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Clinical Sonography & Telecytology
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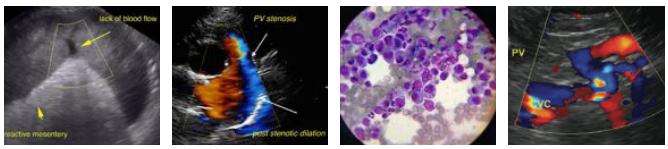


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Butters Essig

SPECIES
Feline

BREED
Ragdoll Mix

SEX
Spayed female

AGE
14 years

WEIGHT
11 lbs

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Petrone

HOSPITAL NAME
Long Branch AH

REFERRING VET
Dr. Petrone

INVOICE
42481

DATE
1/3/23

PRESENTING CLINICAL SIGNS

History: Presented on 12/26 for tenesmus and vomiting, history of constipation, gallop heart murmur
Abnormal PE/Chem/CBC/UA Results: 12/26 HCT: 17%, Leukocytosis with neutrophilia and monocytosis. Radiographs at ER on 1/1/23 showed cardiomegaly and pleural effusion, patient was started on lasix and clinically improved.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Corticomedullary mineralization was noted. The right kidney measured 4.7 cm. The left kidney measured 4.0 cm.

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.

Spleen

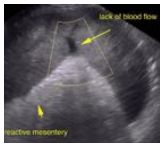
The **spleen** was mildly enlarged with uniform, but subtly micronodular parenchyma, and undulating capsular contour. This is consistent with reactive spleen owing to immune stimulus or early infiltrative disease such as mast cell disease or lymphoma. 25-gauge FNA would be ideal if weight loss is an issue to differentiate early round cell neoplasia versus splenitis or reactive spleen all of which can present in this manner. The spleen measured 1.2 cm in width.

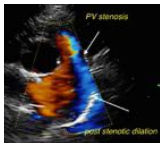
Liver

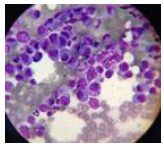
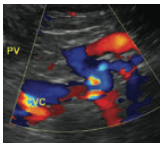
The **liver** was mildly swollen with slight coarse architecture with mildly increased portal markings. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident.

Gastrointestinal

The **gastrointestinal** presentation revealed mild uniform prominence of the gastric mucosa as well as areas of "ropey" small intestinal wall with slight disruption of the normal 1:3 muscularis/mucosal ratio.





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The intestinal submucosa was slightly irregular, thickened and hyperechoic suggestive of low grade, chronic disease. No concerning lymphadenopathy was visible. No evidence of obstruction was present. Chronic inflammatory bowel disease is likely with a low possibility of an early neoplastic event such as lymphoma. Full thickness tissue biopsies via open laparotomy, ideally guided by intraoperative ultrasound in order to obtain the most representative mural sample, would be necessary to rule out this possibility.

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 EXAMINATION OF THE HEART

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). Trace **pericardial** effusion was noted in this patient. This may be indicative of occult neoplasia, vasculitis or wasting. The effusion is non-cardiogenic. The cranial **mediastinum and pericardial regions** were free of masses in the visible window. Come tail lung pattern was noted. This is indicative of alveolar disease or focal atelectasis.

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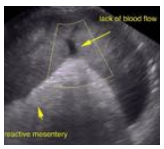
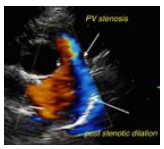
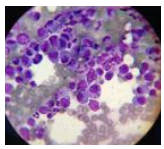
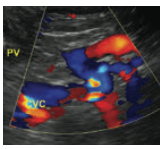

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FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		NM	0.52	1.6	0.6	50	

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	1.3	1.6 max			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

ULTRASONOGRAPHIC FINDINGS

Minor intestinal thickening.

Splenic enlargement.

Minor, heterogenous liver.

Age related renal changes.

Normal echocardiogram.

