



PATIENT

Izzy Nagy

SPECIES

Canine

BREED

Dachshund

SEX

Female Spayed

AGE

12.8 years

WEIGHT

12.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jacquie Pankatz, DVM

HOSPITAL NAME

Mountain Vista
Veterinary Hospital

REFERRING VET

Dr. Pankatz

INVOICE

45729

DATE

11/12/25

PRESENTING CLINICAL SIGNS

History: Recheck echo. Doing well. Irregular arrhythmia. Grade 3-4/6 heart murmur. BP: 130mmHg.
-Current medications: Pimobendan 8mg/ml 0.2mls BID.
-Pertinent previous echo findings (8/2024 MML): CVD B2. Moderate MR, moderate LAE, mild LVE, trace TR, mild PH.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Cardiomegaly. No obvious evidence of CHF.

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, 5mm/mV. The average heart rate is 130bpm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. Isolated VPCs are noted; singles only, monomorphic. No APCs, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm with respiratory variation. Isolated VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with mild prolapse into the left atrial lumen. Moderate mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Mildly increased LV diameter with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with septal prolapse and trace tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

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	5.0	3.0	NM	1.8	41	72	0.05
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	1.1	0.8	3.0	2.3	3.5	1.8
*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)
				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)
				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)

Adapted from June Boon, Veterinary Echocardiography, 1998
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 Clin North Am 15:1177, 1995



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists with evidence of stability. Moderate mitral and trace tricuspid regurgitation are unchanged, without progressive left heart enlargement. Persistently moderate left atrial enlargement indicates there is relatively low risk for imminent complication; however, risk for progression to spontaneous congestive heart failure in the future remains elevated. No additional issues are identified.

The ECG does show isolated VPCs have developed. These were not noted previously. VPCs are ectopic beats generated from abnormal conductive or fibrotic tissue in the ventricles of the heart muscle, and even frequent single VPCs will often cause no clinical signs in dogs. When sustained however, ventricular tachycardia can lead to symptoms such as lethargy and collapse.

VPCs are a very non-specific finding. They can be primary in origin such as ARVC (unlikely in this breed), be secondary to significant cardiac disease (moderate in this case), or be extra-cardiac in origin, i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In this dog with moderate structural disease, these may or may not be related. Full systemic evaluation is advised including senior lab work and potentially advanced imaging, such as an AUS. 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.

Based on what is seen here, anti-arrhythmic therapy is not warranted. That being said, the only way to understand the true extent of the arrhythmia in the absence of stress is to apply a 24-hour holter monitor and this should be considered as a next step (can be ordered through SonoPath). An alternative approach would be to utilize a holter monitor should the patient begin to experience clinical signs such as lethargy or collapse; however, this is a less conservative approach. Discussion with the owner is advised.

Given a lack of significant progression, it is reasonable to continue Pimobendan lifelong with no obvious indication for additional medications at this time. Continued assessment for progression is recommended, with a guarded prognosis (stage B2). That said, stability is certainly a good sign. Patient may be at risk for development of CHF, arrhythmias, and/or sudden death going forward.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

Anesthetic risk is considered moderately elevated based upon ventricular arrhythmias if no further workup is performed. Pimobendan should be started at least 3-5 days prior. Avoid ketamine, telazol, Dexdomitor (or other alpha-2 agonists) and acepromazine. Recommend having lidocaine CRI available for use in the event of worsening ventricular arrhythmias under anesthesia (CRI 50–75mcg/kg/min). Judicious IV fluid rates are advised to avoid fluid overload. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, and isoflurane maintenance.

PLAN

Baseline BP recommended every 6 months. Continue Pimobendan 0.25-0.3mg/kg PO q12h. Holter monitor and systemic screening are recommended.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.



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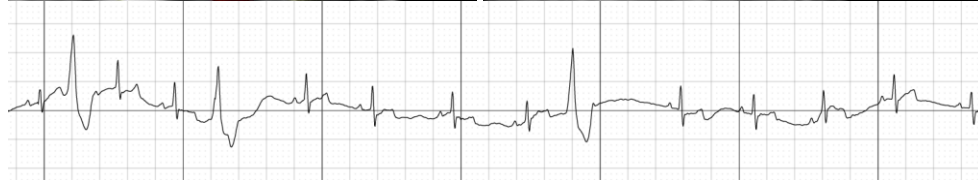
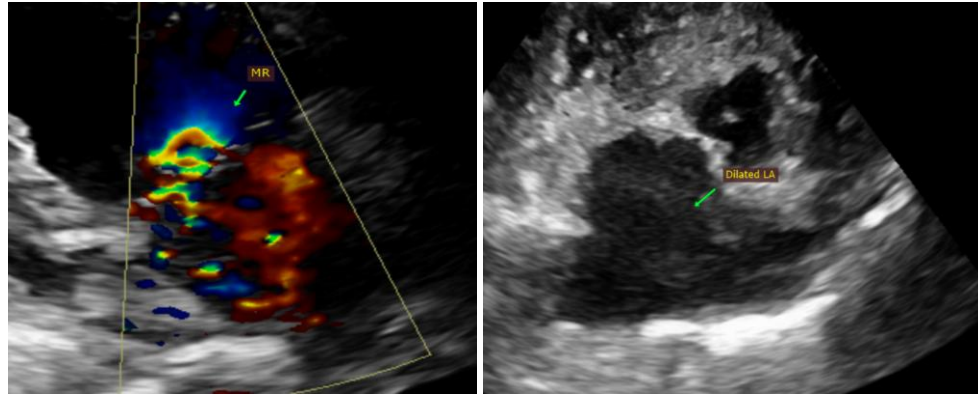
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IMAGES



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
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