
PATIENT

Abby Whipple

PRESENTING CLINICAL SIGNS

 History: Recently has been collapsing. Lethargy, occ heavy breathing.
 Pertinent echo/AUS findings (EL 9/28/22): NSF

SPECIES

Canine

BREED

Boxer

SEX

FS

AGE

2015

WEIGHT

67 lbs

HOLTER MONITOR FINDINGS AND RHYTHM ASSESSMENT

Time analyzed	47:47h
Mean heart rate	136bpm
Maximum heart rate	220bpm
Minimum heart rate	72bpm
VPCs	2641; 12 pairs, 5 runs
APCs	0

Interpretation: Underlying normal sinus rhythm with appropriate rate variation (limited diary provided). VPCs are seen throughout; primarily singles with an LBBB morphology (indicative of an RV origin). Periods of trigeminy. Occasional couplets; rare R on T phenomenon. Brief run of VT (3 beats); no sustained VT. Period of high grade 2nd degree AV block following normal sinus rhythm with intermittent AV nodal conduction at 8:55am. This is followed by (8:56am) asystole or ventricular fibrillation (baseline artifact) with a slow ventricular escape rhythm. Atrial fibrillation/flutter develops with variable conduction, and ultimately a normal sinus rhythm/bradycardia resumes at 9:01am. The reported collapse episode was noted at 10:15am, with a normal sinus rhythm noted at the time.

INTERPRETED BY

 Maggie Machen Lamy,
 DVM, DACVIM
 (Cardiology)

Rhythm diagnosis: Sinus rhythm with multiform arrhythmias including single, couplet and triplet VPCs, brief period of high grade 2nd degree AV block deteriorating into asystole/VF, atrial fibrillation/flutter.

IMAGING PERFORMED BY
RECOMMENDATIONS

Unusual tracing with both brady and tachyarrhythmias. The tachyarrhythmias are brief, with frequent single VPCs unlikely to cause any clinical signs. Occasional R on T couplets are of more concern, with a brief (3 beat) run of VT. No sustained VT is appreciated; however, these findings alone are enough to suspect ARVC in this signalment.

HOSPITAL NAME

 Companion VH
 Wayne

What is of additional great concern is there is a period of acute onset (ie not following VT or sustained tachycardia) 2nd degree AV block, with 6 simultaneous non-conducted P waves. This bradyarrhythmia appears to deteriorate into ventricular fibrillation/asystole (difficult to discern with baseline artifact) and a slow ventricular escape rhythm (ventricular rate of 30bpm). Following this atrial fibrillation/flutter develops, and ultimately a normal sinus rhythm resumes 5 minutes later. This is highly concerning and would certainly cause collapse; however, no symptoms are noted at this time on the brief enclosed diary. The only episode noted on the diary occurs over an hour later, without a significant arrhythmia seen at the time point.

REFERRING VET

Dr. Andalaft

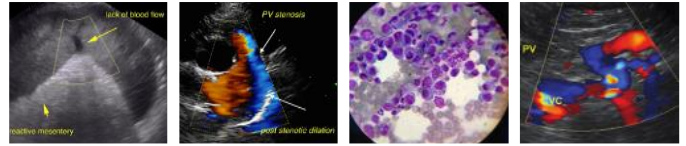
In total, it remains unclear what the cause of syncope is in this case, with both bradycardia and tachycardia remaining a possibility. The bradycardia is actually more concerning, as treating VT may block the escape rhythm during times of slow heart rate and potentially leading to life threatening asystole/sudden death. It is also unclear if this is an atypical form of ARVC (arrhythmogenic RV cardiomyopathy, typical of this breed), as typically only ventricular tachyarrhythmias are appreciated with this disease. An additional conduction issue is suspected although this is purely speculative.

INVOICE

26886

DATE

10/13/22



PATIENT

Abby Whipple

Recommend referral in this case to a local Cardiologist, as any move we make carries great risk and need for close monitoring. The first step is likely to determine what the cause of syncope is as discussed, as treatment will differ. If sustained VT is present (not captured here), then use of Sotalol or similar may be beneficial with risks as discussed. If the bradycardia is the cause however, a pacemaker may ultimately be discussed depending on further systemic evaluation.

