



**PATIENT PRESENTING CLINICAL SIGNS**

Diamond Anderson

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Neutered Male

**AGE**

14 Years

**WEIGHT**

8.4 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Jessica Bailes

**HOSPITAL NAME**

All Creatures Great &  
Small Corvallis

**REFERRING VET**

Dr. Jessica Bailes

**INVOICE**

36281

**DATE**

3/17/22

Diagnosed w/ stage 2 CKD 1 year ago, heart murmur and systemic hypertension diagnosed @ that time as well. BP managed w/ amlodipine 2.5mg PO q 24H ( systolic 170bpm) Starting 11/21 patient has progressively lost weight and heart murmur has progressed to a 3/6 systolic murmur. Had one episode of vomiting w/ flecks of fresh blood in it 12/21; resolved for a while then was re - examined 3/22 for continuation of ongoing vomiting in the morning and picky appetite as well as diarrhea ( attributed to too much miralax - normally constipation is a concern) Diarrhea has since resolved

Abnormal PE/Chem/CBC/UA Results: generalized unkempt haircoat, thin BCS w/ moderate dehydration and moderate MCS atrophy dorsum. Progressive weight loss noted 3/6 systolic murmur

Bloodwork done 11/21: CHEM: increased CHOL ( 241), increased triglycerides ( 199), increased amylase ( 2149), increased PSL ( 32) - creat = 1.7 CBC: Neutrophilia ( 12,136), HCT low normal @ 29% TT4: WNL @ 1.5| UA: USG = 1.015; trace proteinuria, IS Thoracic/abdominal rads taken today - significant formed feces in colon; thorax clear.

**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		NM	0.60	1.2	0.60	58.3	92.6
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	NM	1.36	1.3	1.0	0.2	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 normal **left atrial** size and structure with no evidence of "smoke" or thrombi. The cranial and caudal **mitral** valve leaflets appeared subjectively mildly thickened with minor eccentric insufficiency noted on Doppler. The **left ventricle** presented borderline excessive free wall and septal thicknesses compared to normal for this species. The **myocardium** exhibited mild increased echogenicity, which may suggest some degree of age related fibrosis. Mildly prominent to remodeled papillary muscles were present. **Contractility** of the ventricular walls was considered excessive for this patient evidenced by the elevated fractional shortening measurement. The **left ventricular outflow** tract demonstrated turbulent laminar flow. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated linear morphology. The **right ventricle** was of normal size with normal chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The **mediastinum** was free of masses in the visible window.



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**Urinary System**

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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of - cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Moderate non-dependent particulate sediment was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

**BREED**

DSH

Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Moderate loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. The left kidney measured 3.3 cm. The right kidney measured 3.8 cm.

**SEX**

Neutered Male

**Adrenal Glands**

**AGE**

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The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.48 cm. The right adrenal gland measured 0.41 cm.

**WEIGHT**

8.4 Pounds

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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**

**INTERPRETED BY**

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

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. 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.

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**Gastrointestinal**

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The stomach presented intact yet mild prominent wall layering with subjective prominent to echogenic gastric submucosa. Ventral gastric body wall measured 0.33 cm. The stomach was primarily empty with mild luminal gas and minor retained anechoic fluid.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. Jejunum wall measured 0.20 cm.

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

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**Pancreas**

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The left pancreas was normal in size and contour with heterogeneous to mildly hypoechoic parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

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**Free Abdomen**

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No effusion. No evidence of significant omental lymphadenopathy.

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**ULTRASONOGRAPHIC FINDINGS**

