



**PATIENT**

Toby Arbus

**SPECIES**

Canine

**BREED**

Pomeranian Mix

**SEX**

MN

**AGE**

12yr

**WEIGHT**

14 lbs.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Legacy AH

**REFERRING VET**

Dr. Potenzzone

**INVOICE**

14986

**DATE**

9-27-22

**PRESENTING CLINICAL SIGNS**

Pre-sx evaluation for dental. Grade III/VI heart murmur. No current meds.  
Abnormal PE/Chem/CBC/UA Results: wnl

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

| CANINE                    | MR                   | TR                   | LA/AO               | LA/AO             | FS                                 | EF                                    | EPSS                                  |
|---------------------------|----------------------|----------------------|---------------------|-------------------|------------------------------------|---------------------------------------|---------------------------------------|
| <b>CARDIAC PARAMETERS</b> | <b>VMAX</b><br>(m/s) | <b>VMAX</b><br>(m/s) | (Boon method)       | (Heart Base; Swe) | (%)                                | (%)                                   | (cm)                                  |
| <b>NORMAL PARAMETER</b>   | 4.5-5.5              | <2.7                 | 1.3                 | <1.3              | 28-40                              | 40-100                                | <0.6                                  |
| <b>PATIENT</b>            | 6.0                  | 2.3                  | 1.42                | 1.47              | 35.2                               | 66.7                                  | 0.26                                  |
| CANINE                    | HR                   | AV                   | PV                  | BODY WEIGHT       | LA                                 | LVIDd                                 | LVIDs                                 |
| <b>CARDIAC PARAMETERS</b> | (BPM)                | <b>VMAX</b><br>(m/s) | <b>MAX</b><br>(m/s) | (kg)              | 2D short axis<br>Base view<br>(cm) | Avg; 2D and m-mode short axis<br>(cm) | Avg; 2D and m-mode short axis<br>(cm) |
| <b>NORMAL PARAMETER</b>   | 50-100               | 0.7-1.7              | 0.7-1.6             |                   |                                    |                                       |                                       |
| <b>PATIENT</b>            | 101                  | 1.1                  | 0.8                 |                   | 3.2                                | 2.6                                   |                                       |

**Cardiac Presentation**

The echocardiogram in this patient demonstrated mildly enlarged **left atrial** size based on 3 different LA measurement methods. Subtle deviation of the interatrial septum towards the right atrium, suggestive of mild increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis with minor prolapse of the septal leaflet. Doppler indicated measurable moderate eccentric insufficiency. Borderline elevated MR velocity was present. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated mild thickening with mild TR 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.



## PATIENT

Toby Arbus

## SPECIES

Canine

## BREED

Pomeranian Mix

## SEX

MN

## AGE

12yr

## WEIGHT

14 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Shari Reffi, CVT

## HOSPITAL NAME

Legacy AH

## REFERRING VET

Dr. Potenzzone

## INVOICE

14986

## DATE

9-27-22

## ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM early / mild B2)
- Mild TR - estimated pulmonary pressure gradient (~20 mmHg)

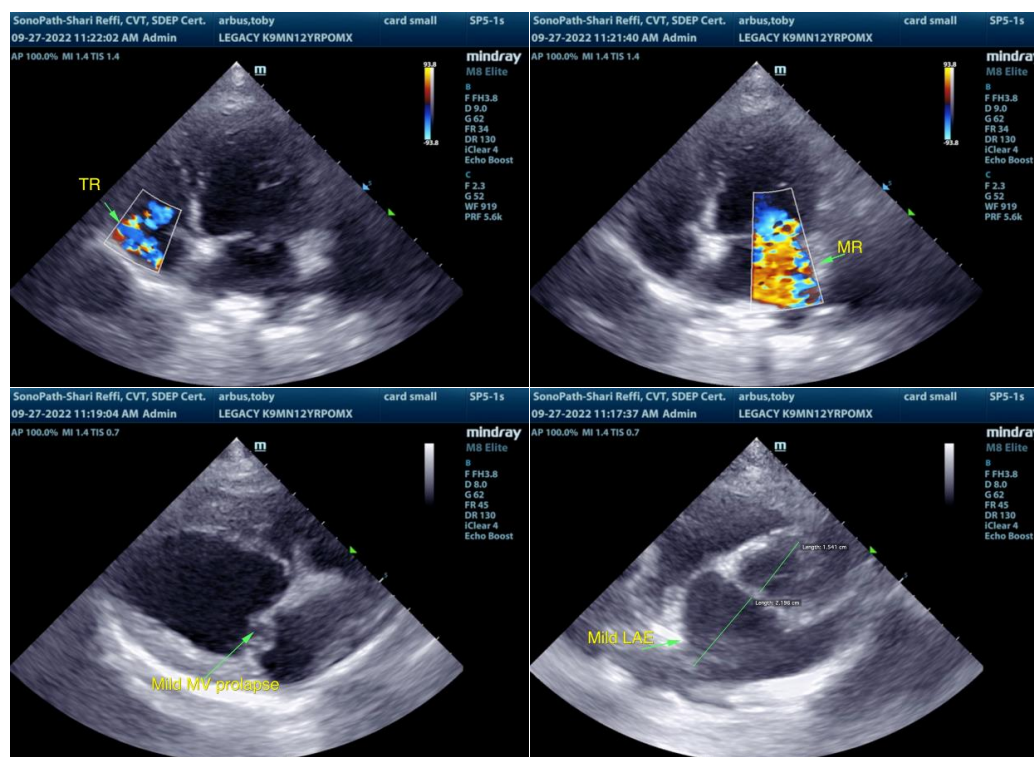
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The mild left atrium enlargement indicates that the overall heart is compensated, yet prognosis at this stage is highly variable. No other clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension were present.

Pimobendan 0.3 mg/kg PO BID is suggested at this stage, even though no evidence of significant chamber enlargement, as this medication may help prolong cardiac changes associated with mitral valve insufficiency. No overt anesthetic contraindications once the patient has been on Pimobendan for 3-5 days and assuming normal BP. This patient may be at some increased risk for fluid underload under anesthesia, therefore judicious IV fluid use is suggested. Serial sonographic monitoring is required for further prognosis. Recheck echocardiogram is recommended in 6 months, sooner if clinical signs arise.

The following anesthetic 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.





**PATIENT**

Toby Arbus

**SPECIES**

Canine

**BREED**

Pomeranian Mix

**SEX**

MN

**AGE**

12yr

**WEIGHT**

14 lbs.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Legacy AH

**REFERRING VET**

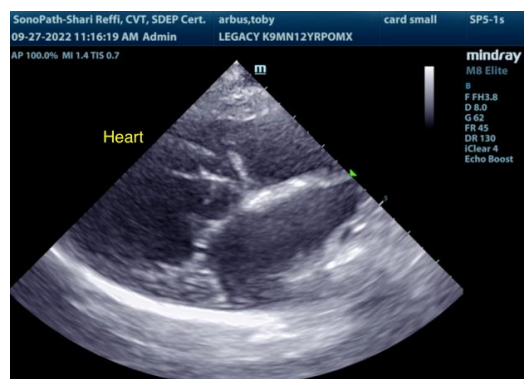
Dr. Potenzzone

**INVOICE**

14986

**DATE**

9-27-22



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