

**PATIENT**

Abel Storm

**SPECIES**

Canine

**BREED**

Labrador

**SEX**

Male Neutered

**AGE**

2 years

**WEIGHT**

82lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Lindsey Daniel, DVM

**HOSPITAL NAME**

Village Veterinary

**REFERRING VET**

Dr. Kuvkendall

**INVOICE**

20455

**DATE**

8/10/21

**PRESENTING CLINICAL SIGNS**

History: Tachycardia; ascites.

**ELECTROCARDIOGRAPHIC FINDINGS** \*Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A photograph of an anesthesia monitor is available. Rapid narrow complex tachycardia with a recorded HR of 300bpm is identified which appears accurate. ECG diagnosis: Rapid SVT (likely AT)

**ECHOCARDIOGRAM FINDINGS**

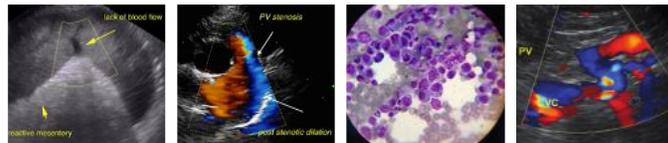
2D, m-mode, color flow and doppler imaging is available. Severe left ventricular dilation with decreased systolic function. Decreased LV wall thickness with increased sphericity. Moderate left atrial enlargement. The mitral valve appears normal in form and function, with no obvious prolapse into the left atrial lumen. Mild central mitral regurgitation secondary to annular stretch. Mild tricuspid regurgitation. Moderate right atrial and ventricular dilation. The aortic valve is normal in morphology and mobility. No aortic insufficiency. Normal PA/Ao velocities. No pericardial or pleural effusion noted. Large volume ascites. No obvious cardiac tumors.

**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)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
<b>PATIENT</b>	NA	NA	NM	1.75	13	28	1.5
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)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
<b>PATIENT</b>	320	1.1	0.6	37	4.0	6.1	5.3
*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)
*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)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The most striking finding is a rapid supraventricular tachycardia (SVT) with heart rates greater than 300 bpm. Given the breed an accessory pathway is suspected; however, full assessment with a 6 lead tracing is recommended in the future. Regardless the heart rate is extremely high and has led to



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development of ascites consistent with congestive heart failure. Four chamber dilation is present likely secondary to tachycardia (tachycardia-induced cardiomyopathy). The true understanding of underlying function/dimensions cannot be commented on until conversion to sinus rhythm is achieved (ie to rule out a primary cardiomyopathy which is considered less likely).

**SPECIES**

Canine

Given the severity of the tachycardia, consider overnight hospitalization for immediate stabilization, and monitoring. Sustained tachycardia can cause lethargy, collapse, and sudden death and this should be expressed to the owner. If declined, oral medications can be utilized as below with strict exercise restriction in the short term. If the patient has any further decline, immediate reevaluation is advised.

**BREED**

Labrador

Tachyarrhythmias can be primary in nature, or develop secondary to structural cardiac disease, fibrosis, myocarditis, etc. Alternatively, extra-cardiac stimuli such as neoplasia, catecholamine release, splenic/GI disease, etc can also contribute. Given the signalment, my assumption is this patient has primary conduction disease (accessory pathways being overrepresented in this breed) with secondary 4 chamber dilation; however, reassessment is recommended once controlled. Assuming an accessory pathway is confirmed, lifelong medical management will be necessary with potential for breakthrough arrhythmias going forward. Catheter ablation is available at limited facilities and may also be considered pending further evaluation.

**SEX**

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**AGE**

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Omega fatty acid supplementation may be of some long term benefit for arrhythmias. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes in the future. Prognosis is guarded long-term pending assessing response to therapy. Patient will always be at risk for recurrent arrhythmias, CHF and/or sudden death going forward.

**WEIGHT**

82lbs

Plan: Immediate referral for hospitalization and IV rhythm conversion is the ideal treatment. If declined, administer 80 mg sotalol as a loading dose; followed by 40 mg by mouth every 12 hours. Consider therapeutic abdominocentesis if patient is uncomfortable or tachypnea. Institute Pimobendan 0.3mg/kg PO q12h. Institute Lasix/furosemide 1-2mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Thorough diet history recommended with avoidance of BEG options.

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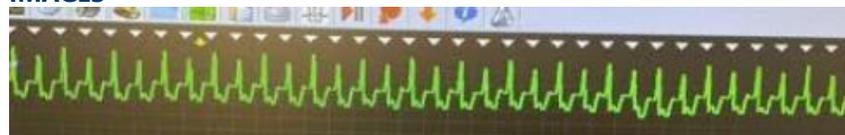
Lindsey Daniel, DVM

If outpatient treatment is elected, reassess heart rate and rhythm in 12-24 hours following initiation of sotalol. Once the rhythm is stabilized, a full 6-lead tracing is recommended ideally with referral to a local Cardiologist. Reassess echocardiogram in 2-3 months to understand underlying structural changes and need for continued diuretic therapy. A Holter is likely indicated pending clinical response.

**HOSPITAL NAME**

Village Veterinary

**IMAGES**



SVT

**REFERRING VET**

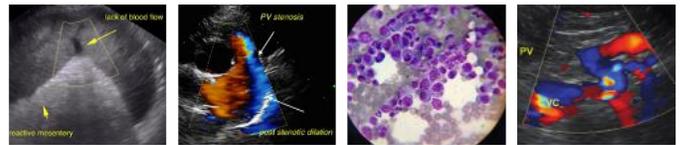
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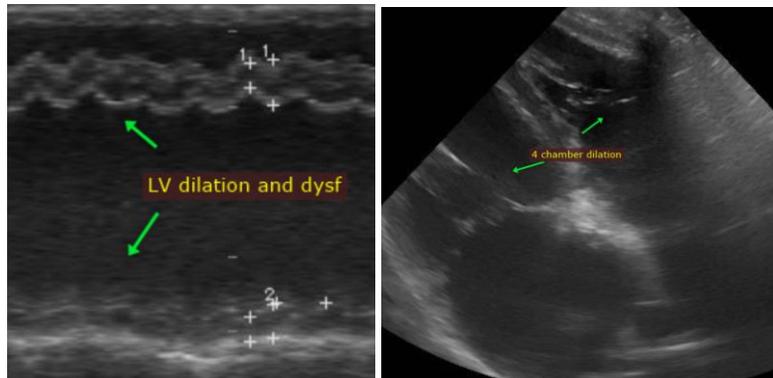
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)