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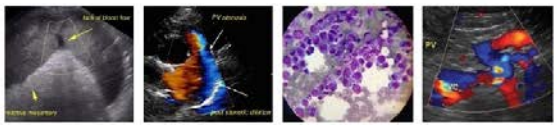


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

**PATIENT**

Heidi Chaiadel

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Spayed Female

**AGE**

13 Years

**WEIGHT**

2.8 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Kelly Reschny

**HOSPITAL NAME**

Chedoke AH

**REFERRING VET**

Dr. Humble

**INVOICE**

33340

**DATE**

12/8/21

## PRESENTING CLINICAL SIGNS

Extensive muscle wasting When abdomen is palpated she inhales sharply then started grinding her teeth; hard to have good feel due to this reaction had 14mLs red, watery fluid removed at after hours clinic, has not been analyzed yet. currently on Gabapentin 20mg/ml 0.5ml BID, Semintra 3kg dose SID Abnormal PE/Chem/CBC/UA Results: UPC 0.2 (0.0-0.2) borderline protineuria sg1015, Ph 5, PRO trace sediment No UTI or hematuria noted, bact 2+ (free catch) CBC- HCT 29.9(30-), RBC low normal 6.66(6.54-) 15p- CREA 309 was 237(-212), UREA 16.2 was 11(-12.9),GLOB 56 (-51) lytes-NSF SDMA 15 was 15(0-14) HR 240 RR 60

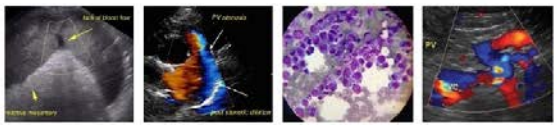
## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

| **FELINE CARDIAC PARAMETERS** | **BODY WEIGHT** (kg) | **HR** (BPM) | **IVSd** (cm) | **LVIDd** (cm) | **LVWd** (cm) | **FS** (%) | **EF** (%) |
|---|---|---|---|---|---|---|---|
| **NORMAL PARAMETER** | ------ | 150-240 | 0.3-0.6 | 1.0-2.1 | 0.25-0.6 | 35-67 | 80-100 |
| **PATIENT** | | 183 | 0.54 | 1.5 | 0.5 | 34.7 | 67.9 |
| **FELINE CARDIAC PARAMETERS** | **LA/AO** (Boon) | **LA/AO HEART BASE** (Sisson) | **LA** 2D 4-chamber long axis AS to FW (Sisson) (cm) | | **LVOT VEL.** (m/s) | **RVOT VEL.** (m/s) | **IVRT** (m/) |
| **NORMAL PARAMETER** | <1.5 | 0.88-1.79 | 0.7-1.7 | | <1.6 | <1.3 | 40-60 |
| **PATIENT** | 2.0 | 2.1 | 2.0 | | <2.0 | <2.0 | NM |

Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

### *Cardiac Presentation*

The echocardiogram in this patient demonstrated significantly enlarged **left atrial** size based on 2 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. Doppler revealed mild, primarily centralized insufficiency. The **left ventricular** septum and free wall revealed overtly normal thicknesses, subnormal contractility and increased left ventricular volume, with some echogenic remodeling of the septum and free wall, consistent with some level of age related change or potential **fibrosis**. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed increased size and normal content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. The **right ventricle** was enlarged in size with normal chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Mild to likely moderate anechoic free pleural fluid was present without overt evidence of cellular component. No evidence of concurrent pericardial free fluid. The cranial mediastinum and pericardial regions were free of masses in the visible window. No evidence of spontaneous contrast or smoke in the left or right atrium.





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## *Urinary System*

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The kidneys measured 3.1 cm each.

## *Adrenal Glands*

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.21 cm in width. The right adrenal gland measured 0.27 cm in width.

## *Spleen*

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The spleen was subnormal in size, potentially owing to volume contraction. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

## *Liver*

The liver presented enlarged in size with symmetrical yet swollen contour. The parenchyma exhibited conserved uniform parenchyma with normal echogenicity isoechoic to the spleen and falciform fat. The hepatic vasculature was dilated in appearance, most notable at the level of the hepatic vein / caudal vena cava junction, without evidence of thrombosis. The gallbladder was non distended in size with mild, echogenic, nonmineralized biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation.

Dilated cranial abdominal caudal vena cava noted at the level of the liver and diaphragm, measuring 0.6 cm in diameter. No overt thrombosis.

## *Gastrointestinal*

The stomach exhibited moderate distention with retained anechoic to echogenic fluid and focally shadowing, echogenic ingesta. No evidence of pyloric outflow obstruction. Gastric body wall measured 0.20 cm.

The small intestine presented intact wall layering with subjective propensity for generalized prominent duodojejunal mucosa along with segmental mildly prominent muscularis layer. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. Jejunum wall measured 0.30 cm. No overt evidence of intestinal masses.

Normal visible colon wall layers were present with apparent formed feces in lumen.

