



**PATIENT**

Brandy Keller

**SPECIES**

Canine

**BREED**

Lab

**SEX**

SF

**AGE**

9 years

**WEIGHT**

92 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Joy

**INVOICE**

12869

**DATE**

12/21/21

**PRESENTING CLINICAL SIGNS**

Breathing has become less labored. Abdomen less distended. Down 23lbs since 12/14. 12/14/21 started: Vetmedin 10mg BID, Benazepril 10mg 2tabs SID, Furosemide 50mg BID

Abnormal PE/Chem/CBC/UA Results: Abdominal US 12/14/21: Hepatomegaly exhibiting multifocal variably echogenic intraparenchymal nodules • Severe peritoneal free fluid exhibiting mild cellular component - suspect concurrent pleural free fluid • Subjective dilated cranial abdominal caudal vena cava • Subjective cardiac chamber enlargement with potential for tachycardia and suspect potential systolic dysfunction

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

	<b>CANINE</b>	<b>MR</b>	<b>TR</b>	<b>LA/AO</b>	<b>LA/AO</b>	<b>FS</b>	<b>EF</b>	<b>EPSS</b>
<b>CARDIAC PARAMETERS</b>		<b>VMAX</b> (m/s)	<b>VMAX</b> (m/s)	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
<b>NORMAL PARAMETER</b>		4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>				2.2	2.0	28.8	59.3	0.57
	<b>CANINE</b>	<b>HR</b>	<b>AV</b>	<b>PV</b>	<b>BODY WEIGHT</b>	<b>LA</b>	<b>LVIDd</b>	<b>LVIDs</b>
<b>CARDIAC PARAMETERS</b>		(BPM)	<b>VMAX</b> (m/s)	<b>MAX</b> (m/s)	(kg)	2D short axis Base view (cm)	Avg; 2D and m-mode short axis (cm)	Avg; 2D and m-mode short axis (cm)
<b>NORMAL PARAMETER</b>		50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>		155	1.1	0.9		5.9	5.9	

**Cardiac Presentation**

The echocardiogram in this patient demonstrated severely enlarged **left atrial** size based on 2 different LA measurement methods. Deviation of the interatrial septum toward the right atrium, indicative of increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented mild vegetative thickening suggestive of endocardiosis without evidence of valvular prolapse or chordae tendineae rupture. Doppler indicated measurable primarily eccentric insufficiency. The **left ventricle** presented mild subjective reduced thicknesses with maintained linear contour with significant increased left ventricle volume. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was subnormal as evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed minor subjective increased size, yet normal structure and content. No evidence of masses was noted or significant chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. Tricuspid valve insufficiency was present on color doppler assessment. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and

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thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No overt **pericardial** or free pleura fluid was visualized. No echographically detectable evidence of infiltrative disease was visible and is considered less likely. The cranial **mediastinum and pericardial regions** were free of masses in the visible window. No evidence of arrhythmogenic disease or tachycardia was noted.

Brief sonographic assessment of the cranial abdomen revealed persistent subjective minor cranial abdominal ascites.

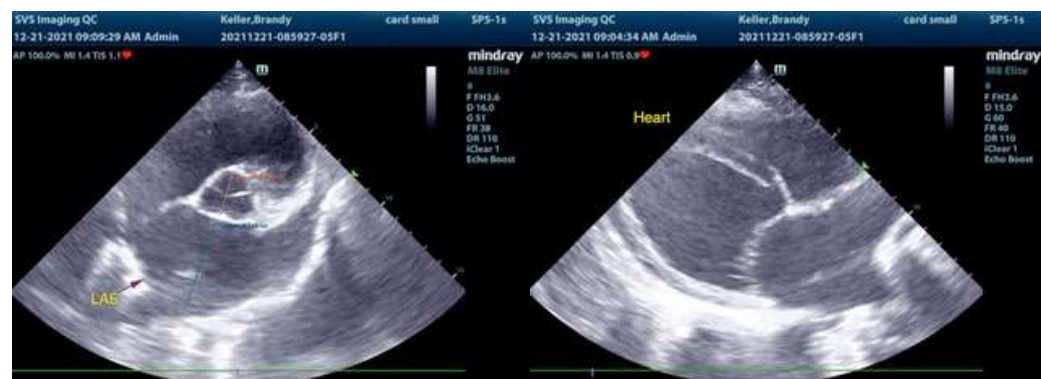
**ULTRASONOGRAPHIC FINDINGS****Primary Findings**

- Severe LA/LV enlargement with decreased LV systolic dysfunction
- Eccentric MR
- Concurrent TR - estimated pulmonary pressure gradient (approximately 30 mmHg) consistent with mild elevated pulmonary pressure

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Potential considerations In this case may include chronic large breed mitral valve disease or DCM-like cardiomyopathy which may be primary in nature or potentially secondary to taurine deficiency, grain-free boutique exotic diet (hypothyroidism, myocarditis, or less likely tachycardia-induced cardiomyopathy or Infiltrative disease such as lymphoma.

It is suspected that the left heart disease predisposes to pulmonary edema, yet is likely contributing to elevated pulmonary pressures and secondary ascites. Correlation with ascites analysis cytology +/- C/S if clinically indicated is recommended. Continued current protocol with potential furosemide / spironolactone combination is warranted with monitoring of renal panel, ECG, and blood pressure is advised. A guarded prognosis going forward, as this patient will be at continued increased risk for CHF, malignant arrhythmias, and potential sudden death. Monitoring of resting respiration rate is recommended. Recheck echo is suggested in 4-6 months, sooner if problems arise.



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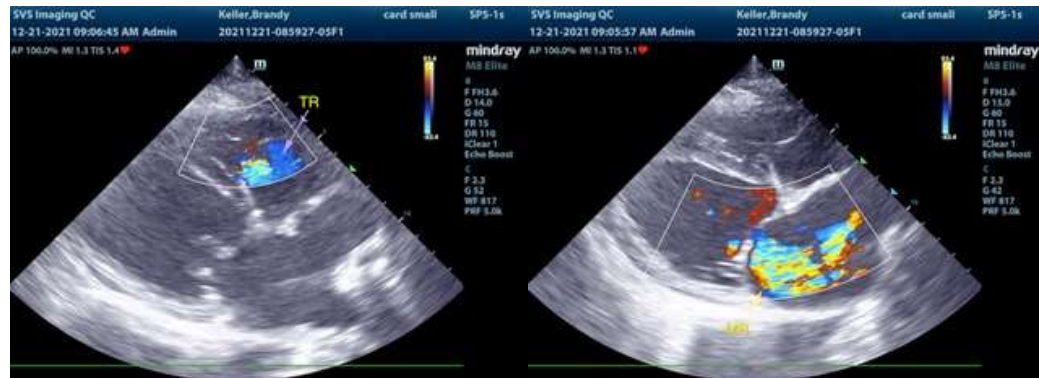
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
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