SonoPath
Clinical Sonography & Telecytology
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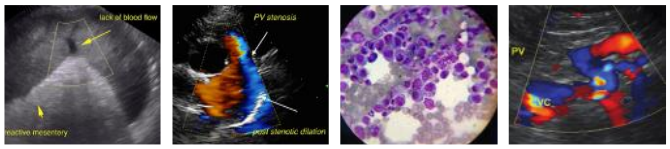


SonoPath.com
1-800-838-4268 info@sonopath.com

**PATIENT**
Gizmo Garcia

**SPECIES**
Canine

**BREED**
Chihuahua

**SEX**
MI

**AGE**
14yr

**WEIGHT**
10.28lb

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

**IMAGING PERFORMED BY**
Kelly Vazquez

**HOSPITAL NAME**
Westwood Regional VH

**REFERRING VET**
Dr. Giammanco

**INVOICE**
13366ag

**DATE**
04/03/2023

## PRESENTING CLINICAL SIGNS

Patient presents for dyspnea, history of CHF - pulmonary crackles on auscultation. On O2 support, no trouble breathing outside of O2 during ultrasound.

Current meds: Sildenafil 20mgs 1/2 tab TID/Benazapril 5 mgs 1/2 tab BID/Pimobendan 5 mgs 1/2 tab SID.

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

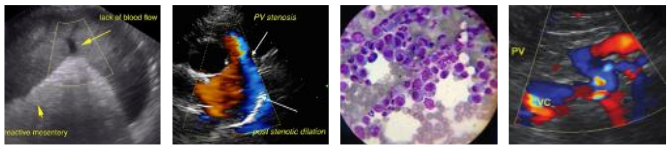
| CANINE CARDIAC PARAMETERS | MR VMAX (m/s) | TR VMAX (m/s) | LA/AO (Boon method) | LA/AO (Heart Base; Swe) | FS (%) | EF (%) | EPSS (cm) |
|---|---|---|---|---|---|---|---|
| NORMAL PARAMETER | 4.5-5.5 | <2.7 | 1.3 | <1.3 | 28-40 | 40-100 | <0.6 |
| PATIENT | | 4.0 | | 1.4 | 41 | 75 | 0.1 |
| **CANINE 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 | 132 | 1.3 | 0.84 | | 1.7 | 1.6 | |

### *Cardiac Presentation*

The echocardiogram in this patient demonstrated normal left atrial size based on 3 different LA measurement methods. The cranial and caudal mitral valve leaflets presented mild thickening consistent with endocardiosis. Doppler indicated mild eccentric insufficiency. The left ventricle presented thicknesses with flattened intraventricular septum and without LV dilation or restriction. 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 moderate increased size and mild bulbous appearance with anechoic content. No evidence of masses was noted. Tricuspid valvular assessment demonstrated mild thickening with moderate TR on Doppler. The right ventricle exhibited increased size compared to the LV with normal myocardial echogenicity and thickness. Pulmonic tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal to mildly depressed measured RVOT velocity was present. 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.

Brief sonographic assessment of the liver revealed no overt congestive criteria or cranial abdominal ascites.

Transdiaphragmatic view revealed comet tail lung pattern, which is echogenic sound wave interface with microconsolidations within the caudal lung field. The lung field should not be visualized by sonogram unless pathology is present. Chest radiographs are recommended to rule out alveolar/lung



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disease such as neoplasia, thromboembolic disease, chronic inflammatory disease with microconsolidation.

