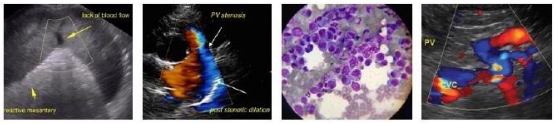


PATIENT
Ella Sebastian

SPECIES
Feline

BREED
Persian

SEX
FS

AGE
10yr

WEIGHT
2.64kg

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

IMAGING PERFORMED BY
Crystal Hill

HOSPITAL NAME
East Credit Veterinary Hospital

REFERRING VET
Webster

INVOICE
14373ag

DATE
07/17/2023

PRESENTING CLINICAL SIGNS

Presented June 30 for lethargy, coughing and decreased appetite. On PE grade 3-4/6 heart murmur noted(was initially diagnosed Fall 2022). Mildly increased dry lung sounds, work up declined at that time. Cerenia given. Short improvement noted but ended up back at emerg on this past weekend with similar symptoms. Has been given Cerenia, Mirtazapine at Emerg on Sunday.

Abnormal PE/Chem/CBC/UA Results: Please see attached bloodwork.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

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		204	0.37	1.1	0.38	52	86.5
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		1.25	1.2			0.77	

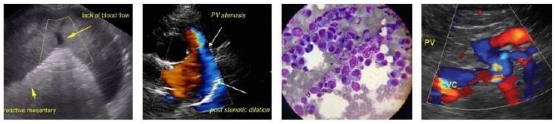
Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size based on 3 separate LA measurements. The cranial and caudal mitral valve leaflets presented normal linear structure and kinetics. No overt MR present on Doppler. The left ventricle presented normal thicknesses with linear contour and was not dilated nor restricted. The myocardium presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. The 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 and angles of the myocardium. The left ventricular outflow tract demonstrated normal laminar flow and subjective structural integrity. Normal measured LVOT velocity was present. 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 and kinetics. No overt TR present on Doppler. 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). Normal measured RVOT velocity was present. No visible pericardial or free pleura fluid was noted or extra cardiac pathology in the visible planes. The cranial mediastinum and pericardial regions were free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with moderate non-



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dependent particulate sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal to borderline subnormal size and minor asymmetrical 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 mild to moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.2 cm in length. The right kidney measured 3.2 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.30 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.46 cm width.

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/Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content with mild to moderate hyperechoic sediment. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material. The gastric body wall measured 0.24 cm in width.

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. The small intestinal wall measured 0.22 cm in width.

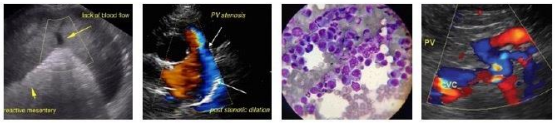
Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The left 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 reactivity / inflammation. No overt evidence of neoplasia.

Free Abdomen

Intermittent minor mildly prominent/reactive mesenteric nodes were present. The lymph nodes were essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5).



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No omental masses or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Normal echocardiogram.
- Urinary bladder sediment.
- Mild to moderate chronic renal changes.
- Sonographically unremarkable GI tract.
- Mildly prominent hypoechoic left pancreas-suggestive of mild potentially active/chronic active pancreatitis.
- Gallbladder sediment.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of clinical issues such as HCM criteria, left or right heart chamber enlargement, LV systolic dysfunction, clinical pulmonary hypertension or overt valvular insufficiencies was present. If no volume changes such as dehydration or anemia are present, a benign physiologic flow murmur or small non-visualized flow abnormality is suspected. Regardless, the lack of left or right heart chamber enlargement indicate that the hemodynamic effects of the murmur are minimal. No indication for cardiac medications. Continued conservative monitoring of the murmur is recommended. Recheck echocardiogram recommended in 6-12 months, sooner if murmur intensity increases or clinical signs suggestive of heart disease arise.

Assessment for evidence of cranial abdominal/subxiphoid discomfort on palpation which may allude to low grade pancreatitis is recommended. A spec fPL is warranted.

The gallbladder sediment is of unclear clinical significance given the lack of reported hepatic enzyme elevations yet may be associated hepatobiliary inflammation given the short half-life of hepatic enzymes in cats. Continued monitoring of hepatic enzymes would be ideal.

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

No evidence of intra-abdominal neoplastic criteria. As needed GI support and empirical therapy for pancreatitis may prove beneficial.

