexilitene as prescribed. Reassessing the ECG in 5-7 days is recommended. If arrythmias persists (either brady or tachy in nature), consider referral to a Cardiologist in this case as alternative medications may be necessary that pose significant risk. Additionally, recommend Pimobendan, at least for the short-term, to help support cardiac output.

Unfortunately, there is always an elevated risk for collapse and sudden death in any arrhythmic patient, and even on medications this risk unfortunately still persists. ARVC carries a HIGHLY variable prognosis, with some dogs able to remain asymptomatic for extended periods of time, and others developing exercise intolerance, syncopal episode, and refractory arrhythmias/sudden death imminently.

Monitor at home for collapse, exercise intolerance, and/or lethargy. Anesthesia is not recommended until good arrhythmic control is achieved. Lifelong mild to moderate activity restriction is advised.

RECOMMENDATIONS

- Institute Pimobendan 0.3mg/kg PO q12h.
- Decrease sotalol to 40mg PO q12h.
- Continue Mexiletine as prescribed.
- If recurrent syncope/lethargy occurs with these changes, immediate hospitalization/reevluation is advised.
- Reassess ECG in 5-7 days. If persistent brady or tachycardia are noted highly recommend referral to a local Cardiologist for refractory arrythmia assessment.
- Fish oil supplementation is recommended for dogs with arrhythmias (1000mg of omega 3 and 6 once to twice daily as tolerated).
- Lifelong mild to moderate activity restriction.
- Anesthesia is not recommended until good arrhythmic control is achieved.

PLAN

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

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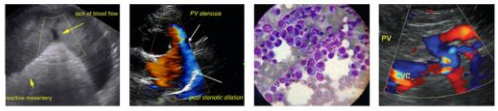

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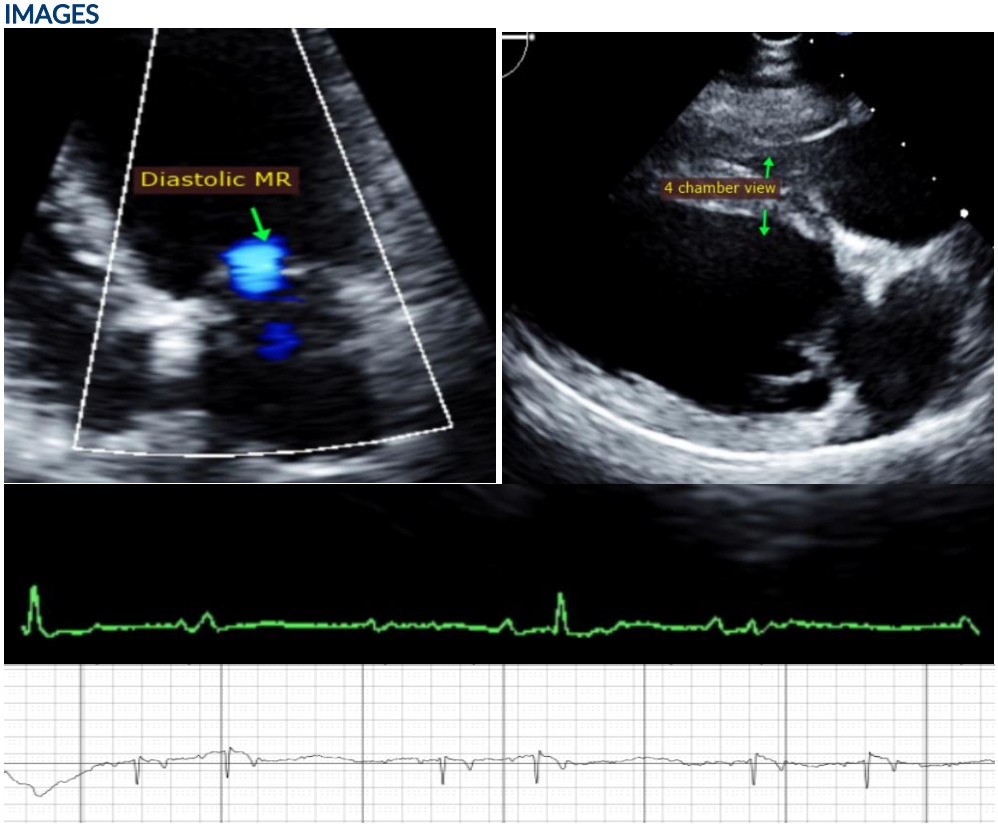

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Echocardiogram performed by: Pamela Harrigan, RDCS
Pet Animal Ultrasound Service (4paus.com)