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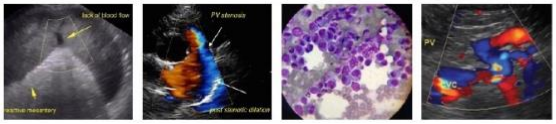

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT

Remy Brown

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

8.5 Years

WEIGHT

6.13 kg

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Hamilton Regional EC

REFERRING VET

Dr. Bourque

INVOICE

37302

DATE

4/29/22

PRESENTING CLINICAL SIGNS

Doesn't love in clinic handling. Off and on vomiting. Had an ultrasound about 2 years ago elsewhere but results not avail. Not eating since Wednesday. History of pancreatitis and stage 2 renal disease. Decreased drinking. Has not vomited since Monday. T 38.8, HR 200, Has dental resorptive lesion and will need a GA to extract in future. Mirtazipine, Cerenia, Buprenorphine and is on Revolution
Abnormal PE/Chem/CBC/UA Results: FELV/FIV negative.

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	0.35	1.62	0.34	21	46
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	1.0	1.3	1.2		0.62	--	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 based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics.. 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. **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. 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. 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 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, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. Mild amount of bladder sand noted, non-shadowing. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction.

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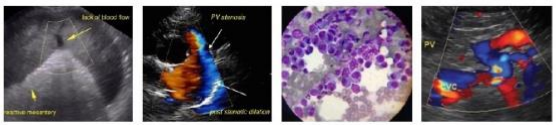

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The **kidneys** presented a relatively uniform cortical hyperechogenicity when compared to the renal medulla, spleen and liver. No overt masses were noted. Corticomedullary definition was nebulous and the ratio favored the cortex slightly. The ureters were not visible and assumed to be normal. These changes are most consistent with chronic interstitial nephritis yet infiltrative disease could not be entirely ruled out without biopsy though neoplasia is not suspected. Hyperechoic medullary rim sign noted in both kidneys. The left kidney measured 3.91 cm. The right kidney measured 3.56 cm with irregular contour. Blood flow to the kidneys was subnormal. Microinfarcts were present.

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 0.25 cm. The left adrenal gland measured 0.31 cm.

Spleen

The **spleen** was upper limits of normal at 1.0 cm. Slight scalloping contour noted.

Liver

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

Gastrointestinal

Some soft shadowing material was noted in the **stomach**, measuring approximately 2.0 cm, hairball type density. A portion of the small intestine was thickened with reactive surrounding mesentery. The small intestine appeared to be jejunum and extended for at least 5-6 cm.

Pancreas

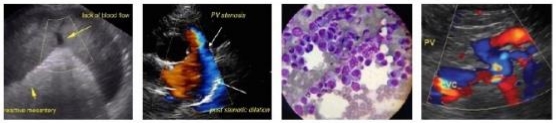
The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC FINDINGS

- Normal echocardiogram, no evident pathology
- Regional enteritis pattern, mild potential for emerging neoplasia
- Hairball density in the stomach

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of cardiac disease contributing to the clinical status. Given the interstitial nephrosis pattern and the intestinal thickening, dry form FIP is a potential in this case. Emerging round cell neoplasia also possible. Regional peritonitis appeared to be associated with the portion of intestinal thickening. Exploratory surgery with resection and anastomosis optimally guided by intraoperative ultrasound would be warranted in order to delineated the portion of affected small intestine. Evacuation of the stomach also indicated. Renal biopsy would be indicated as well. Bladder lavage could be considered. However, there is minimal acoustic shadowing with the debris, and therefore cystotomy is likely not necessary. Guarded prognosis depending upon underlying histopathology.



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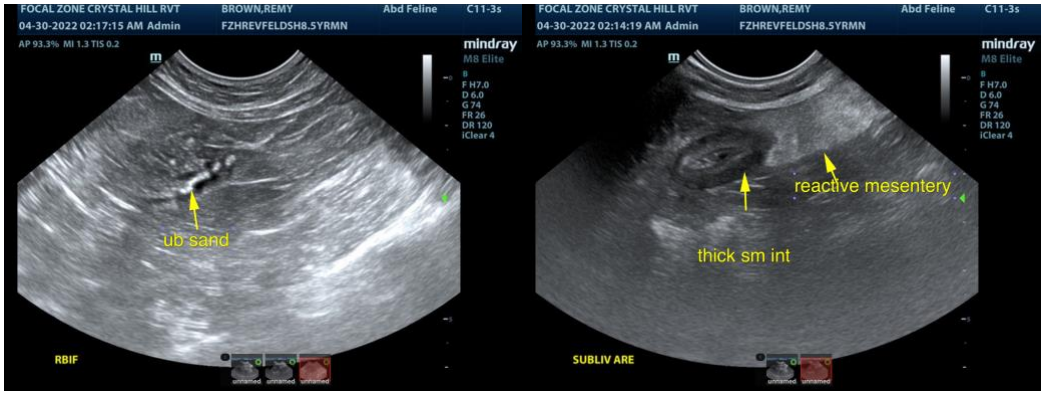

