


**PATIENT**

Boog Daniels

**SPECIES**

Canine

**BREED**

Australian Heeler

**SEX**

Male Neutered

**AGE**

10 years

**WEIGHT**

57.8lbs

**INTERPRETED BY**

 Maggie Machen Lamy,  
 DVM, DACVIM  
 (Cardiology)

**IMAGING PERFORMED BY**

Emily Kalenius, DVM

**HOSPITAL NAME**

 Willamette Veterinary  
 Hospital

**REFERRING VET**

Dr. Kalenius

**PRESENTING CLINICAL SIGNS**

History: Presented for lethargy and inappetence and retching.

-Abnormal PE/Chem/CBC/UA Results: PE = pale gums, muffled heart sounds, thready femoral pulses, hypothermia. TFAST and ECG confirm cardiac tamponade. Pericardiocentesis performed (200 ml blood). VPCS responded to lidocaine, now in sinus rhythm. CBC - mild reticulocytosis CHEM 17 GLU 183, CREA 2 mg/dl, PHO 2.2 mg/dl, ALT 368 PT/PTT WNL USG 1.020.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild thickening of the anterior leaflet of the mitral valve with no obvious prolapse into the left atrial lumen. No mitral regurgitation with normal left atrial dimension. Normal LV diameter with low normal myocardial function. Normal LV wall thickness. Tricuspid valve appears normal in form and function. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. No obvious tumor in the AV groove or attached to the auricle. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. Normal pulmonic outflow velocity; laminar flow. No aortic or pulmonic insufficiency. Scant pericardial effusion. No pleural effusion seen.

**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	NA	NA	1.7	1.3	49	82	0.8
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	93	1.7	1.1	26.2	2.4	2.8	1.4
*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)
				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)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The two most common causes of hemorrhagic pericardial effusion are idiopathic and neoplastic. Less commonly, pericarditis (an inflammatory condition), a left atrial tear, or a bleeding disorder should also be considered. Idiopathic by definition means that a cause cannot be found. If diagnosed (a rule out diagnosis), the long-term prognosis with idiopathic effusion has the potential to be good. Cardiac decompensation is not a rule out for hemorrhagic effusion, however, should always be considered in cases of non-hemorrhagic (transudate, etc.) results.

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Regardless, the cardiac structure and function was found to be largely normal in this study without an obvious tumor or inciting cause identified.

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Canine

Even with this encouraging finding, a small extra-cardiac lesion can easily be missed on 2d ultrasound, particularly in the absence of effusion. A thoracic CT may be reasonable to further screen the external surface of the heart. Additionally, full systemic work up to look for additional lesions (AUS, CXR, etc.) can also be considered.

**BREED**

Australian Heeler

Regardless of underlying cause, it is impossible to predict if and when pericardial effusion will recur. Some patients with idiopathic effusion need to be tapped between 1 and 3 times then never again. Other patients may experience frequent recurrence with either HSA or idiopathic disease. If the effusion reoccurs frequently, a surgical procedure called a pericardiectomy can be discussed.

**SEX**

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No cardiac medications are clearly indicated at this time. Over the counter herbal supplement Yunnan Baiyao (aka Yunnan Paiyao) may help decrease risk of bleeding, however true benefit is speculative (1 capsule PO BID). Please monitor at home for signs of recurrent pericardial effusion including pale gums, difficulty breathing, lethargy/collapse, cough, exercise intolerance, abdominal distention, vomiting, and/or inappetence. If you notice any of these symptoms, urgent evaluation should be sought.

**WEIGHT**

57.8lbs

A recheck echocardiogram is recommended in 2-3 months to reassess the surface of the heart and screen for recurrent effusion, sooner if any recurrence of clinical signs.

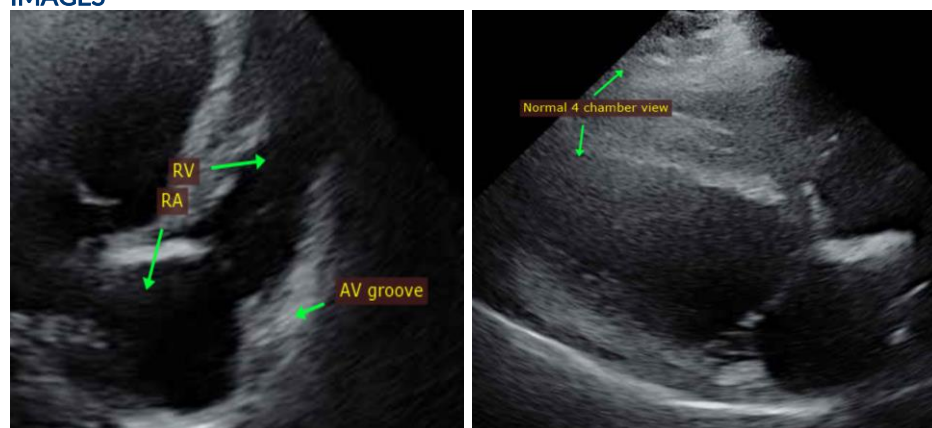
**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGES**

**IMAGING PERFORMED BY**

Emily Kalenius, DVM



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Dr. Kalenius

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.

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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.

**DATE**

11/1/21

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