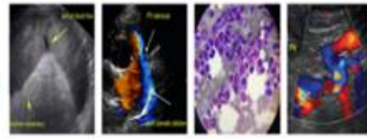
Mass Veterinary Services



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Chunk Roy

SPECIES
Canine

BREED
Bulldog Mix

SEX
Male Neutered

AGE
13 years

WEIGHT
56.7lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
22728

DATE
2/22/22

PRESENTING CLINICAL SIGNS

History: Chunk presented on February 17 for a bronchoscopy. He is being treated with Hydrocodone with homatropine/hycodan 5mg 2.5 tabs twice a day for cough. On exam, NSR, no murmurs noted, PSS, lung fields harsh bilaterally with crackles on left, mild abdominal effort to respiration, deep cough noted with minimal effort, mm pink moist, CRT<2. For bronchoscopy, Chunk was premedicated with 0.1mg/kg each torbugesic and midazolam. He was induced with propofol until VPC's were noted on his EKG (approximately 30mg). The EKG was monitored as the propofol was flushed out of the IV line/catheter. The VPC's were relatively frequent, monomorphic and singular. The procedure was aborted, and Chunk was allowed to recover. Recovery was otherwise unremarkable. Echocardiogram and ECG to further evaluate his cardiac status. BP: 140mmHg x 5. *No sedation for study.

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, 2 minutes duration. The average heart rate is 150bpm (range 136-166bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is normal with adequate myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is normal.
Mitral valve: The mitral valve is normal with trace MR. Normal velocity.
Aortic valve/Aorta: The aortic valve is normal with normal mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.
Right atrium: Normal RA dimension.
Tricuspid valve: The tricuspid valve appears normal with trace tricuspid regurgitation. Normal velocity.
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

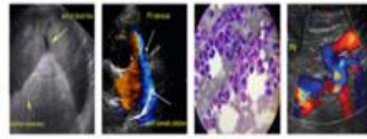
Measurement	Value
Ao diam (cm)	2.2
LA diam (cm)	2.4
LA:Ao (Swe)	1.1
IVS thickness (cm)	1.1
LVID diastole (cm)	3.5
PW thickness (cm)	1.0
LVID systole (cm)	2.5
FS (%)	28

Doppler Measurements

Measurement	Value
PV Vmax (m/s)	0.6
AoV Vmax (m/s)	0.96
MR Vmax (m/s)	5.3
TR Vmax (m/s)	2.4
TR PG (mmHg)	24

INTERPRETATION OF THE FINDINGS

Overtly normal cardiac structure and function. No structural issues or cardiac tumors are identified. Small leaks in the mitral and tricuspid valves are likely physiologic; however,



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follow up is advised should a murmur be ausculted in the future. No obvious pulmonary hypertension is present, secondary to respiratory disease.

Unfortunately, no ventricular premature beats were captured on the in-hospital ECG. VPCs are a nonspecific finding that can be primary in origin (arrhythmic disease; a rule out diagnosis), develop secondary to significant cardiac disease (not present in this study), or be extra-cardiac in origin; i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In a dog with no structural cardiac disease, ruling out all differentials can be considered. That being said, they may also have developed simply secondary to anesthesia, in which case evaluation would be of low yield. This would be the greatest likelihood in this case and potentially utilizing an alternative protocol may improve stability. As an aside, it is always important to differentiate true VPCs from ventricular escape beats, which are common when an anesthetized patient develops bradycardia. The latter is benign and is a normal response to a slow heart rate.

Going forward, application of a holter monitor to screen the patient outside of the hospital for a longer period of time is an option. Alternatively, given an essentially normal work-up thus far it would also be reasonable to reattempt anesthesia utilizing a different induction agent.

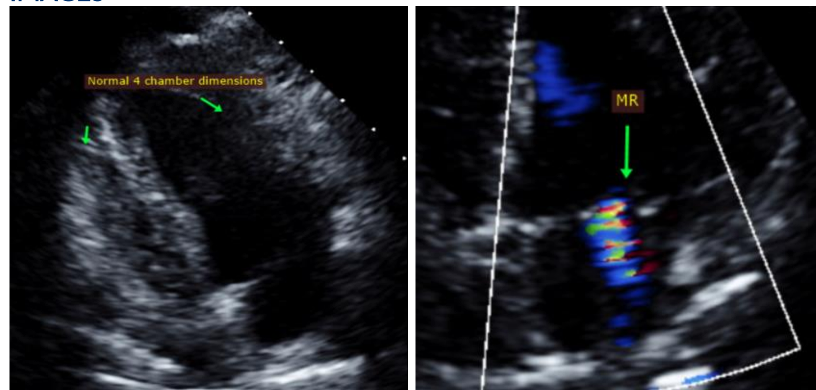
RECOMMENDATIONS

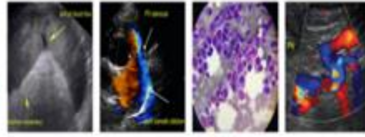
- No cardiac medications are clearly indicated at this time.
- Consider holter monitor as discussed versus attempting an alternative protocol.
- Fish oil supplementation is recommended for dogs with arrhythmias (1000-2000mg of omega 3 and 6 once to twice daily).
- If further evaluation is not performed, anesthetic risk is considered mildly elevated. Avoid ketamine, telazol, Dexdomitor (or other alpha-2 agonists) and acepromazine. Consider an alternative induction agent as discussed. Recommend having lidocaine CRI available for use in the event of worsening ventricular arrhythmias under anesthesia (CRI 50—75mcg/kg/min).
- Monitor at home for collapse, exercise intolerance, and/or lethargy.

PLAN

If a holter monitor is declined, a recheck echocardiogram should be performed if a murmur or signs of cardiac compromise develop in the future.

IMAGES





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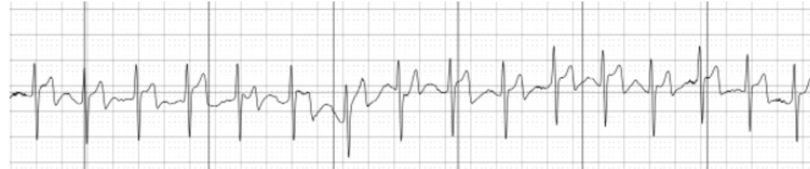

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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