



**PATIENT PRESENTING CLINICAL SIGNS**

Oreo Nicholais increased lethargy, re check heart, prev B1 valve dz compensated Grade 4/6 murmur Current meds none  
Abnormal PE/Chem/CBC/UA Results: CBC WNL ALT 322 ALP 237 GGT 55 (suspect artifact)

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

| BREED         | CANINE CARDIAC PARAMETERS | MR VMAX (m/s) | TR VMAX (m/s) | LA/AO (Boon method) | LA/AO (Heart Base; Swe) | FS (%)                          | EF (%)                                   | EPSS (cm)                                |
|---------------|---------------------------|---------------|---------------|---------------------|-------------------------|---------------------------------|--|--|
| Chihuahua     |                           |               |               |                     |                         |                                 |  |  |
| SEX           | NORMAL PARAMETER          | 4.5-5.5       | <2.7          | 1.3                 | <1.6                    | 28-40                           | 40-100                                   | <0.6                                     |
| Neutered Male | PATIENT                   |               |               | 1.1                 | 1.3                     | 55                              | 88                                       | NM                                       |
| AGE           | 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) |
| 14 Years      |                           |               |               |                     |                         |                                 |  |  |
| WEIGHT        | NORMAL PARAMETER          | 50-100        | 0.7-1.7       | 0.7-1.6             | BELOW                   | BELOW                           | BELOW                                    | BELOW                                    |
| 4.9 Pounds    | PATIENT                   | 130           | 1.05          | 0.73                |                         |                                 | 1.84                                     |  |

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Jenn

**HOSPITAL NAME**

Rockaway AH

**REFERRING VET**

Dr. Maniar

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**DATE**

3/24/22

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Moderate filling of the left atrium noted on color flow assessment of the mitral valve. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. Slight prolapse of the anterior mitral valve leaflet noted. 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. Minor aortic insufficiency noted, not clinically significant. 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.

**Urinary System**

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.



**PATIENT**

Oreo Nicholais

The **right kidney** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The right kidney measured 3.13 cm.

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The **left kidney** was subnormal in size and measured 2.6 cm with pyelectasia. Blood flow to the kidneys appear to be adequate on power doppler assessment.

**BREED**

Chihuahua

**Adrenal Glands**

The **adrenal glands** were not visualized.

**Spleen**

**SEX**

Neutered Male

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

**AGE**

14 Years

**Liver**

The **liver** revealed diffuse biliary mineralization. Increased portal markings noted. The gallbladder presented a minor amount of sand and debris. Consistent with chronic cholangitis.

**WEIGHT**

4.9 Pounds

**Gastrointestinal**

The **gastric** wall was mildly thickened with a hypoechoic mucosal polyp measuring 5.0 mm.

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**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat.

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Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

**IMAGING PERFORMED BY**

Jenn

**ULTRASONOGRAPHIC FINDINGS**

**HOSPITAL NAME**

Rockaway AH

- Persistent Stage B1 valvular disease
- Moderate degenerative renal changes
- Biliary mineralization, chronic cholangitis pattern

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Dr. Maniar

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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B1: The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflor maintenance or similar protocol if anesthesia is desired. Blood pressure recommended if not already performed and target white coat negative systolic pressure of < 160 mmHg. If higher than this ACE-inhibitor is suggested to reach this level. Recheck echocardiogram is recommended in 6 months, earlier if murmur grade increases or clinical signs initiate.

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Blood pressure measurements indicated if not already performed. I am most concerned about long-term viability of the kidneys. Ursodiol therapy recommended with recheck sonogram in 6 weeks. FNA of the



**PATIENT**

liver could be considered for further definition of inflammatory cell type.