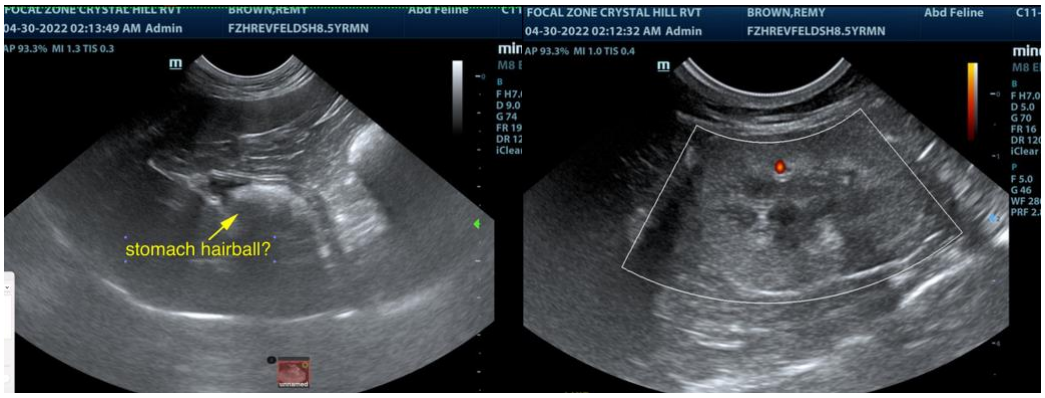

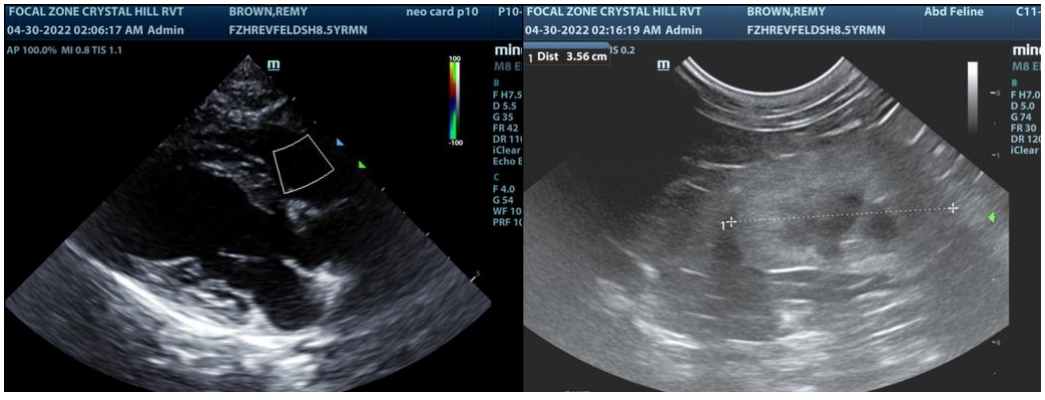

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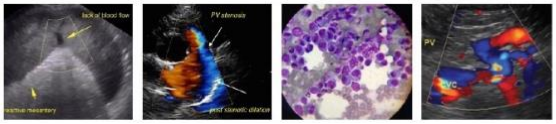

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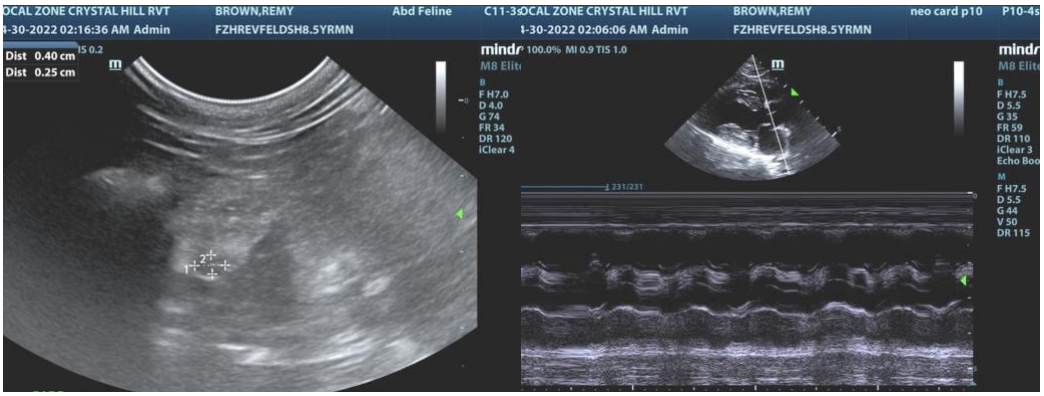

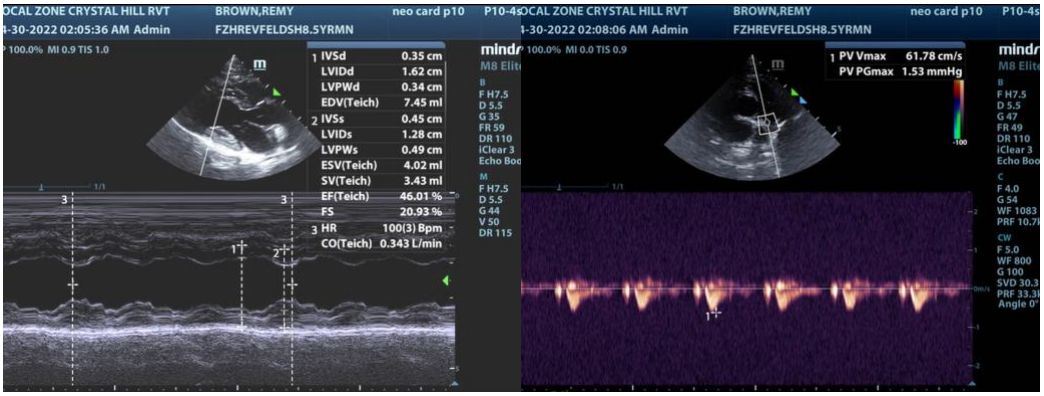

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

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