



**PATIENT**

Blue Ivy Taylor

**SPECIES**

Canine

**BREED**

Great Dane

**SEX**

Female Spayed

**AGE**

7 years

**WEIGHT**

117lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**PRESENTING CLINICAL SIGNS**

History: Recheck echo. Longstanding history of needing complete IM sedation after pre-visit oral meds for any exam at vet. Last year she collapsed before the IM injection (very stressed and typically lunges, wears basket muzzle) and ECG showed an arrhythmia. Previously received Trazodone and Acepromazine pre-visit PO, and TTDex (Telazol, Torbugesic and Dexdomitor) IM in hospital. Today: had Gabapentin 1200mg and Acepromazine 15mg PO the night before and the morning of the echo. Still needed more sedation, got 2 mL Butorphanol and 0.2 mL Acepromazine IM before echo. Several ECGs taken while under, during echo. No audible murmur, still semi-awake/aware while sedated.

**ELECTROCARDIOGRAPHIC FINDINGS**

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 120bpm (range 68-150bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. 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. Mild diffuse thickening of mitral valve leaflets with no obvious prolapse into the left atrial lumen. Trivial central mitral regurgitation with no left atrial dilation. No LV dilation in diastole (LVIDdN: 1.49) with a borderline systolic dimension (LVIDsN: 1.06). Mild decline in systolic function for this signalment. The tricuspid valve appears normal with no tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. Trace AI and mild PI. No pericardial or pleural effusion noted. No obvious cardiac masses.

**CARDIAC CHART**

**IMAGING PERFORMED BY**

Karen Ebersole,  
DVM, DABVP

**HOSPITAL NAME**

Scanvet

**REFERRING VET**

Dr. Perkins

**INVOICE**

31971

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7/20/23

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	NA	NA	1.1	1.1	23	42	0.75
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	1.0	1.0	53.1	3.7	4.8	3.7
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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)

Adapted from June Boon, Veterinary Echocardiography, 1998  
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435


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Hansson et al, Vet Rad and Ultrasound 2002	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995	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)

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Mild left heart changes are identified, including mild systolic dysfunction. The LV dimension is normal in diastole with a borderline systolic dimension and mildly decreased fractional shortening for this signalment. A small aortic insufficiency is noted; however, blood pressure assessment is likely not possible in this patient. No additional issues are identified, and the LA is normal, indicating a low risk for complication at this time. The ECG is unremarkable with a respiratory sinus arrhythmia due to sedation. No ventricular arrhythmias are appreciated.

In a senior great Dane, it is unclear if these findings reflect early DCM or simply a normal age-related variant. Follow up is recommended. Consider screening for contributing issues, such as an atypical diet or hypothyroidism.

No medications are indicated prior to significant chamber enlargement. A prior stressed syncopal episode while on Trazadone is of unknown significance in this case without more specific evaluation of the prior ECG. A holter monitor should be considered as a screening tool; however, this may also be an unrealistic option in this case. If syncope recurs in the future, particularly independent of sedation/stress, reassessment of an ECG is recommended. Consider an at home monitoring system, such as an AliveCor monitor.

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

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

**PLAN**

Consider diet history/thyroid status as discussed. Consider a holter monitor and/or reassessing spot check ECGs at home. A BP is recommended if possible.

Recommend conservative monitoring with a recheck echocardiogram in 6 months to screen for any progressive changes, sooner if any clinical signs arise.



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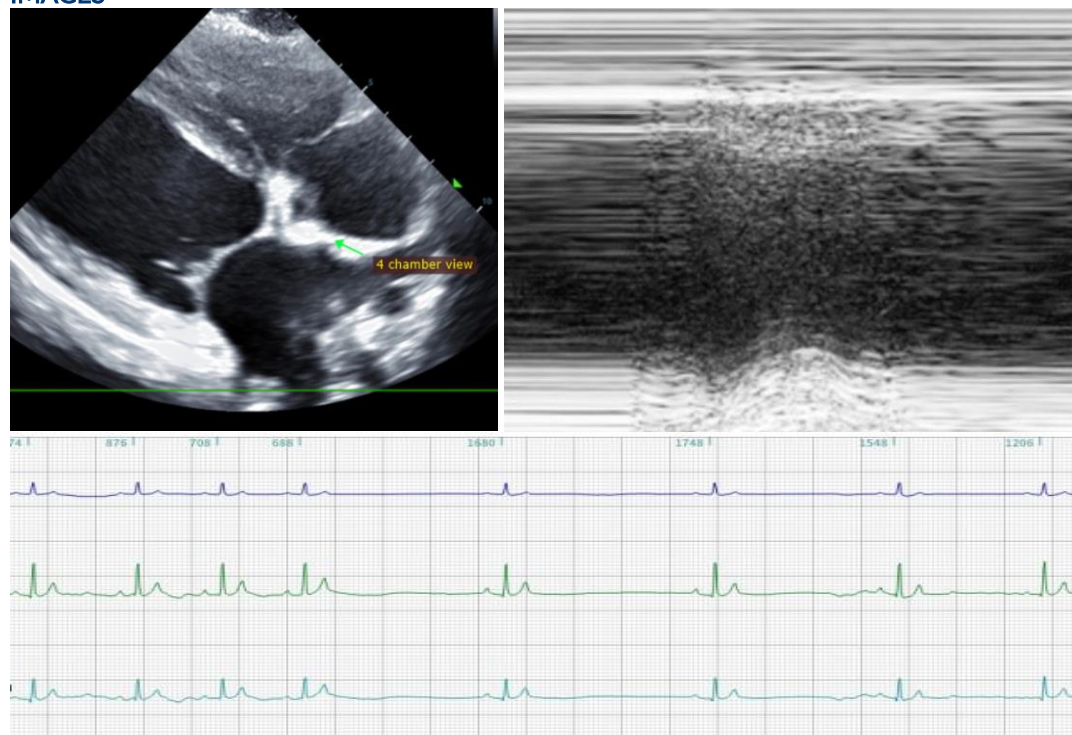
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**IMAGES**



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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