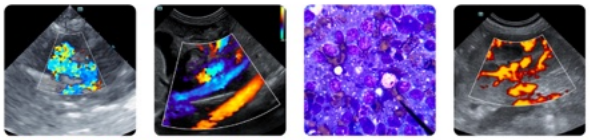

PATIENT

Elsa Mullen

SPECIES

Canine

BREED

Boxer

SEX

Spayed female

AGE

11 years

WEIGHT

64 lbs

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Dr. Hougentogler

HOSPITAL NAME

K-Vet Animal Care

REFERRING VET

Dr. Wong

INVOICE

71985

DATE

2/26/26

PRESENTING CLINICAL SIGNS

- Patient has had history of T-zone Lymphoma that has been stable; also has hematoma on kidney; takes Enalapril for hematoma; has TNTC dermal masses, PE unremarkable, Pt taking Enalapril 20 mg - 1 tab, po, q 24 hrs., Any medication changes or additions at this time?
- Appetite: Good, pt was sedated with Torb and propofol for echo and radiographs Pulse: 96, RR: 28 mm: Pink Pulse Quality: strong and steady BAR
- Systolic BP:190 (Doppler) Total T4: 2.8, ProBnP: 1493, Creatinine:1.6, HW: neg Elevated BNP

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The left atrium is normal in dimension. The left ventricle is normal in dimension with normal systolic function. The right atrium and ventricle are normal in dimension with normal systolic function. The anterior and posterior mitral valve leaflets are appropriately thin with adequate apposition and intact chordae, and there is no significant prolapse. There is no significant mitral regurgitation identified. The tricuspid valve leaflets are appropriately thin with adequate apposition and intact chordae, with no significant tricuspid regurgitation and no evidence of pulmonary hypertension. The left ventricular outflow tract demonstrated normal laminar flow and the visible aorta is unremarkable. The right ventricular outflow tract assessment revealed normal laminar flow and appropriate diameter and distensibility. There is no pulmonic and no aortic valve insufficiency identified. There is no visible pericardial, pleural, or free peritoneal fluid documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial, and visible extra-cardiac regions were free of masses, spontaneous echo contrast, or thrombi.

CANINE CARDIAC PARAMETERS	Body Weight kg	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	29.09 kg	170	3.02	2.43	1.21	3.68	2.49
CANINE CARDIAC PARAMETERS	**FS**	**EPSS**	**PV V MAX (m/s)**	**AV V Max (m/sec)**	**MR Vmax**	**TR Vmax**	**RPA distensibility (normal >30%)**
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	32	0.2	0.7	1.4	Not measured	Not measured	Not measured

ECG:
The underlying rhythm is sinus in origin with a varying R-R interval and average heart rate of 170 bpm. The majority of the QRS complexes are supraventricular in origin with consistent P-Q intervals. There are rare QRS complexes that are prolonged in duration (>70ms), suggesting a ventricular origin. There is no evidence of atrioventricular block or atrial ectopy identified. This is most consistent with a sinus rhythm with rare ventricular ectopy.

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ULTRASONOGRAPHIC FINDINGS

These findings are consistent with an essentially normal echocardiogram. Any murmur will be considered functional in origin. No cardiac cause of the morbidity is identified. Ventricular arrhythmias occur in many clinical settings, generally divided into cardiac and non-cardiac causes. Cardiac conditions include structural heart disease, pericardial effusion/cardiac neoplasia, and rarely myocarditis. Non-cardiac causes are common and include splenic disease, metabolic disease, electrolyte disturbances, tick-borne disease, fever, anemia, trauma, GDV, hepatic disease, GI disease, pancreatitis, DIC, and sepsis.