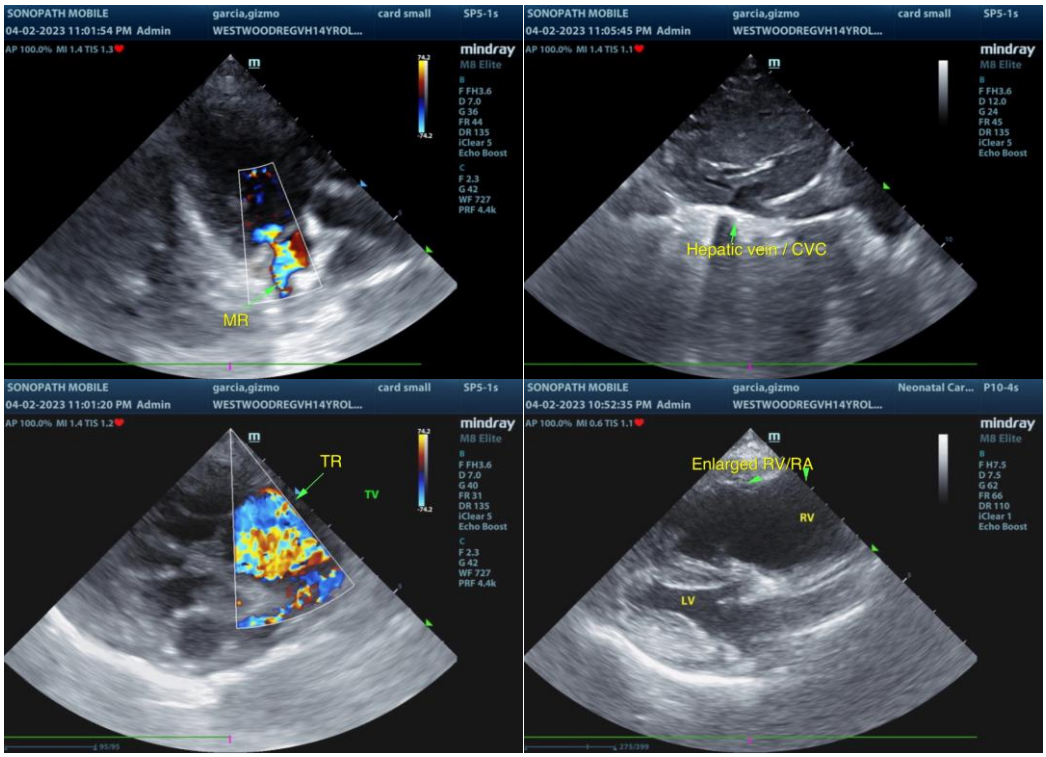
## ULTRASONOGRAPHIC FINDINGS

- Compensated MR, normal LA.
- Enlarged RA/RV.
- Moderate pulmonary hypertension-estimated pulmonary pressure gradient ~ 640 mmHg.
- Non congested liver with non-specific transdiaphragmatic comet tail artefact.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Aside from cases of heart worm disease the underlying etiology for pulmonary hypertension may be unclear yet may be associated with acute or chronic lower airway disease which may be a consideration in this patient. Continued Sildenafil with target dose of 1-3 mg/kg PO BID/TID, ACE inhibitor medication and current Pimobendan with as needed respiratory support and O2 therapy is suggested. This patient is at increased risk for development of right CHF and syncope with mild potential for sudden death.

Exercise restriction is advised. Prognosis is highly variable and serial sonographic monitoring is required for further assessment. Recheck echocardiogram recommended in 6 months sooner if signs consistent with progressive pulmonary hypertension or right heart failure arise.



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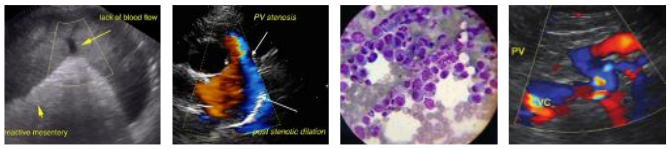

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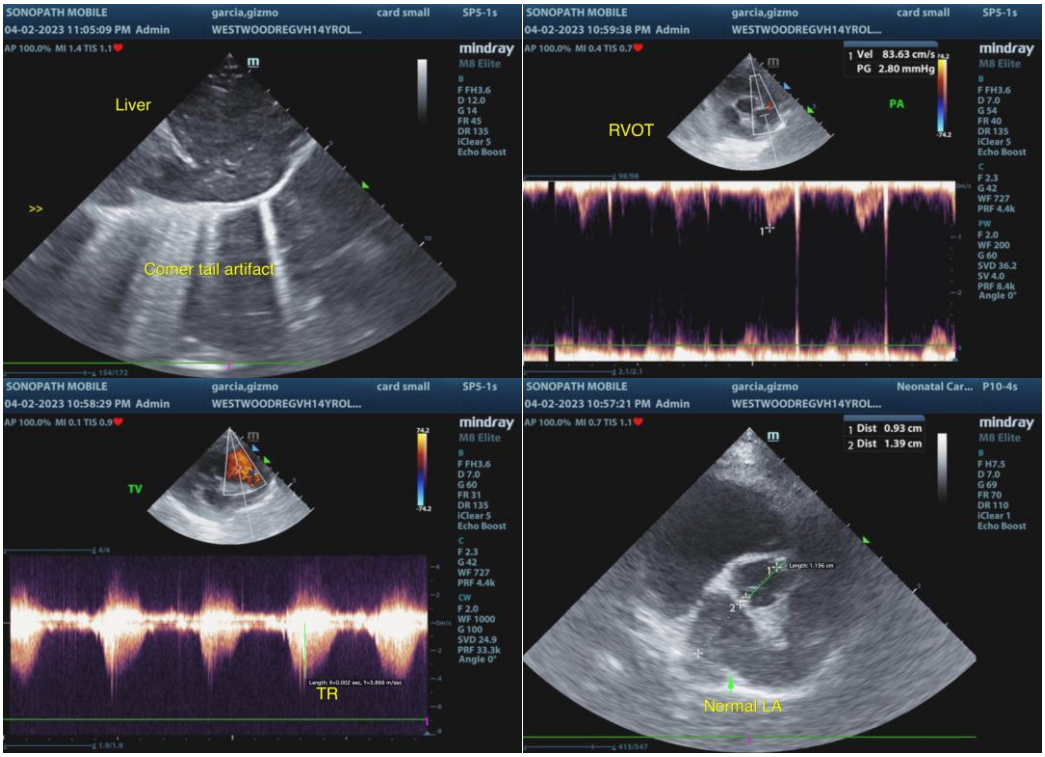


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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)**
mac.daniel@sonopath.com