



**PATIENT**

Gigi Kurtz

**SPECIES**

Canine

**BREED**

Mix

**SEX**

Female Spayed

**AGE**

5 years

**WEIGHT**

6.2lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Kelly Vazquez, CVT

**HOSPITAL NAME**

Ho Ho Kus Veterinary  
Hospital

**REFERRING VET**

Dr. Scott

**INVOICE**

26312

**DATE**

9/12/22

**PRESENTING CLINICAL SIGNS**

History: Presents for possible pleural effusion, weight loss and anemia. No current meds.  
-Abnormal PE/Chem/CBC/UA Results: HCT was 23% upon initial examination, retics 188, WBC 19k, 4 days later the HCT is back up to 42%. Coombs negative.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve leaflets with no prolapse into the left atrial lumen. No mitral regurgitation with no left atrial dilation. Normal LV diameter with adequate myocardial function. 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. No obvious aortic or pulmonic insufficiency. Scant pericardial effusion. No pleural effusion noted. No obvious cardiac masses.

**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	1.0	1.0	40	74	0.1
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	166	1.0	1.2	2.8	1.3	2.0	1.2
*Normal chamber parameters expressed as a mean value (SD)							
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>							
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>							
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							
3 1.27 (5.3) 2.46 (2.46) 1.36 (5.5)							
5 1.40 (4.5) 2.74 (5.2) 1.60 (4.7)							
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**

Unusual case. The underlying cardiac structure and function is normal with no significant valve leaks or chamber enlargement noted. The primary abnormality identified is scant pericardial effusion, which is of unknown origin. CHF is ruled out in this study as a potential cause. No obvious cardiac or extra-cardiac tumors are identified; however, it must be considered that it is difficult to perform a thorough extra-cardiac scan, and this does not rule out small masses. A thoracic CT scan or MRI would be necessary to fully evaluate the surface of the heart and lungs and to screen for mediastinal abnormalities. All that being said, this is considered unlikely given a relatively young small breed dog. Other possibilities should be considered, such as a bleeding disorder, etc.



**PATIENT**

Gigi Kurtz

Given these findings, no clear cause of the effusion is identified, nor have we identified a cause for current clinical signs/anemia. It is important to note that while pericardial effusion is noted, this amount is not the cause of clinical signs; rather this is likely a secondary development.

**SPECIES**

Canine

Ideally the next step in this case would be a diagnostic pericardiocentesis to determine the type of effusion present. A hemorrhagic effusion would suggest a small tumor or bleeding disorder, versus a transudate may support an infectious or inflammatory etiology, etc. Submitting the fluid for cytology and potentially a culture may also be useful as there is no clear answer at this time.

**BREED**

Mix

The amount of effusion is limiting however, as this amount is unlikely to be obtained safely. As an alternative, full systemic evaluation should also be considered to screen for additional abnormalities including advanced imaging as discussed. **Given the highly unusual nature of this case, referral to a multi-specialty center is recommended.**

**SEX**

Female Spayed

Cardiac medications are not indicated in this case.

**AGE**

5 years

Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

**WEIGHT**

6.2lbs

**PLAN**

Consider referral as discussed; next steps including a potentially a diagnostic pericardiocentesis if the volume increases, repeat lab work, thoracic CT/MRI and/or advanced echocardiography/thoracic ultrasound. Full systemic evaluation including AUS should be considered.

**INTERPRETED BY**

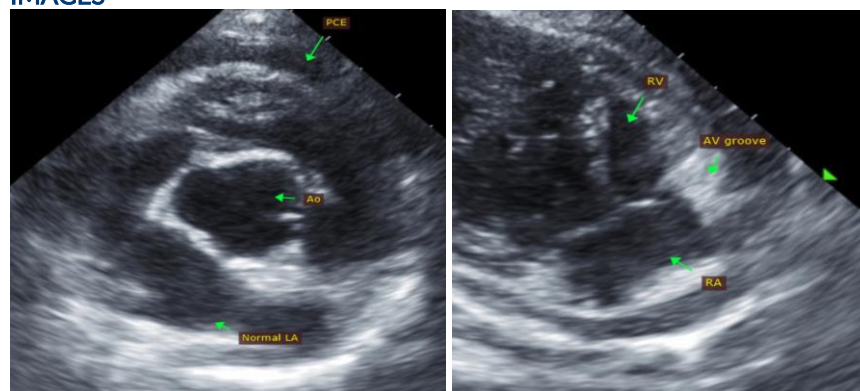
Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

Follow up dictated by results of additional diagnostics/therapy.

**IMAGING PERFORMED BY**

Kelly Vazquez, CVT

**IMAGES**



**HOSPITAL NAME**

Ho Ho Kus Veterinary  
Hospital

**REFERRING VET**

Dr. Scott

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.

**INVOICE**

26312

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**

9/12/22

**Maggie Machen Lamy, DVM**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com