Pericardial effusion. Non-cardiogenic. Possible occult neoplasia, vasculitis or wasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Cytology and assessment for round cell neoplasia versus reactive spleen and benign hepatopathy is recommended. I recommend management based on splenic and hepatic cytology results.

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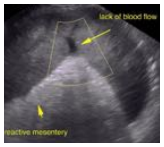
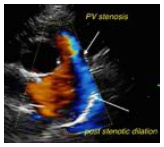
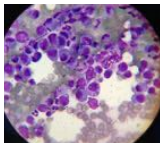
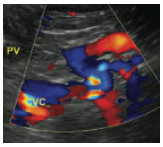

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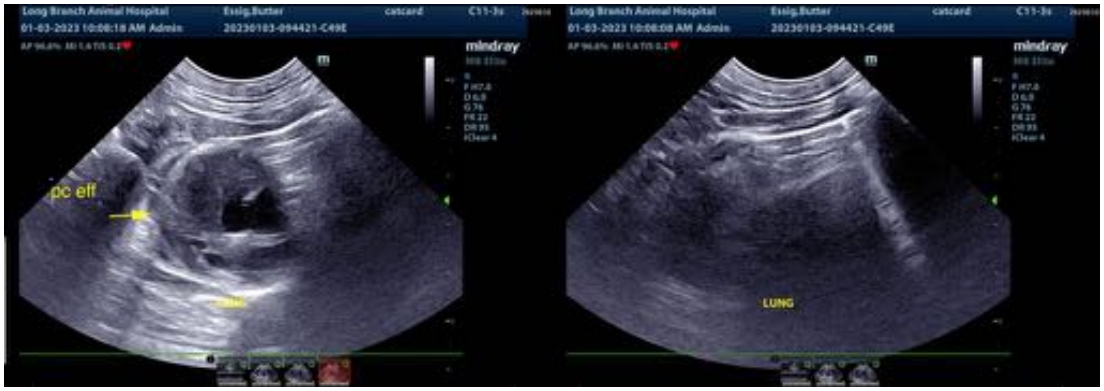