SPECIES

Canine

Any patient with arrhythmias has risk for acute collapse and sudden death, and this is certainly possible in this patient at any time. Activity restriction is recommended until the rhythm is stabilized.

BREED

Boxer

SEX

FS

Prognosis is guarded yet highly variable with ARVC, with some dogs experiencing acute sudden death within days of diagnosis and others remaining stable for years.

AGE

2015

Omega fatty acid supplementation is recommended in any animal with arrhythmias (1000mg PO q8-12h) for possible anti-arrhythmic benefit.

WEIGHT

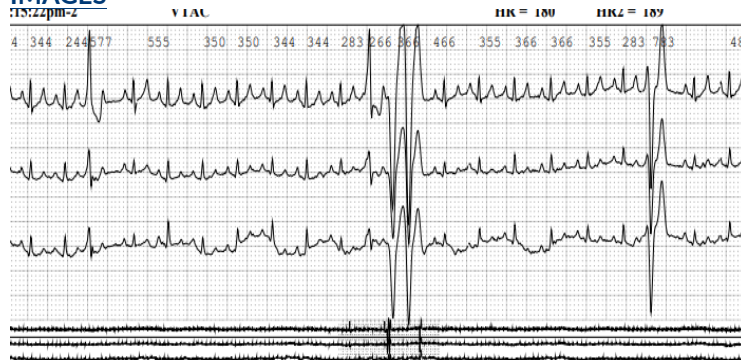
67 lbs

Plan: **Immediate referral is recommended in this case.** If declined, possible next steps include a repeat holter with the goal of gaining further information on collapse episodes, full systemic evaluation to screen for contributing issues, a cardiac troponin level to assess for myocarditis (cTnI), etc. Based upon what is seen here, medical management cannot be recommended at this time.

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

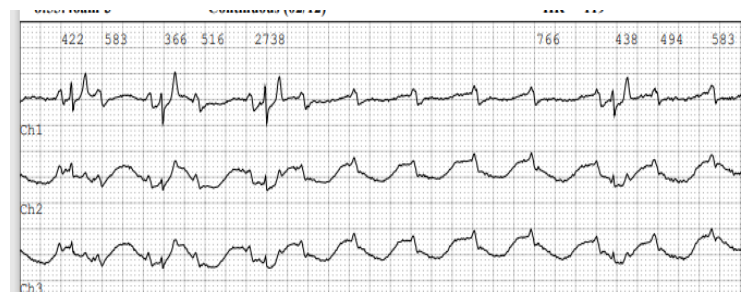
IMAGES



R on T couplet

HOSPITAL NAME

Companion VH
Wayne



High grade 2nd degree AVB 8:55am

REFERRING VET

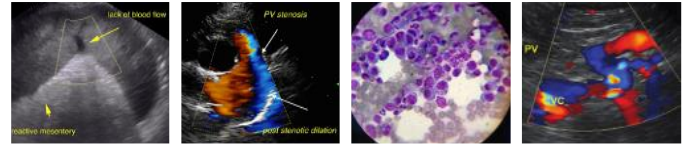
Dr. Andalaft

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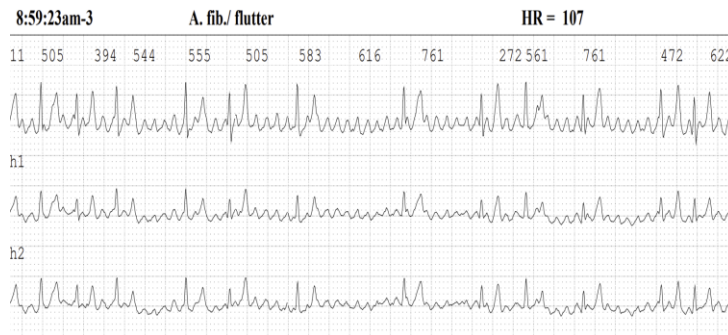
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(Cardiology)

IMAGING PERFORMED BY



Asystole/VF with ventricular escape rhythm



Atrial flutter

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. 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

HOSPITAL NAME

Companion VH
Wayne

REFERRING VET

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