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**HOSPITAL NAME**

Rockway AH

**REFERRING VET**

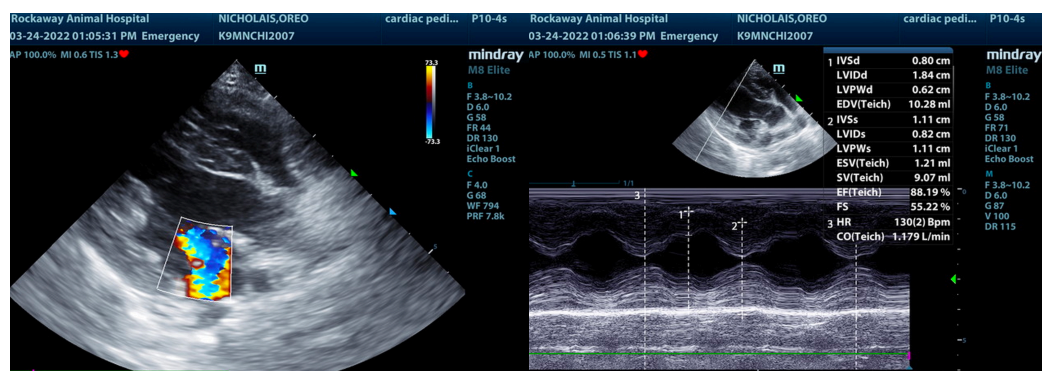
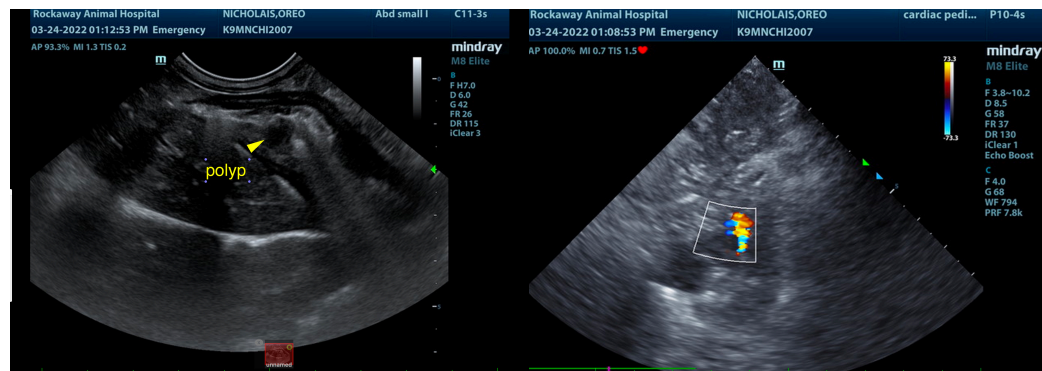
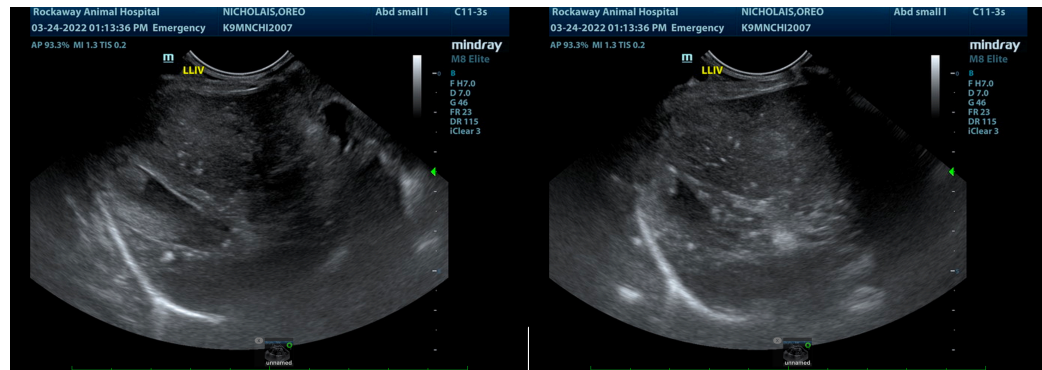
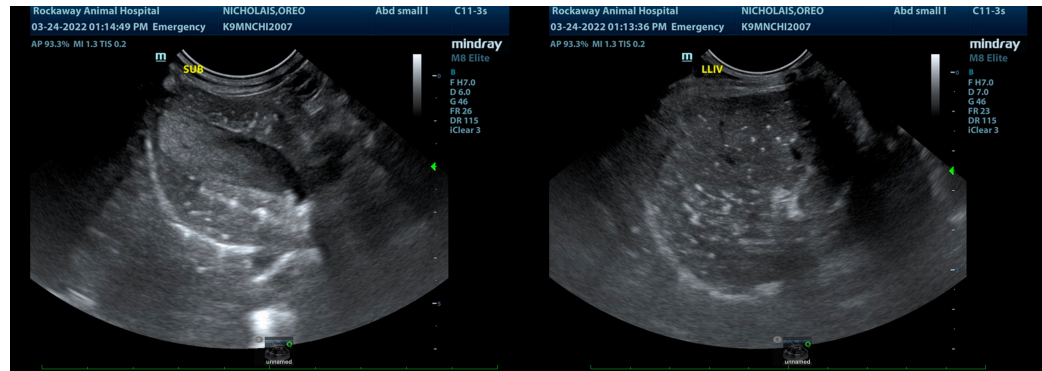