## *Pancreas*

The left limb, right limb, and base of the pancreas presented hypoechoic to heterogeneous echogenicity compared to adjacent omental fat. Mild asymmetrical capsule margination was present with mild variable parenchymal swelling and mild peripancreatic inflammation. No overt evidence of neoplasia.

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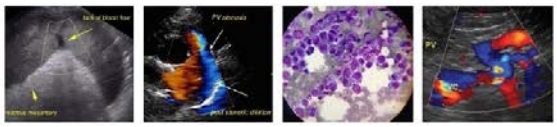

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## *Free Abdomen*

Generalized reactive mesentery and concurrent mild peritoneal free fluid noted.

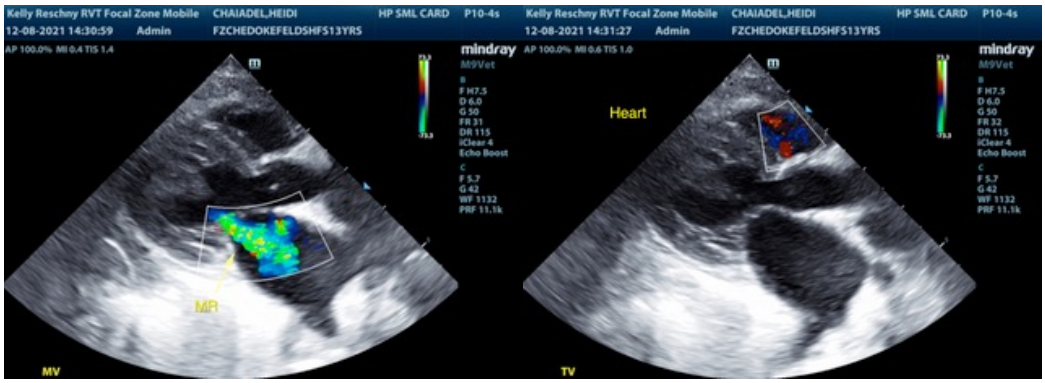
### ULTRASONOGRAPHIC FINDINGS

- Unclassified cardiomyopathy with concurrent systolic dysfunction
- Significant left atrial and right atrial enlargement
- Mitral valve insufficiency
- Congestive hepatopathy
- Prominent to hypoechoic pancreas – pancreatic edema versus mild to chronic active inflammation.
- Hypomotile stomach
- Potential enteropathy
- Moderate chronic renal changes
- Pleural free fluid with mild concurrent peritoneal free fluid

### INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The presentation of the heart in the face of biatrial enlargement is most consistent with unclassified cardiomyopathy, although burnout or end stage HCM can also have this appearance. Regardless of classification, the degree of atrial dilation is consistent with congestive heart failure and potential elevated pulmonary pressures, resulting in congestive hepatopathy and concurrent peritoneal free fluid. Cardiac infiltrative disease cannot be entirely ruled out.

The long-term prognosis is very guarded to poor. However, medical therapy is recommended with assessment of clinical response. Lasix 1-2 mg/kg PO BID, Clopidogrel 18.75 mg PO SID, and off label Pimobendan at 0.3 mg/kg PO BID recommended. Prophylactic thoracocentesis may be indicated if evidence of respiratory distress. Monitoring of renal parameters and blood pressure suggested. Recheck echocardiogram may be considered pending clinical response to therapy. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended.



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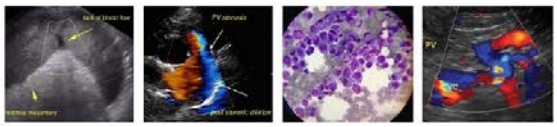

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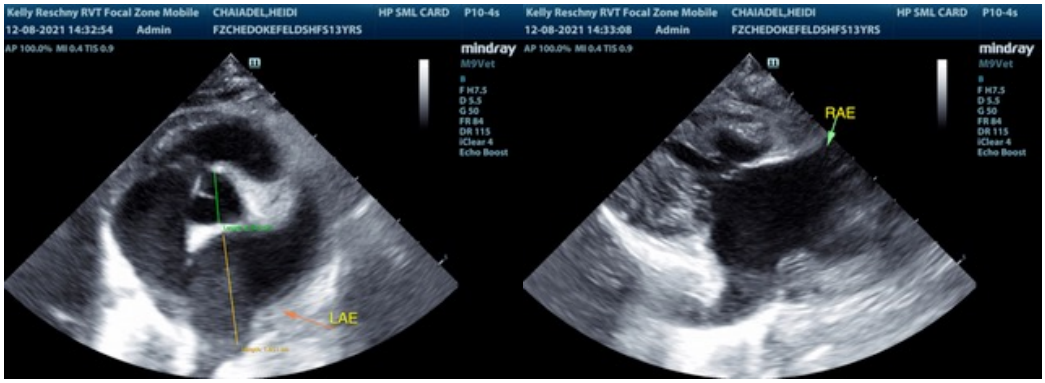


