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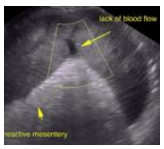
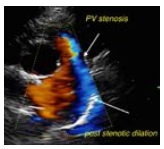
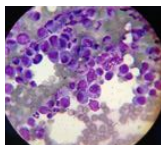
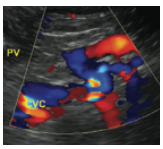

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1-800-838-4268 info@sonopath.com

**PATIENT**

Zero Mulcunry

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Neutered male

**AGE**

11 years

**WEIGHT**

9 lbs

**INTERPRETED BY**

Eric Lindquist, DMV
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Ebersole

**HOSPITAL NAME**

Scanvet

**REFERRING VET**

Dr. Bailey

**INVOICE**

32136

**DATE**

8/3/22

## PRESENTING CLINICAL SIGNS

History: Progressively worsening cough and increased grade heart murmur. Radiographs last done 11/2020 (not available for review, record only), no visible cardiomegaly at that time but + tracheal sensitivity. Heart murmur reported as Grade 3/6 systolic at that time. *Pre-anesthesia echo for dental. Abnormal PE/Chem/CBC/UA Results: PE (7/1/2022): Grade 4/6 systolic heart murmur, Grade 4/4 periodontal disease. No crackles auscultated. No recent BW or Rads.

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Prolapse of the anterior mitral valve leaflet was noted. Complete filling of the left atrium was noted on color flow assessment of the mitral valve. Doppler indicated measurable insufficiency. 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 adequate linear morphology. 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. Mild hepatic vein dilation was noted.

| 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 | 5.81 | 3.16 | 2.01 | 2.02 | 39 | 72 | NM |
| **CANINE CARDIAC PARAMETERS** | **HR** (BPM) | **AV VMAX** (m/s) | **PV MAX** (m/s) | **BODY WEIGHT** | **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 | 155 | 1.8 | 0.88 | 9 lbs | 3.76 max | 2.92 | |

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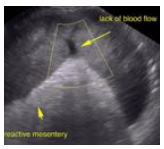
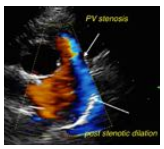
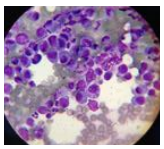
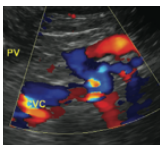

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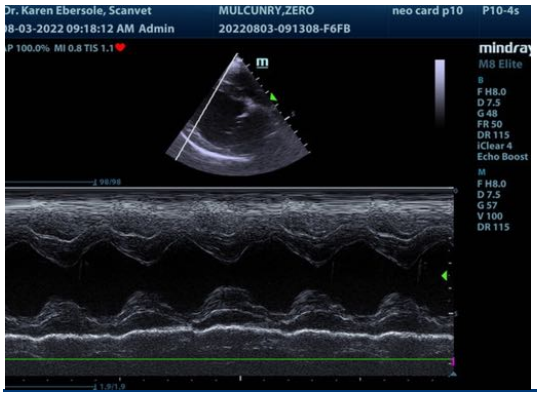
## ULTRASONOGRAPHIC FINDINGS

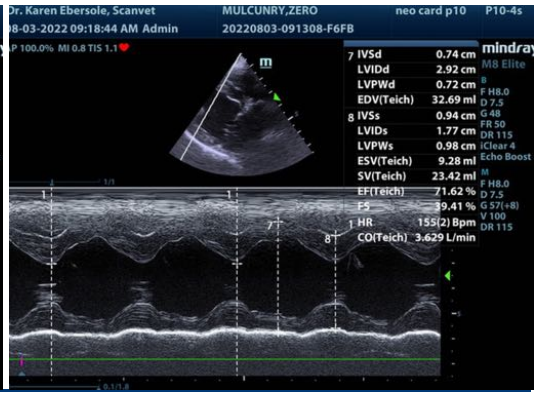
Advanced stage B2/B2+ valvular disease, possible emerging C1 depending upon radiographic findings.

