



PATIENT

Boone Retberg

PRESENTING CLINICAL SIGNS

Boone came in for routine neuter and attending Dr notice a heart murmur. Requested a stat echo to confirm in this dog can have anesthesia for surgery today.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

BREED

King Charles Cavalier

SEX

Male

AGE

6 Months

WEIGHT

16.6 Pounds

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			NM	1.23	45.2	80	0.18
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				
PATIENT	110	1.1	0.8		2.0	2.19	

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. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow without turbulence, and overall diameter. Color doppler assessment revealed trace pulmonic valve insufficiency. 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.

ULTRASONOGRAPHIC FINDINGS

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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of structural or functional cardiomyopathy with no definitive cause of the murmur evident in this study. Trivial pulmonic valve insufficiency is noted. However, this is unlikely to be heard on physical exam. No clinical issue such as systolic dysfunction, overt stenotic disease, or shunt, or

INTERPRETED BY

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

IMAGING PERFORMED BY

Kim Liedberg

HOSPITAL NAME

SVS Imaging WI

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Dr. Goertz

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significant valvular insufficiencies were present. In the absence of potential volume changes (dehydration) or anemia, other possibilities may include a physiologic flow murmur present at elevated heart rate, or a small flow abnormality not seen. Baseline lab work could be considered for further clarification if not already done. Regardless, the overall normal cardiac structure and function likely indicates that the risk of future complication secondary to an unspecified murmur is low. It would be reasonable to monitor periodically via recheck echocardiography in the future, specifically if the murmur persists or progresses. Pending radiographic and ECG assessment, no overt anesthetic contraindications. Screening blood pressure is recommended. 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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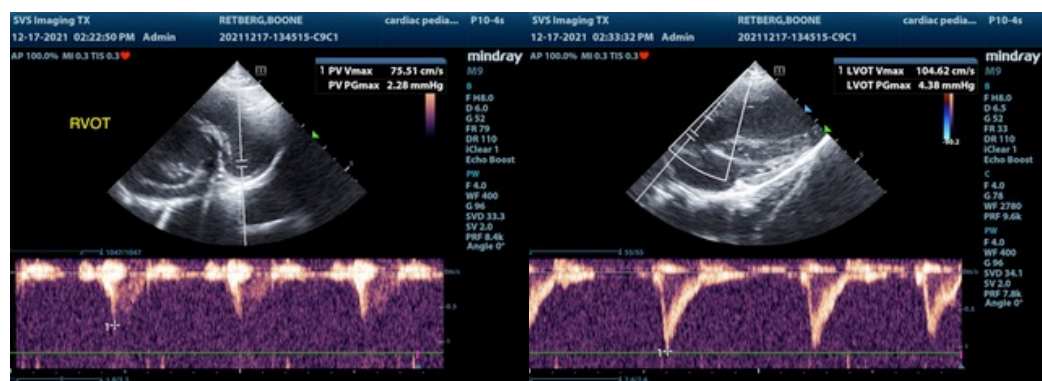
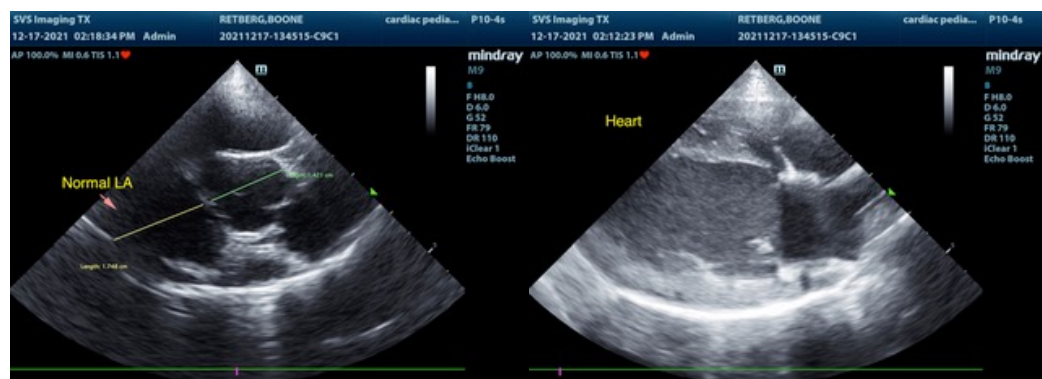
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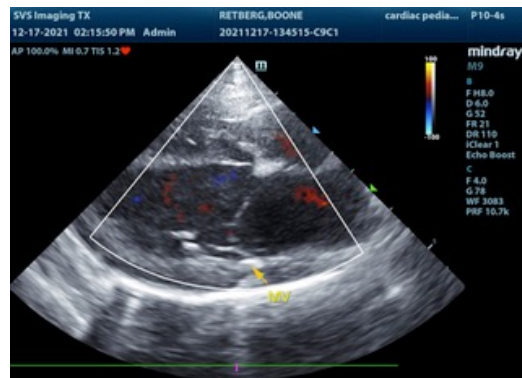
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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