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Clinical Sonography & Telecytology
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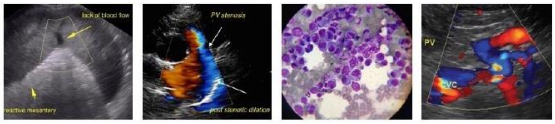


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT

Boots Brellisford

SPECIES

Feline

BREED

DSH

SEX

MN

AGE

14.5 years

WEIGHT

4.6 kg

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Beatties PH Stoney Creek

REFERRING VET

Dr. Mellish

INVOICE

16613

DATE

4/14/23

PRESENTING CLINICAL SIGNS

Grade 2/6 heart murmur noted. Suspect serious abdominal pathology - mass/organ disfunction/ peritonitis, ascites? Mod diffuse abdominal discomfort with increased soft tissue mass suspected cranially. Allergic dermatitis with alopecia, scanning, pale sclera, equivocal icteric.

Buprenorphine, Ampicillin, Cerenia, Metronidazole, Amitryptillyine, Gabapentin, IVF.

Abnormal PE/Chem/CBC/UA Results:: FpLi positive.

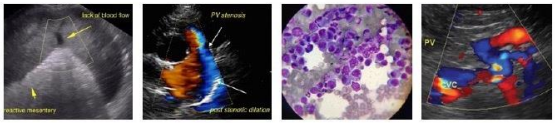
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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		162	0.55	1.79	0.52	45	80
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	1.5	1.45	1.4		1.2	1.95	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 enlarged **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. Minor eccentric MR was present. The **left ventricular** septum and free wall revealed normal thicknesses, reduced contractility and mildly reduced left ventricular volume with subjective reduced diastolic filling. Normal measured LVOT velocity was present. Some echogenic remodeling of the septum and free wall was present. This is most consistent with some level of **myocardial 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 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). Borderline increased measured RVOT velocity was present. No visible **pericardial** or free pleura fluid was noted or extra cardiac pathology



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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 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild nondependent 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. The urinary bladder sediment may suggest cellular / crystalline debris or mucus. Cystocentesis for UA +/- C/S if evidence of inflammatory cells is recommended.

The area of the aortic trifurcation was free of pathology.

Normal renal size with asymmetrical margination were 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. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. Minor right kidney pyelectasia was noted, which may be owing to pelvic scarring, possible previous mineral passage, or IV fluid therapy. Nonobstructive, medullary renoliths was noted in the left kidney measuring 0.55 cm diameter. The left kidney measured 3.5 cm in length. The right kidney measured 4.2 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.36 cm width. No overt pathology was noted in the area of the right adrenal gland.

Spleen

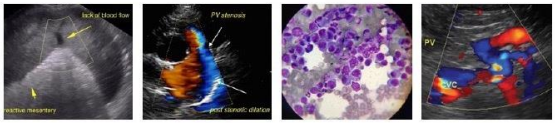
The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute 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 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 containing primarily anechoic content. The proximal common bile duct was mildly dilated and tortuous without overt post hepatic obstruction. The dilated common bile duct was not visualized extending caudally to the level of the duodenal papilla.

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.



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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.

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

Pancreas

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

Free Abdomen

A scant pocket of free fluid was noted adjacent to caudal abdominal intestinal loop. No evidence of significant peritoneal effusion or omental masses was noted. No omental lymphadenopathy was present. Generalized uniform normoechoic mesentery was present.

ULTRASONOGRAPHIC FINDINGS

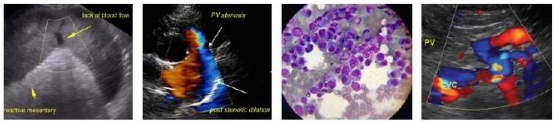
- Bilateral chronic interstitial nephrosis renal pattern with minor right kidney pyelectasia
- Mild urinary bladder sediment
- Heterogeneous subtly hypoechoic left pancreatic limb - patient / age-related variant, low-grade chronic to chronic active pancreatitis possible
- Minor hepatic parenchymal remodeling
- Sonographically unremarkable gallbladder, minor nonobstructive proximal common bile duct dilation - no evidence of post hepatic obstructive criteria
- Sonographically unremarkable gastrointestinal tract
- Solitary, small pocket of scant peri intestinal free fluid
- LV myocardial remodeling with normal / adequate LV function
- Normal left atrium
- Mild eccentric MR
- Borderline increased RV outflow velocity

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Sonographically, the appearance of the pancreas was not overtly consistent with significant or active pancreatitis.