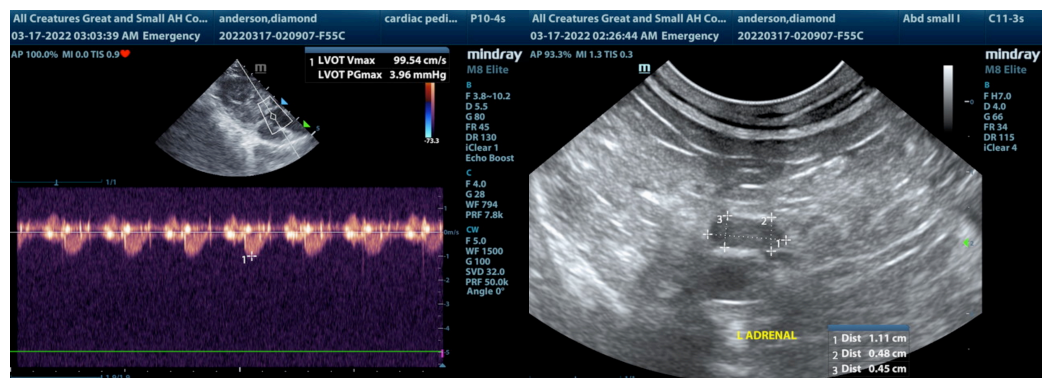
- Borderline LV hypertrophy, normal LV systolic function
- Normal left atrium
- Moderate urinary bladder sediment
- Moderate chronic renal changes
- Gastritis pattern with overtly normal small bowel and colon
- Suspect low-grade chronic to chronic active pancreatitis
- Mild gallbladder debris - non-specific yet likely incidental, potentially owing to fasting or non-clinical cholestasis.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Borderline to emerging HCM may be secondary to previous history of systemic hypertension. However, if currently normotensive, and assuming euthyroid, primary HCM could be possible. The lack of left atrial enlargement and normal overall cardiac function indicates that the relative risk of the murmur and/or borderline hypertrophic LV changes is low. No indication for cardiac medications. Continued conservative monitoring of the murmur and for clinical signs consistent with heart disease is recommended. Sonographic monitoring is required for further prognosis. Recheck echocardiogram suggested in 6 months, sooner if clinical signs arise.

The gastrointestinal signs in this patient may be owing primarily to gastritis with suspected concurrent to low-grade chronic to chronic active pancreatitis. Structurally insignificant concurrent enteropathy cannot be definitively excluded. Given the patient's weight loss, GI panel to include PLI, TLI, cobalamin and folate is warranted. Empirically, continued supportive care for gastritis and low-grade pancreatitis is suggested.

The urinary bladder sediment may suggest cellular / crystalline debris or mucus. Cystocentesis for UA +/- C/S if evidence of inflammatory cells is recommended.