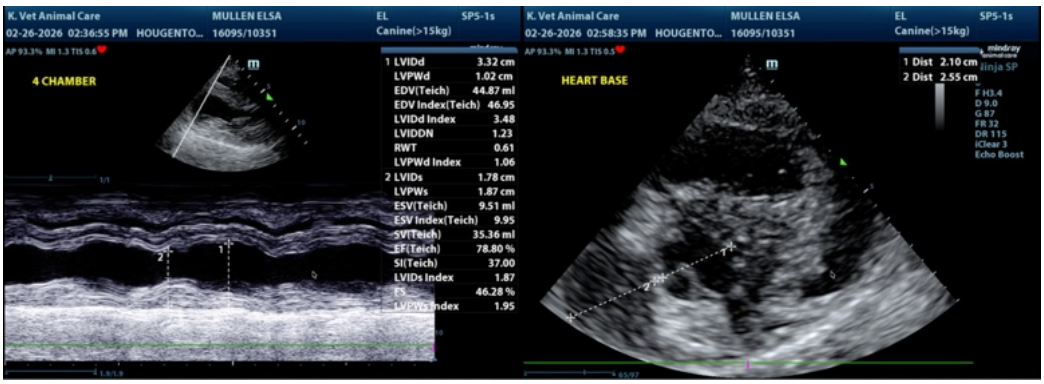
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given these findings, no cardiac therapy is recommended. There are no cardiac contraindications to fluid therapy or corticosteroid therapy, as indicated for further assessment and treatment. While therapy is not specifically indicated for the dysrhythmia based on these findings, further diagnostics might help tailor therapeutic recommendations. Consider the following:
- Abdominal ultrasound to look for abdominal causes of VPCs (e.g., splenic/adrenal changes)
- Consider 24-48 hour ambulatory ECG (Holter) monitor to assess significance of arrhythmia

Anesthesia considerations:
If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. Skip any ACE-inhibitor (if receiving) on morning of anesthesia. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 5 ml/kg/hour) if possible. A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Pre-medication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable.

Diet:
Ensure feeding a grain-inclusive diet if possible. A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly palatable with adequate protein and calories for maintaining optimal body condition with mild dietary sodium restriction (<100 mg/100 kcal) is recommended. Consider omega-3 fatty acid supplementation.

Activity:
Avoid strenuous activity.



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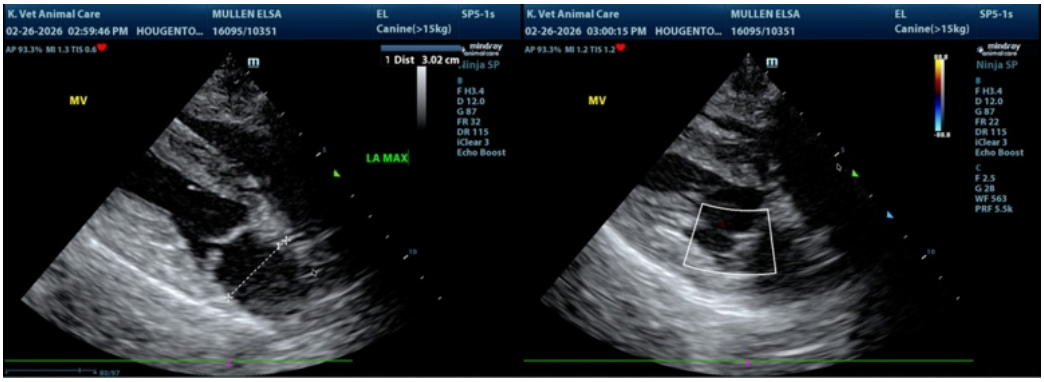

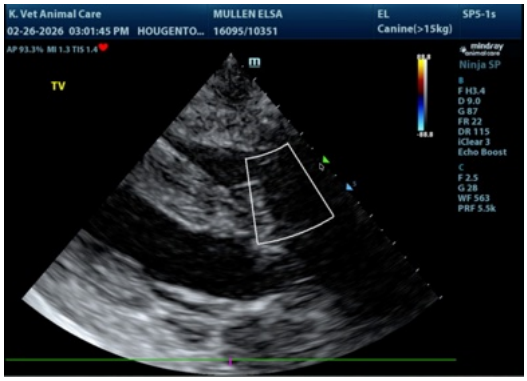

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com