Overall, normal to adequate cardiac function with the only source of potential murmur likely secondary to borderline increased RV outflow velocity, which is essentially a flow murmur. No indication for cardiac medications.

No overt or definitive evidence of intraabdominal neoplastic criteria without visualized intrabdominal mass. Potential for emerging acute hepatopathy is possible given the short half-life of hepatic



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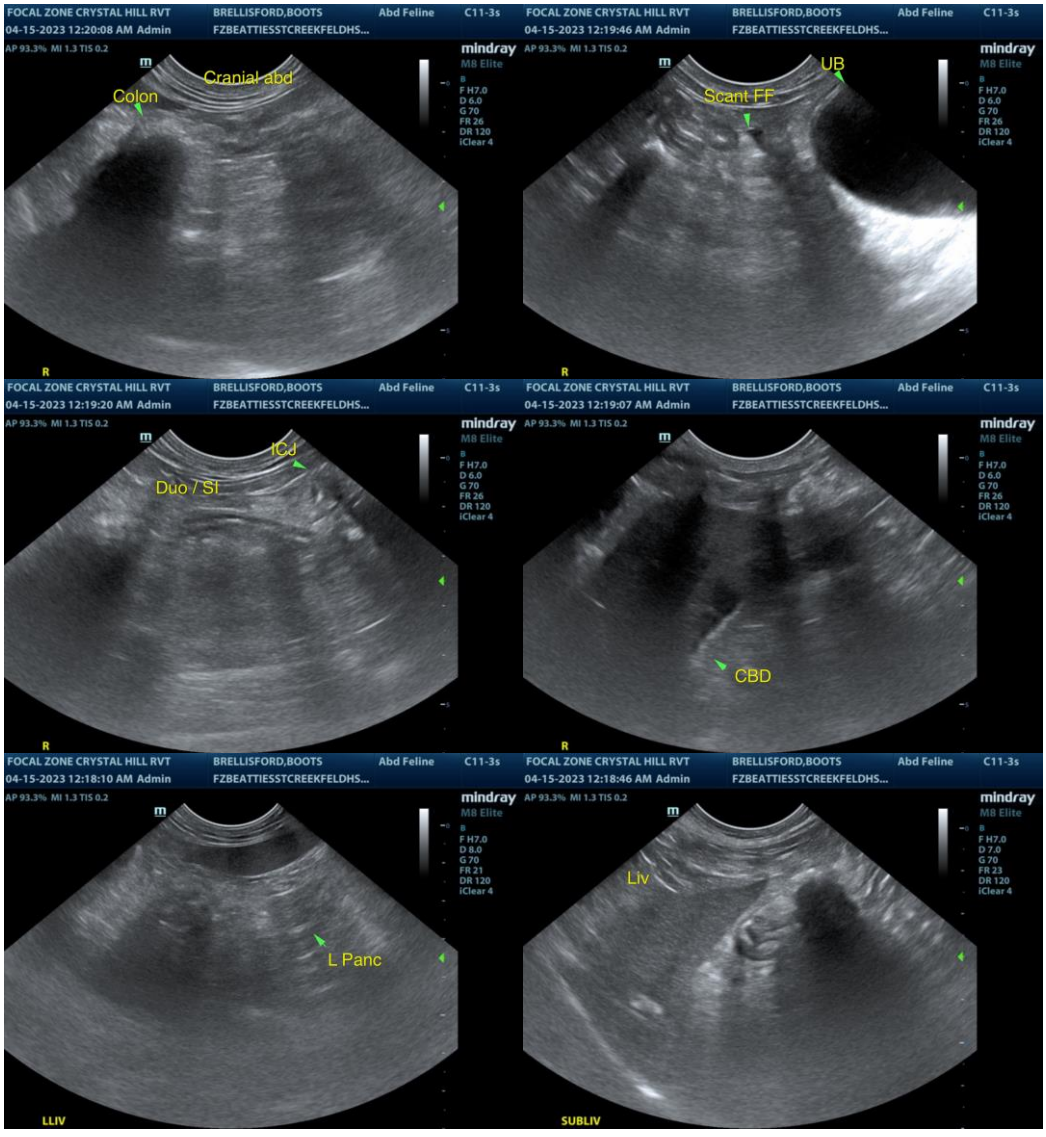
enzymes in cats in conjunction with equivocal icterus. Correlation with CBC/Chemistry panel and Urinalysis, if not done, is suggested.

Empirical therapy for pancreatitis, if clinically indicated, would be reasonable. Abdominal sonographic reassessment is recommended if evidence of progressive clinical signs, icterus, or abdominal effusion.