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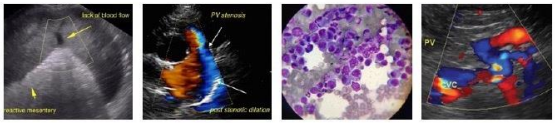

THE FOCAL ZONE
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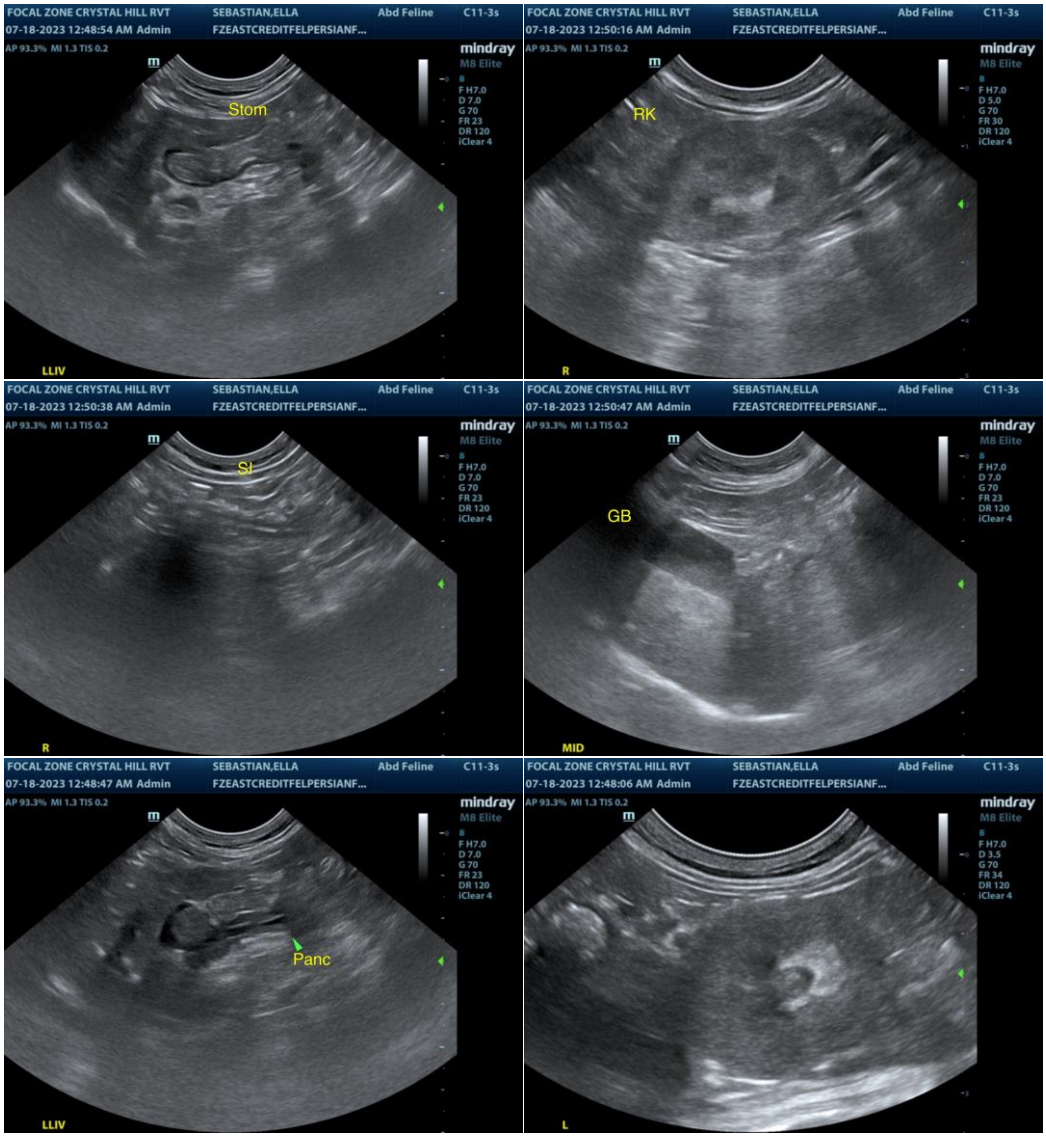

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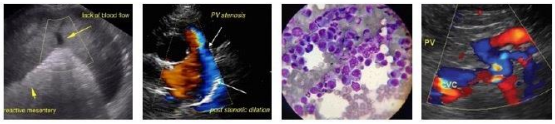

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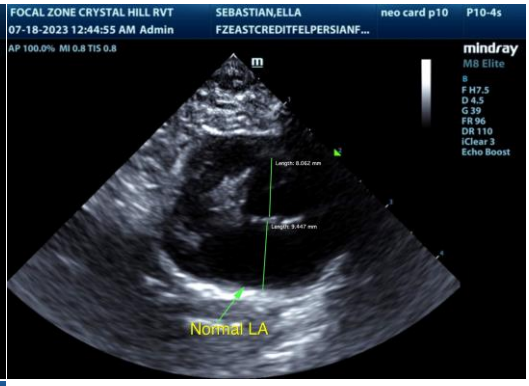

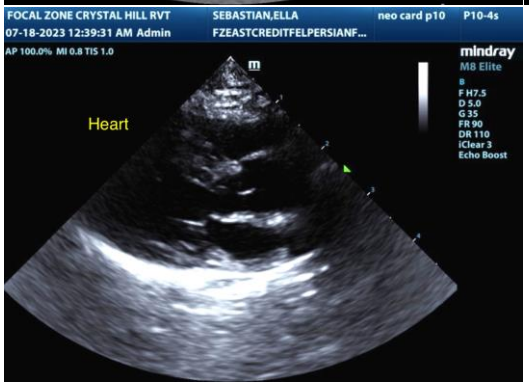

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

info@SonoPath.com