



### PATIENT

Summer Cox  
Emp Pet

### SPECIES

Canine

### BREED

Brussels Griffon Mix

### SEX

FS

### AGE

16 years

### WEIGHT

20 lbs.

### INTERPRETED BY

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

### IMAGING PERFORMED BY

Dr. Meridith Swart

### HOSPITAL NAME

Swart Veterinary  
Imaging

### REFERRING VET

Dr. Meridith Swart

### INVOICE

13069

### DATE

1/14/22

### PRESENTING CLINICAL SIGNS

Patient is owned by a tech at the referring hospital. Recent history of low-grade murmur (grade II) auscultated at time of exam in preparation for dental cleaning. Patient is not having any clinical signs. Murmur was incidental finding. Tech requested echo to be safe prior to anesthesia.

### 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			1.35	1.2	45.5	80.2	0.2
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	NM	1.1	0.8		2.6	2.2	

### 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. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. 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. Trace **pulmonic** valve insufficiency was present on color doppler. **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.



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## ULTRASONOGRAPHIC FINDINGS

### Primary Findings

- Overtly normal cardiac structure and function
- Tract pulmonic valve insufficiency

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of structural or functional cardiomyopathy with a definitive cause of the low-grade murmur not overtly evident. Trace PV insufficiency is present yet not audible. No other clinical issues such as systolic dysfunction, left or right heart chamber enlargement or significant valvular Insufficiencies / evidence of stenotic disease were present. In the absence of dehydration or anemia, a physiologic flow murmur potentially present at higher heart rates or small flow abnormality not visualized here may be possible. Regardless, the overall normal cardiac structure and function indicate that the relative risk is low. No Indication for cardiac medications was evident. No anesthetic contraindications were noted. Conservative monitoring of the murmur is appropriate with recheck echocardiogram suggested in 6-12 months, sooner if murmur Intensity progresses.

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Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

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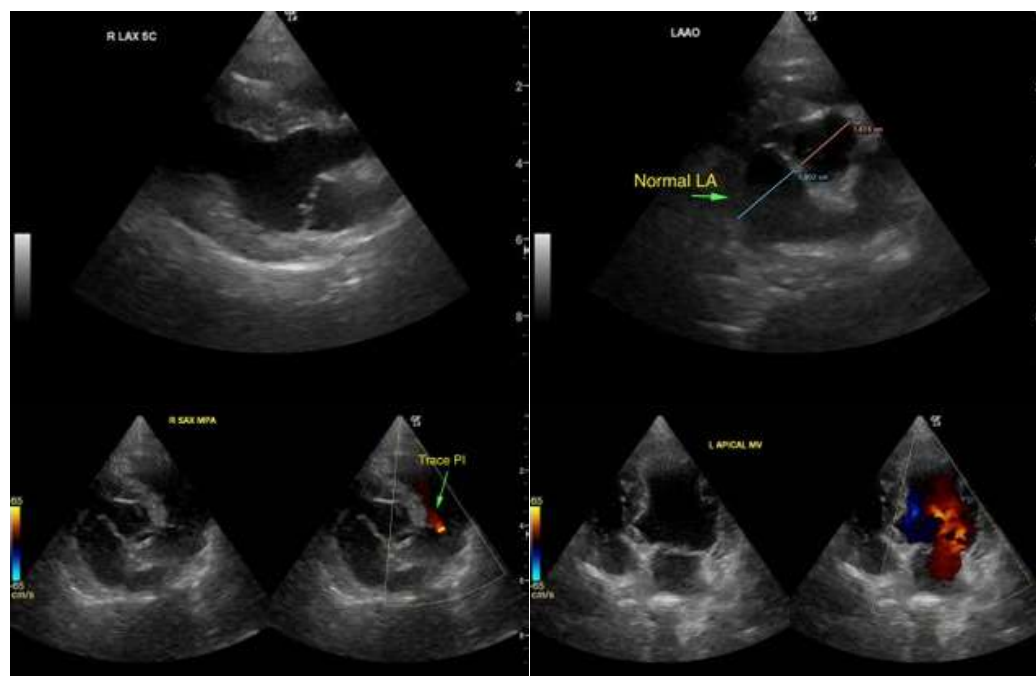
Dr. Meredith Swart

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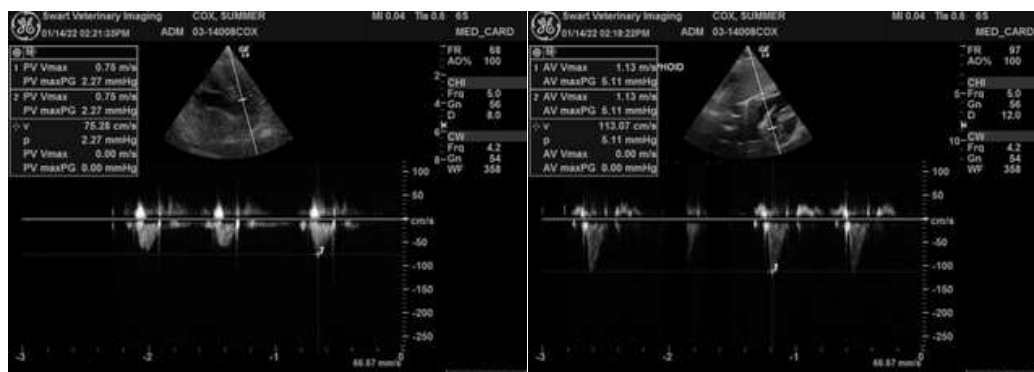
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)**  
info@SonoPath.com