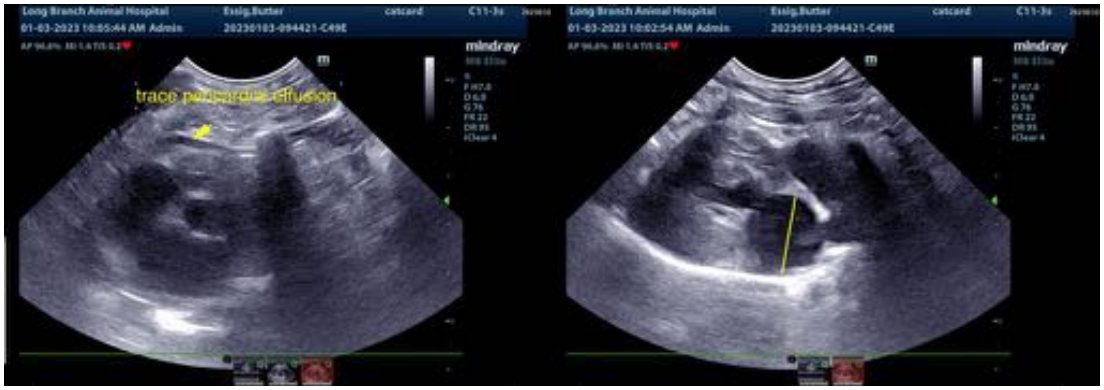

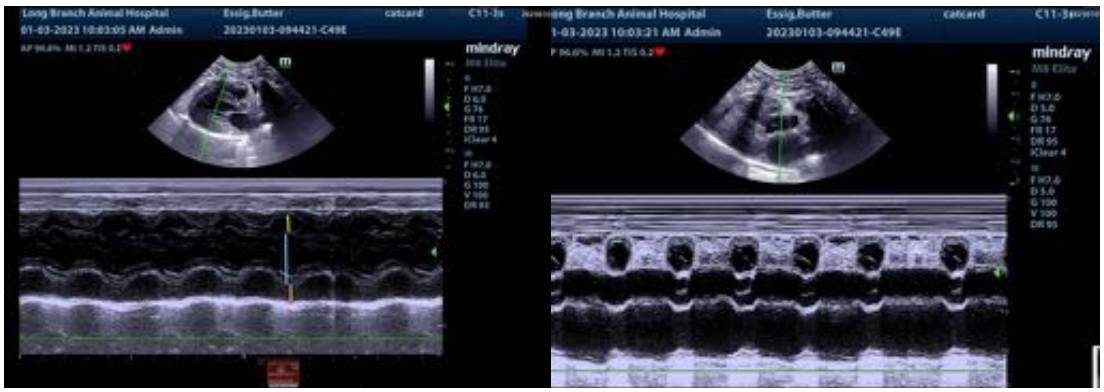

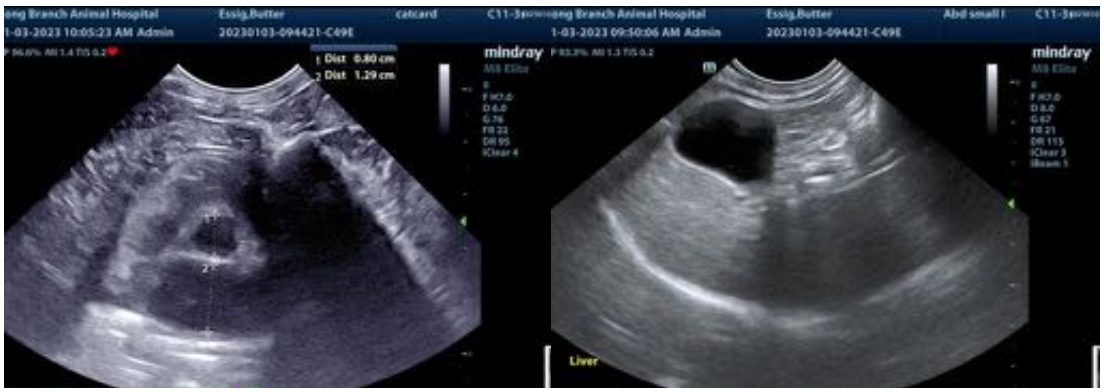

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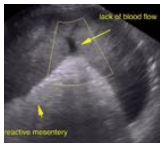
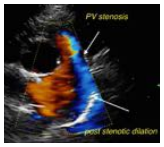
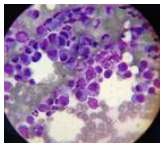
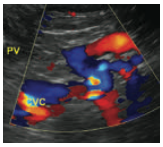

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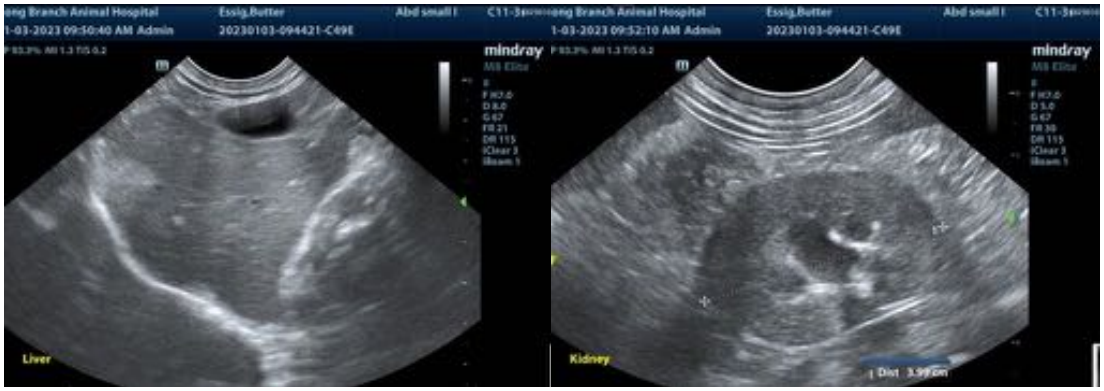