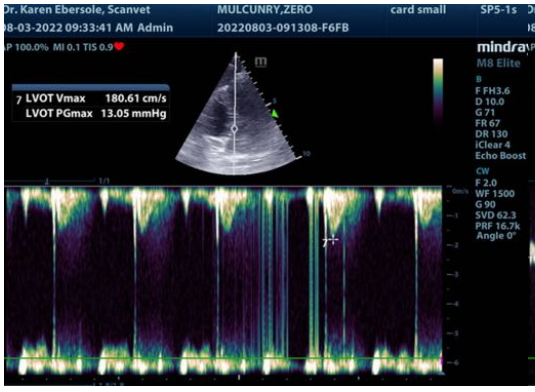
Hepatic vein dilation, this should be monitored at recheck.

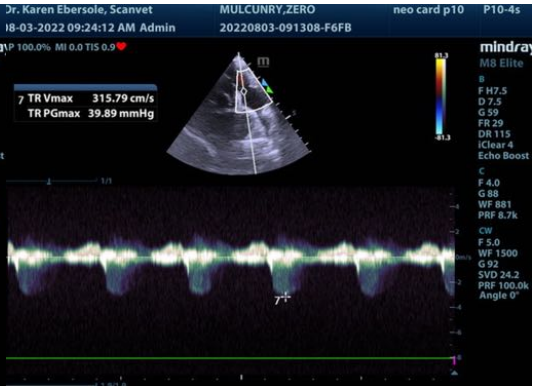
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

If any coughing is present then low-dose Lasix trial and/or ace inhibitor therapy could be considered. If systolic pressure is > 160 then ace inhibitor therapy is indicated. I do not recommend dental procedure at this point. The cough is likely cardiogenic with mainstem bronchus impingement, but should be confirmed on radiographs as well as assessment for any early pulmonary edema. I recommend initiating Pimobendan at 0.3 mg/kg b.i.d., ace inhibitor at 0.5 mg/kg s.i.d. progressing to b.i.d. and Spironolactone at 1-2 mg/kg b.i.d. Reassessment of the clinical signs is recommended. I believe that the patient is in transition between B2-C1 valvular disease. Recheck echocardiogram is recommended in 10-14 days. Sleeping respiratory rate target is < 25/minute. Hycodan can be utilized for cough. Recheck BUN, creatinine, radiographs, blood pressure measurements, and sleeping respiratory rate in 7-10 days.



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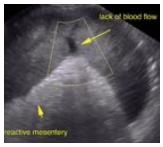

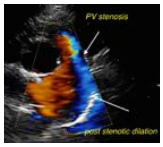

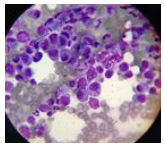
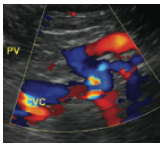


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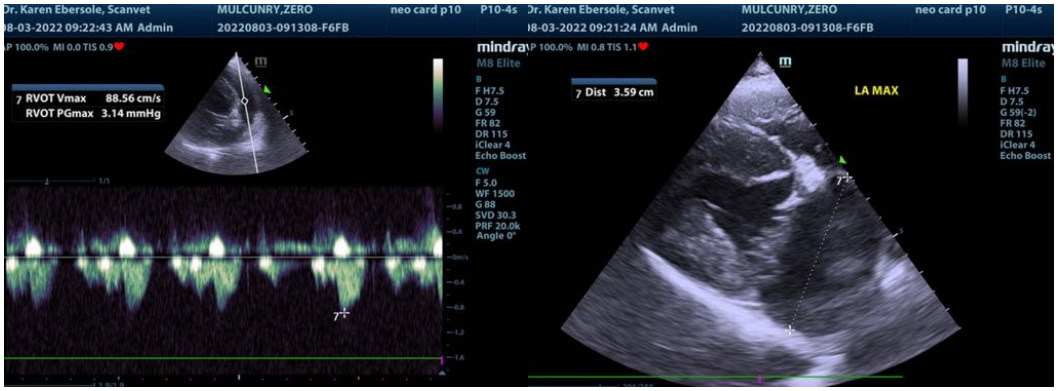