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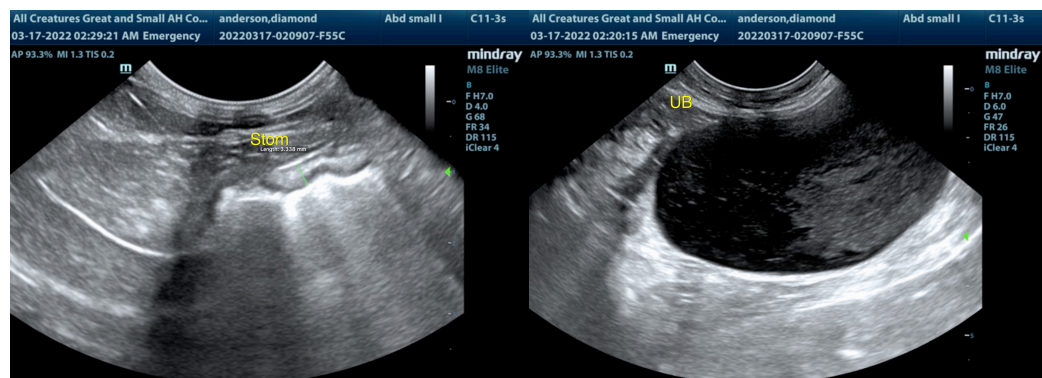
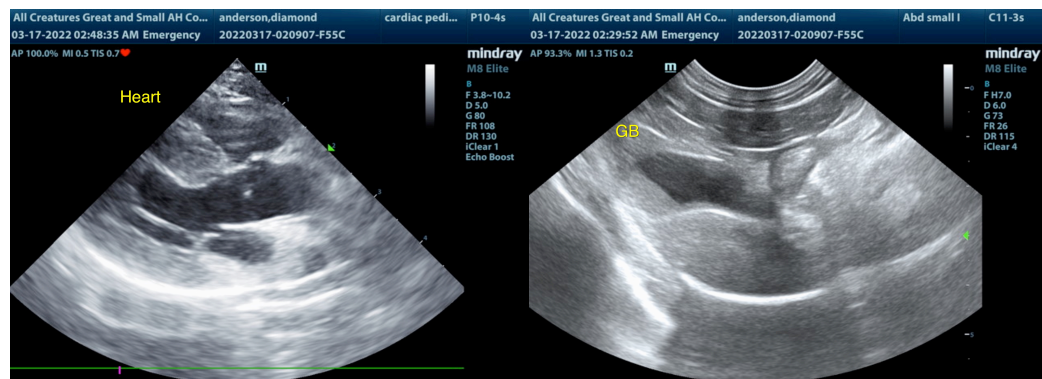
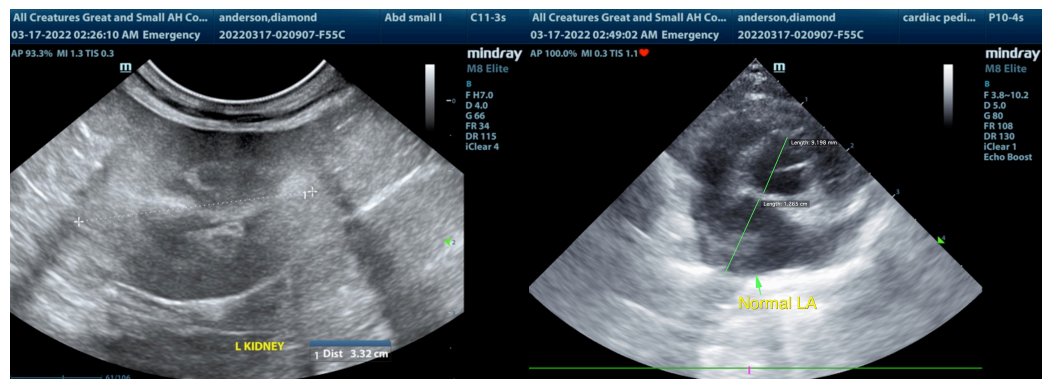
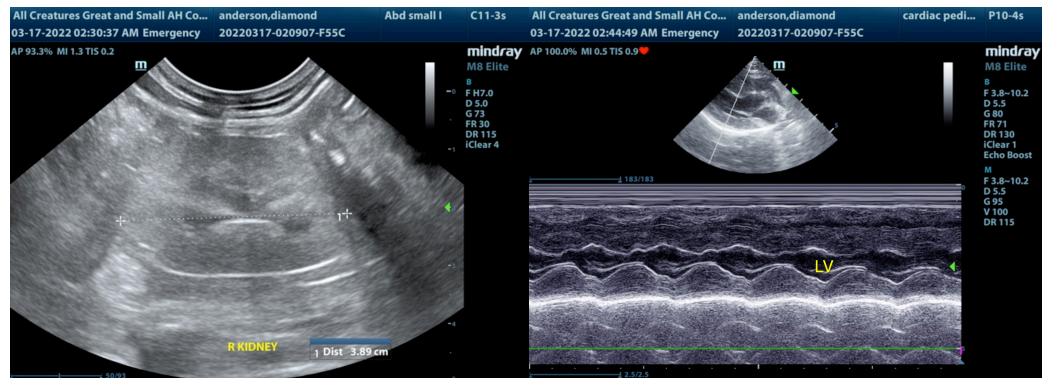
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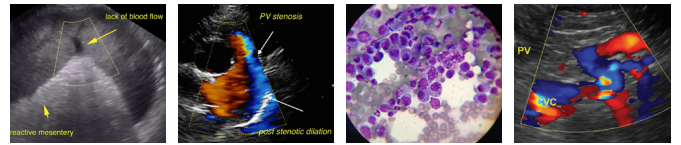
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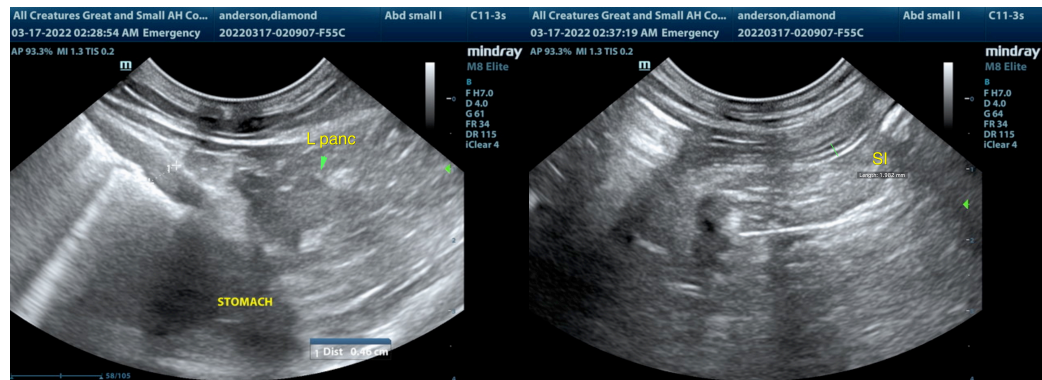
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)**

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