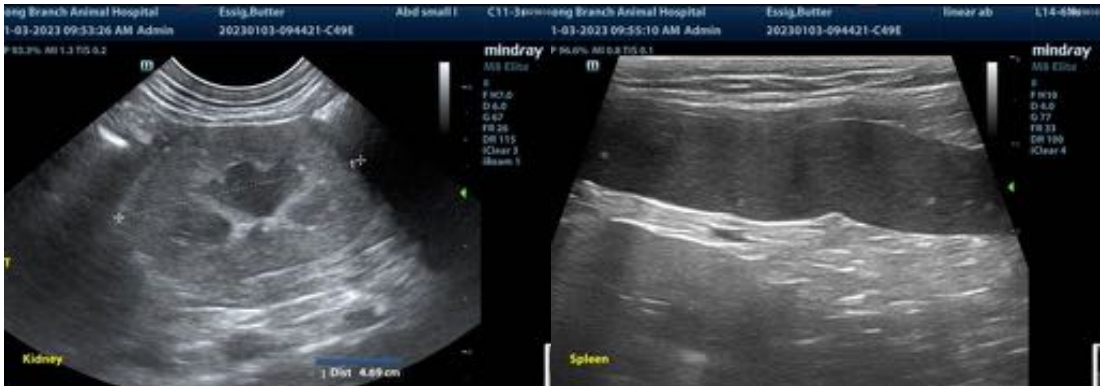

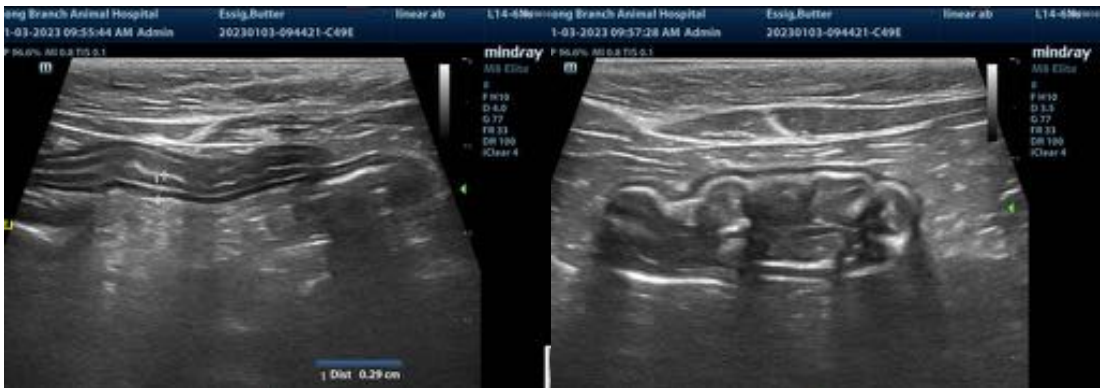

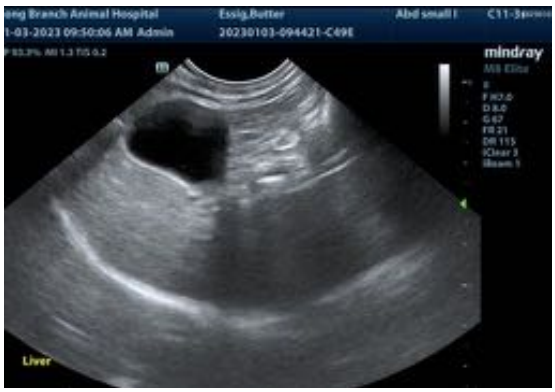

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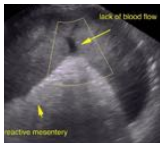

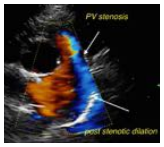

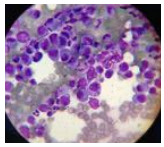
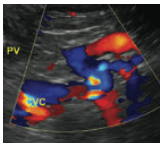

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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