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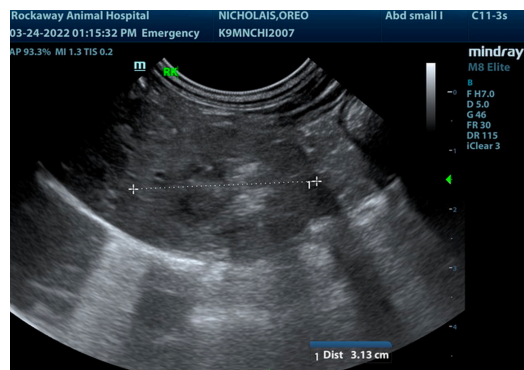
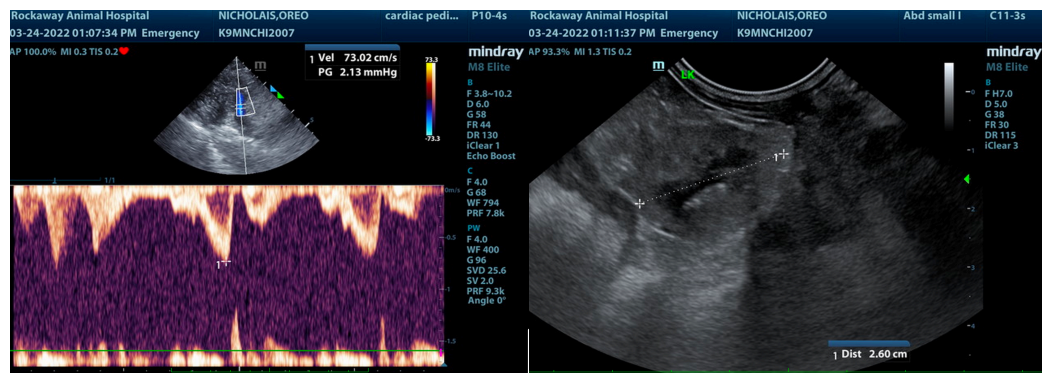
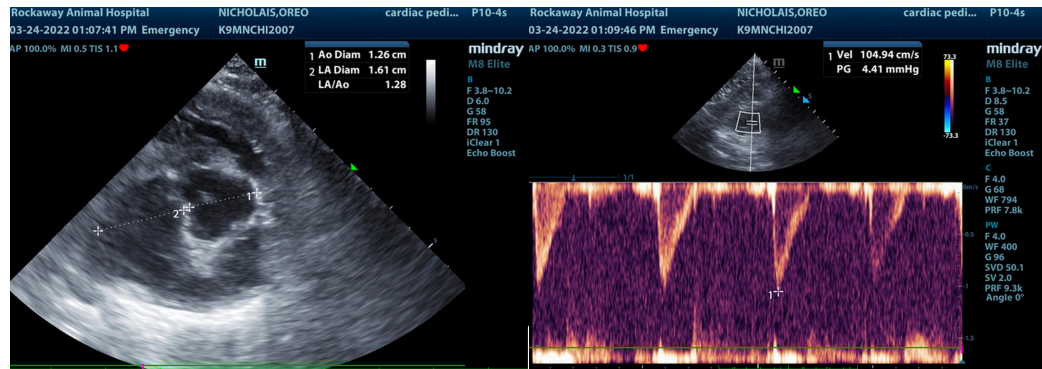
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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](mailto:info@SonoPath.com)