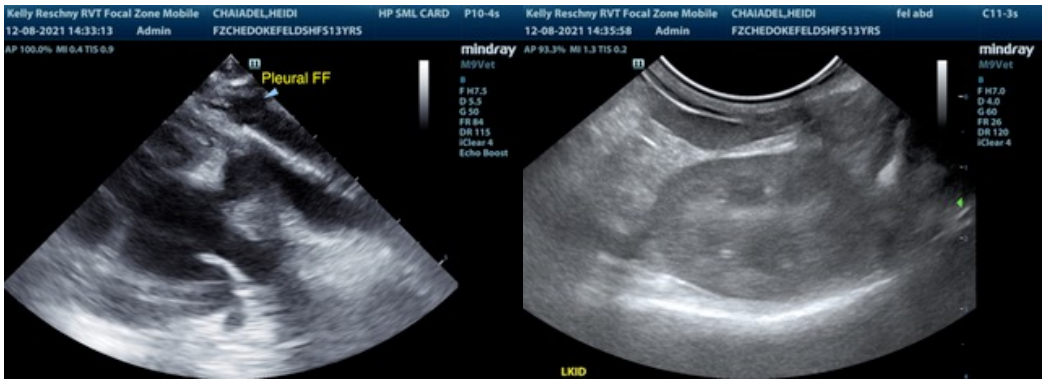


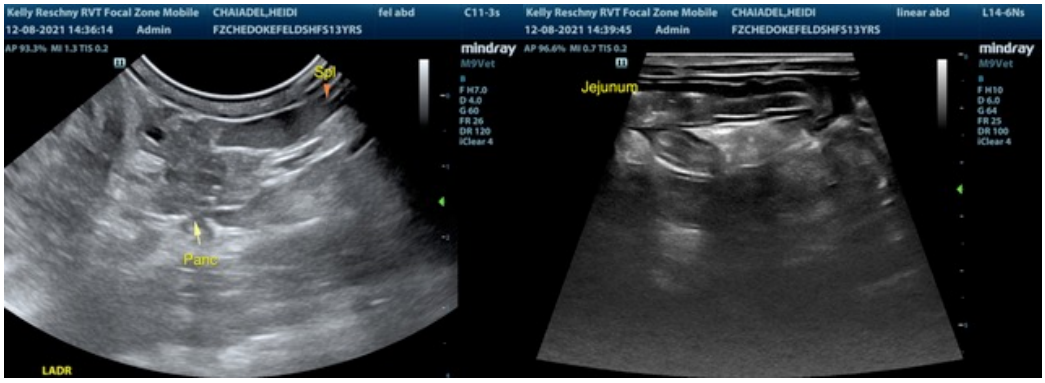


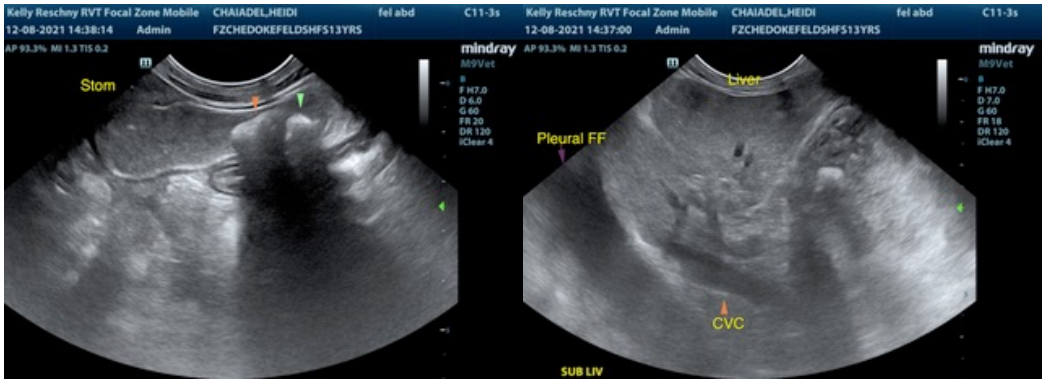

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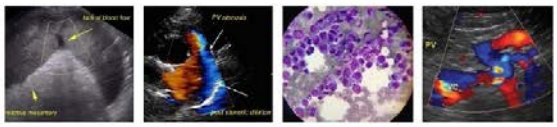

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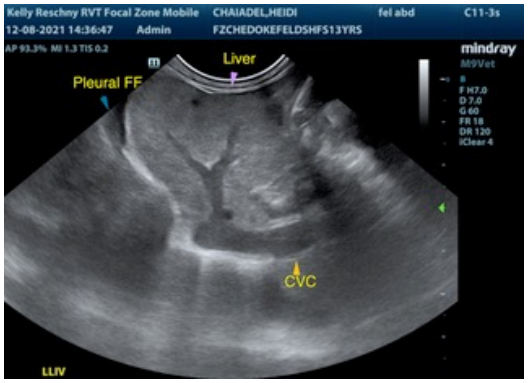


**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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**