



## PATIENT PRESENTING CLINICAL SIGNS

**PATIENT** Jojo Parker

**SPECIES** Canine

**BREED** Pug

**SEX** Intact Male

**AGE** 13 Years

**WEIGHT** 17.8 Pounds

**INTERPRETED BY** Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY** Sara Hansen

**HOSPITAL NAME** Santa Clara AH

**REFERRING VET** Dr. Thomas

**INVOICE** 39478

**DATE** 7/13/22

1) Grade 4/6 systolic murmur (previously Grade 2/6 last year) 2) Syncope episode noted at home ~1 to 2 time per week. (5 to 20 sec of collapse, quick recovery with minimal to no disorientation, happens mostly after excitement/stress) Previous ECHO with animal sounds noted borderline pulmonary hypertension. Concern for worsening pulmonary hypertension leading to syncope.  
Abnormal PE/Chem/CBC/UA Results: RR: Panting. HR: 118 Blood Pressure Measurements 126/96 (107); 115/93 (102); 145/83 (127); 174/143 (154); Current Medications Galliprant and gabapentin

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

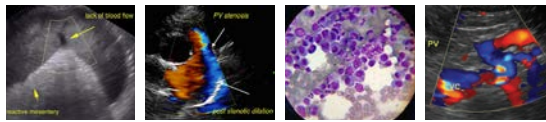
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			1.0	1.4	67	94	0.5
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	Variable 80	1.3	1.0		2.94	2.93	

## Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. Trivial **aortic** insufficiency present, not clinically significant. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum** and **pericardial** and **extra-cardiac** regions were free of masses in the visible window.

## PRIMARY FINDINGS

- Normal echocardiogram



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Structurally the heart appears unremarkable. No evidence of volume overload. No primary cardiac cause for the clinical signs, unless an arrhythmogenic issue is occurring. Normal structure and function with trivial insufficiency noted. Holter monitor warranted. Primary CNS disease should be considered. It does not appear the pulmonary hypertension is a clinical issue at this time. However, given the one systolic pressure that was elevated, hypertensive crises may be occurring. Recommend abdominal sonogram to assess for comorbidities such as adrenal tumors or renal disease. The echocardiogram is somewhat similar to prior sonogram, yet no evidence of pulmonary hypertension present at this time.

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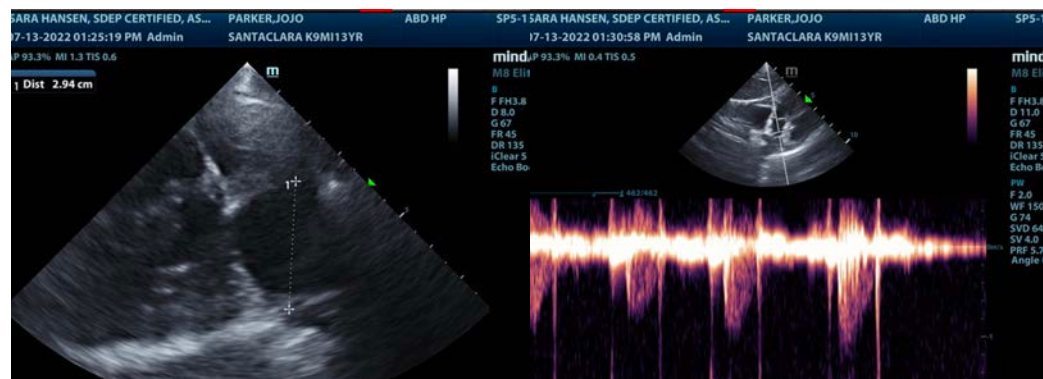
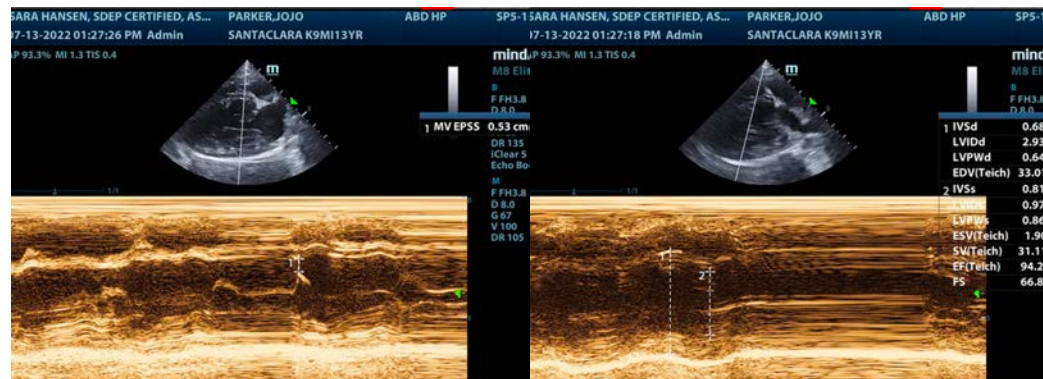
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

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