



## PATIENT

Lena Brower

## SPECIES

Canine

## BREED

Shepherd Mix

## SEX

FS

## AGE

11 years

## WEIGHT

66 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

Legacy AH

## REFERRING VET

Dr. Kristin Potenzzone

## INVOICE

14442

## DATE

7/28/22

## PRESENTING CLINICAL SIGNS

Patient presents for coughing and weakness. Current meds: Vetmedin 3/4 of a 5mg tab BID.  
Abnormal PE/Chem/CBC/UA Results: High ProBNP.

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

| CANINE<br>CARDIAC<br>PARAMETERS | MR<br>VMAX<br>(m/s) | TR<br>VMAX<br>(m/s) | LA/AO<br>(Boon<br>method) | LA/AO<br>(Heart Base;<br>Swe) | FS<br>(%)                                | EF<br>(%)  | EPSS<br>(cm)   |
|---------------------------------|---------------------|---------------------|---------------------------|-------------------------------|--|--|--|
| NORMAL<br>PARAMETER             | 4.5-5.5             | <2.7                | 1.3                       | <1.3                          | 28-40                                    | 40-100   | <0.6   |
| PATIENT                         | 5.0                 | 2.4                 |                           | 1.6                           | 31.9                                     | 63.6   | 0.48   |
| CANINE<br>CARDIAC<br>PARAMETERS | HR<br>(BPM)         | AV<br>VMAX<br>(m/s) | PV<br>MAX<br>(m/s)        | BODY<br>WEIGHT<br>(kg)        | LA<br>2D short axis<br>Base view<br>(cm) | LVIDd<br>Avg; 2D and m-<br>mode short axis<br>(cm) | LVIDs<br>Avg; 2D and<br>m-mode<br>short axis<br>(cm) |
| NORMAL<br>PARAMETER             | 50-100              | 0.7-1.7             | 0.7-1.6                   |                               |  |  |  |
| PATIENT                         | 107                 | 1.4                 | 0.8                       |                               | 5.4                                      | 4.7  |  |

## Cardiac Presentation

The echocardiogram in this patient demonstrated mildly enlarged **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with mild endocardiosis. Doppler indicated measurable primarily eccentric insufficiency. The **left ventricle** presented thicknesses with linear contour with mild subjective increased left ventricle volume. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. Mild TR was present on doppler. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** 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. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.



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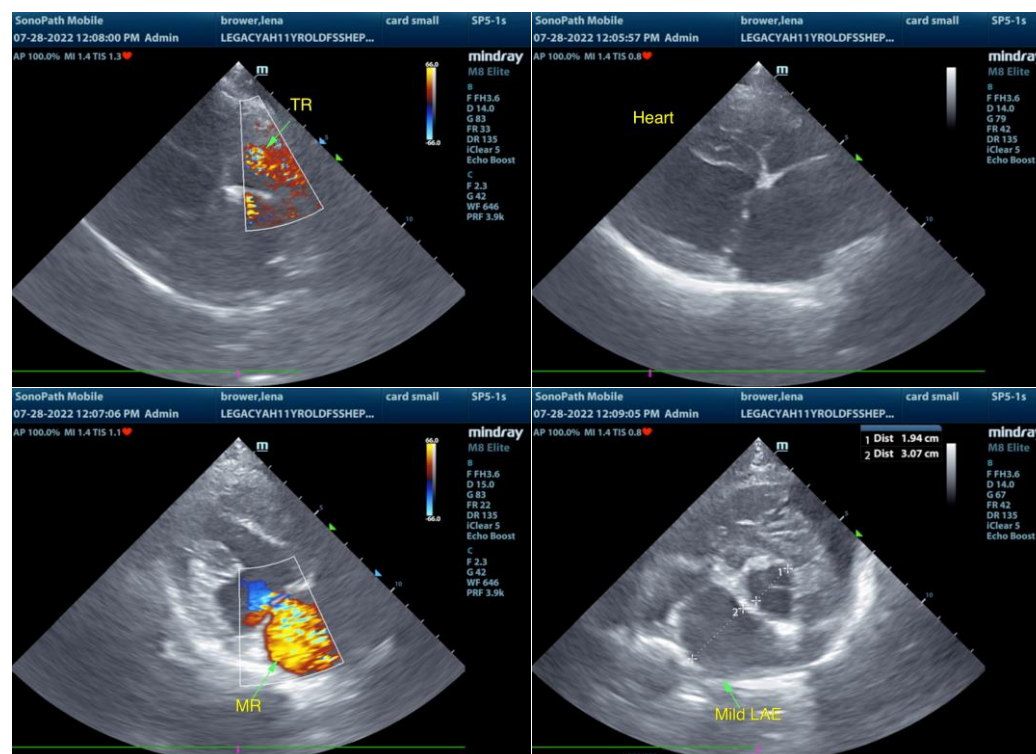
## ULTRASONOGRAPHIC FINDINGS

- Moderate eccentric MR
- Mild TR - estimated pulmonary pressure gradient (approximately 23 mmHg) suggestive of minor increased pulmonary pressure yet not consistent with clinical pulmonary hypertension
- Mild LA / LV enlargement - DCM criteria was not met

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is most consistent with mild chronic degenerative valvular changes with secondary eccentric mitral valve and mild tricuspid valve insufficiency. The mild LA and LV enlargement indicate that the current and future risk going forward of complication is elevated.

Prognosis at this stage is highly variable and serial sonographic monitoring is required for further prognosis. Pimobendan 0.3 mg/kg PO BID (approximately 9.0-10.0 mg PO BID,) is recommended. Three-view chest radiographs are suggested to assess for evidence of pulmonary edema vs. primary lower airway disease as a contributing factor to the patient's coughing. The lowest effective dose of diuretic therapy would be indicated if clinical evidence of pulmonary edema. The coughing in this patient is potentially multifactorial. Antitussive medication such as Hydrocodone may prove beneficial. Recheck echocardiogram is recommended in 6 months, sooner if progressive clinical signs i.e., exercise intolerance, consistent coughing, etc., are noted.





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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**