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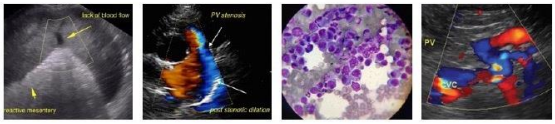

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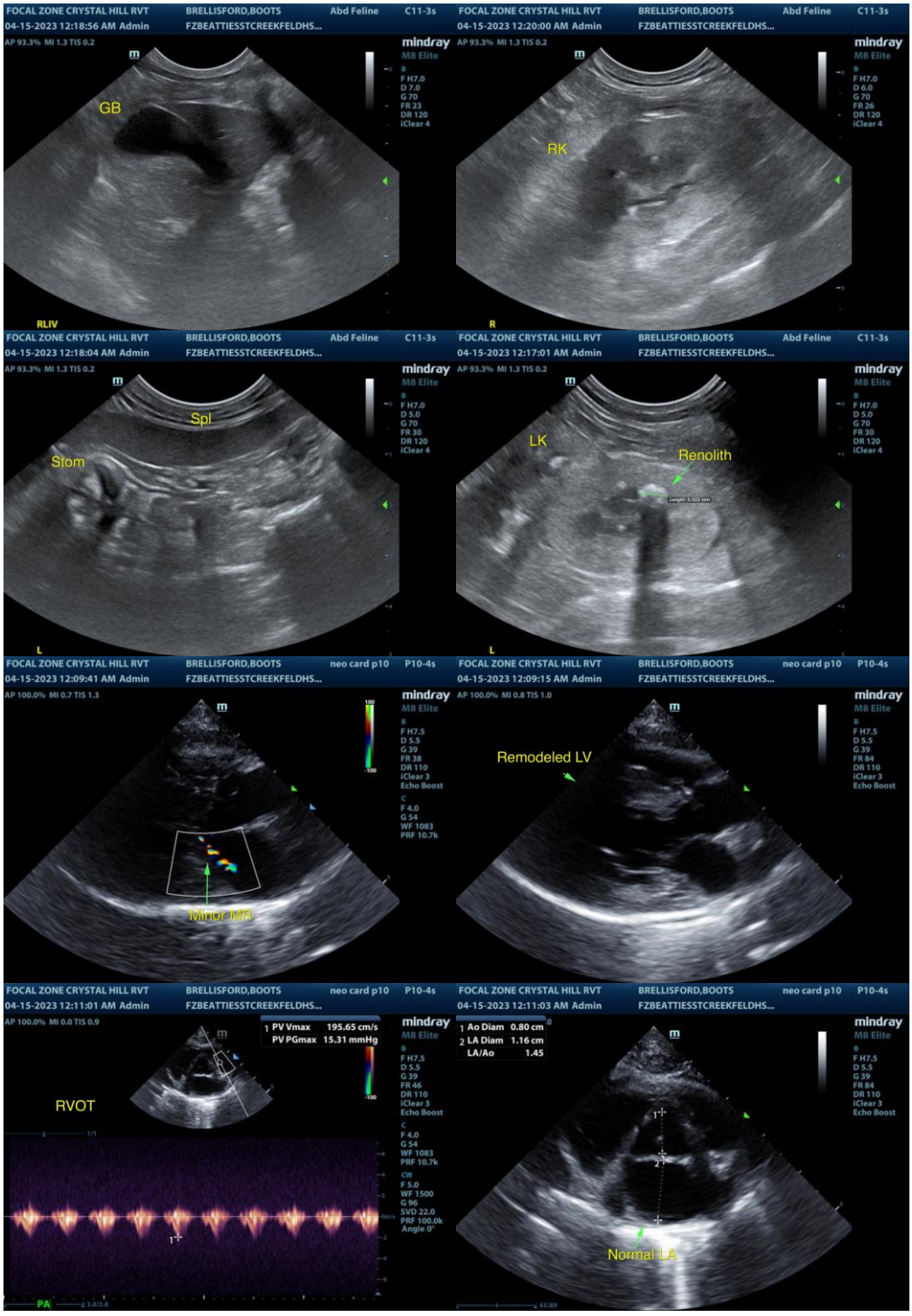
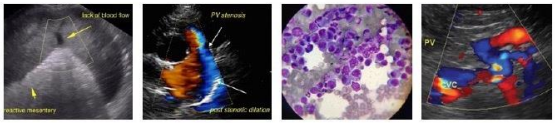


The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



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can be of any further assistance please contact me.

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