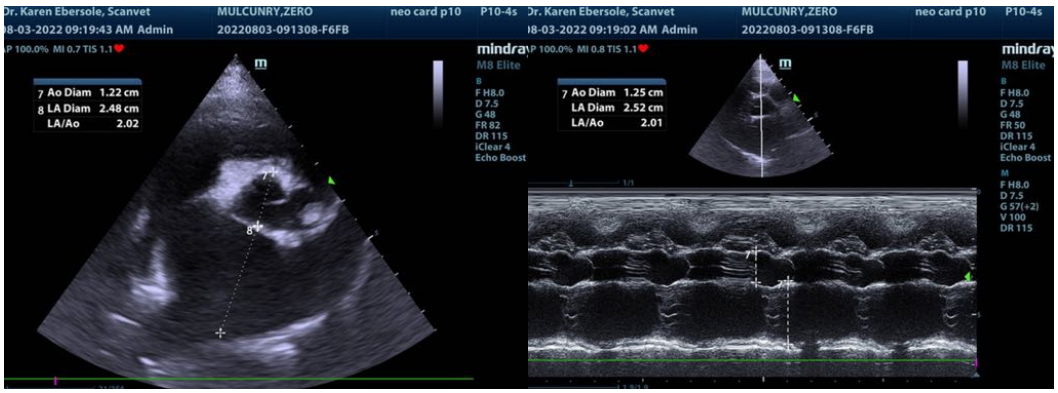


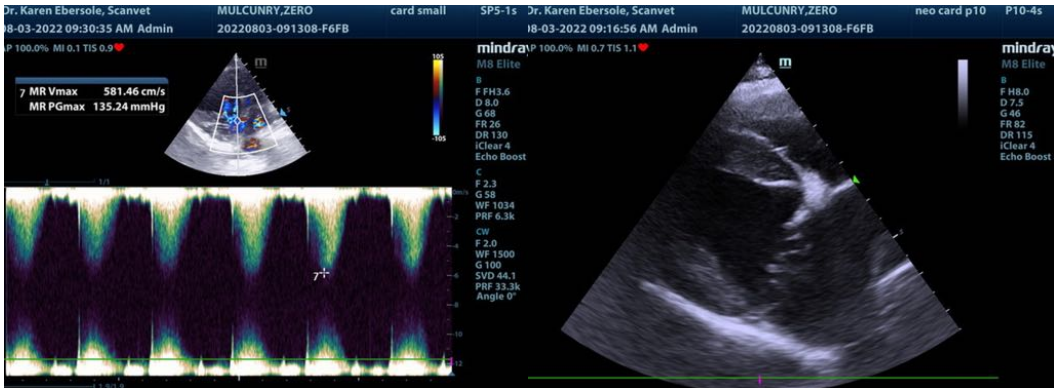


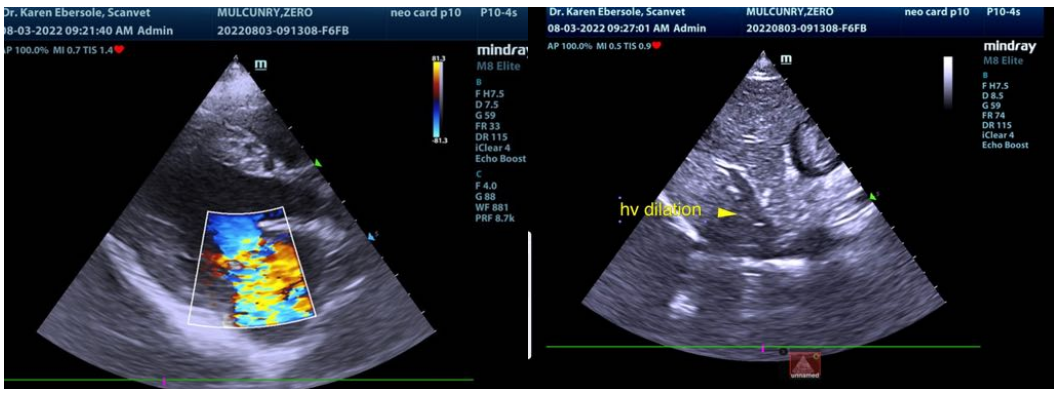

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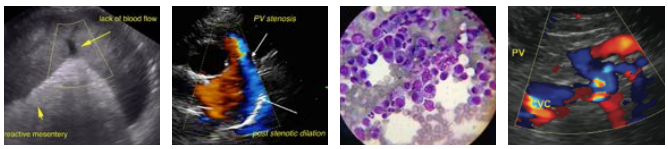


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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com