



**PATIENT PRESENTING CLINICAL SIGNS**

Salem Deller History: O reports huffing randomly

**SPECIES** Abnormal PE/Chem/CBC/UA Results: BNP--1561

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

**BREED**

Leonberger

**SEX**

Male

**AGE**

1y 4m

**WEIGHT**

125 lbs

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Kerri Becker

**HOSPITAL NAME**

Fredon AH

**REFERRING VET**

N/A

**INVOICE**

13377

**DATE**

4/7/26

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	--	1.2	39	74	0.54
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LAD LA MAX 4 Chamber	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	127	1.6	1.2	--	4.6	5.1	--

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 2 separate methods of LA evaluation. No evidence of deviated intra atrial septum. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. No evidence of MR noted on doppler. 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. Normal measured LVOT velocity. 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. No evidence of TR noted doppler. 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). Normal measured RVOT velocity. 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. No evidence of arrhythmia or hepatic congestion present.



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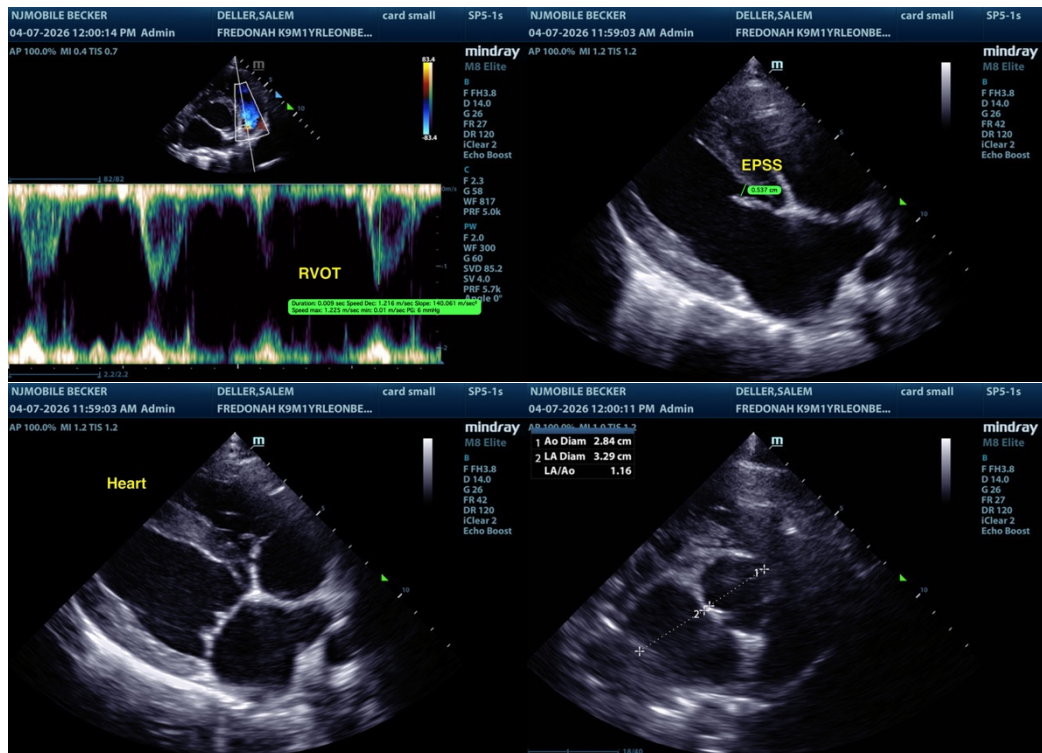
**ULTRASONOGRAPHIC FINDINGS**

- Normal cardiac structure/function

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No evidence of cardiac clinical issues such as left or right heart chamber enlargement, LV systolic dysfunction, arrhythmia, significant valvular insufficiencies, DCM criteria, pulmonary hypertension or congenital defect as an obvious cardiac contributing factor to the patient's clinical signs. Elevated B and P level in the absence of structural functional cardiomyopathy may at times be associated with renal disease, airway disease, systemic hypertension or other potentially systemic influences.

Correlation with 3-view chest radiographs, bloodwork and diet history is recommended. No indication for cardiac medications. Sonographic monitoring recommended if persistent or progressive elevated B and P level or clinical signs. Anesthetic risk is considered mild. If required, the following protocol is suggested. 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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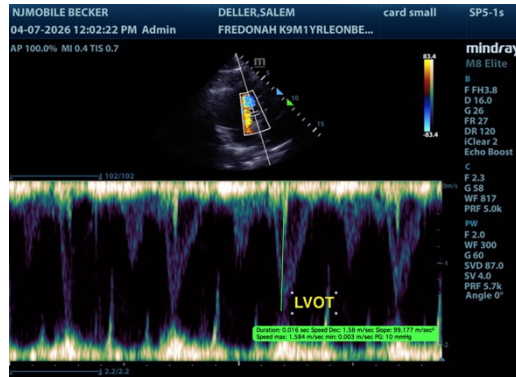
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

[info@sonopath.com](mailto:info@sonopath.com)