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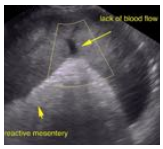
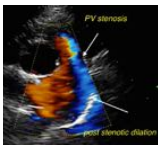
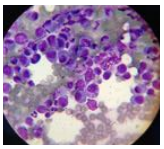
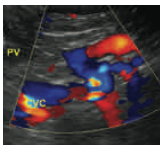

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1-800-838-4268 info@sonopath.com

PATIENT
Cooper Duhr

SPECIES
Feline

BREED
Maine Coon

SEX
Neutered male

AGE
16 years

WEIGHT

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Jessica Miller, RDMS

HOSPITAL NAME
Ramapo Valley

REFERRING VET
Dr. Duhr

INVOICE
91859

DATE
9/21/21

PRESENTING CLINICAL SIGNS

History: Weight lost (lost 2 pounds in 1 year). Vomited. 9/19/21 Anorexia - dyspnea - chronic decreased albumin over past 4 years. X-rays today and 9/20/21 show pulmonary edema on all 3 views. Albumin 1.9 (was 2.2 on 10/2020) Globulin 9.9 (was 9.5 10/2020)

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The **left atrial** size was excessive. **Mitral** valve insufficiency was noted with moderate filling of the left atrium. 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** appeared adequate. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrial** enlargement was also present with **tricuspid** insufficiency. 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. The cranial **mediastinum and pericardial regions** were free of masses in the visible window. Pleural effusion and pulmonary edema was also noted.

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	0.5	2.0	0.5	30	

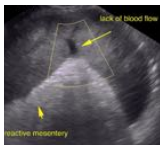
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)	LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60
PATIENT	1.94	1.9		1.06	1.13	NM

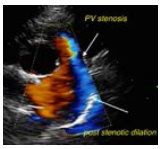
Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

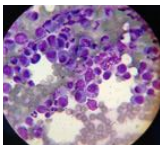
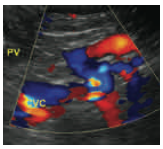
ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

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.





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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 this age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The kidneys both revealed infarcts. The right kidney measured 4.37 cm. The left kidney measured 3.83 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. The right adrenal gland measured 0.39 cm. The left adrenal gland measured 0.59 cm.

Spleen

The **spleen** in this patient was mildly enlarged with uniform parenchyma and was folded upon itself. This is a positional variant and is not pathological. There was no evidence of significant disease.

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

The **gastrointestinal** presentation revealed mild uniform prominence of the gastric mucosa as well as areas of "ropey" small intestinal wall. The muscularis layer was hypertrophied inverting the normal ratio (1:3). The intestinal submucosa was slightly irregular, thickened and hyperechoic suggestive of low grade, chronic inflammation. No evidence of obstruction was present. Chronic inflammatory bowel disease is probable with a low possibility of an early neoplastic event such as lymphoma or, less likely, dry form FIP can at times be found on biopsy of these presentations. 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 more significant disease than IBD.

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.

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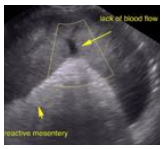
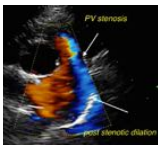
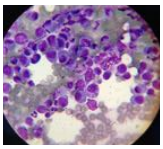
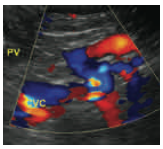

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ULTRASONOGRAPHIC FINDINGS

Diffuse intestinal thickening with hypertrophied muscularis.

Microinfarcts in the kidneys.

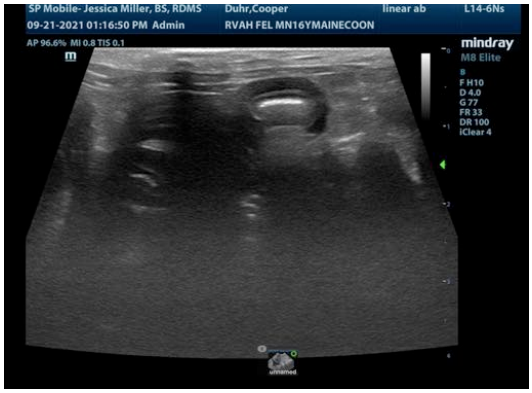
Geriatric abdomen.

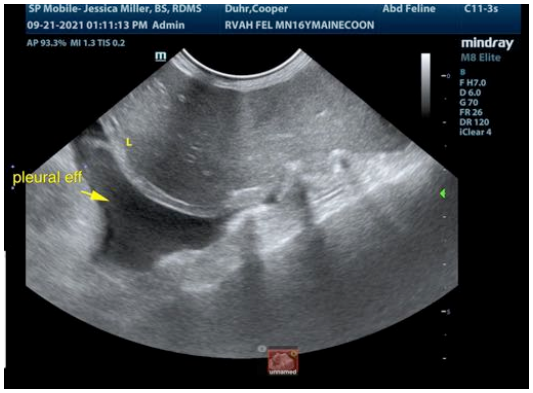
Unclassified cardiomyopathy with left-sided heart failure and pleural effusion and pulmonary edema.

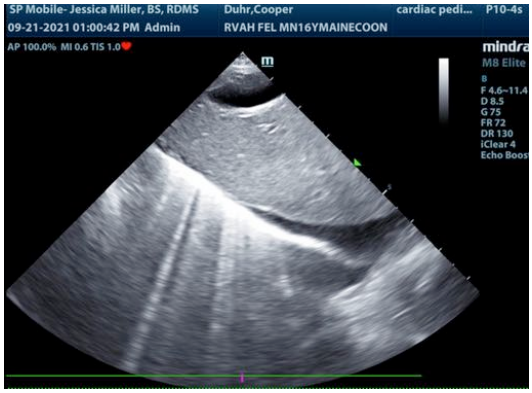
Concurrent neoplasia in the chest cannot be completely ruled out and the low albumin is concerning for emerging round cell neoplasia/lymphoma.

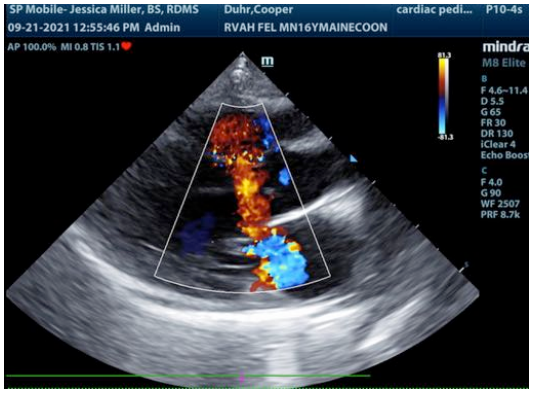
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I recommend stabilizing the heart with off label Pimobendan at 0.3 mg/kg b.i.d., Plavix therapy, Lasix at 12.5 mg b.i.d. x 2-3 doses and then reduction to 6.25 mg b.i.d. A recheck echocardiogram is recommended in 5-7 days. Radiographic recheck as well as BUN, creatinine and urinalysis is recommended in 48 hours. Guarded prognosis depending upon if concurrent neoplasia is present in the lungs. Broad spectrum respiratory antibiotics such as Zithromax would also be appropriate.









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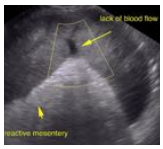
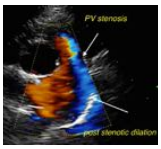
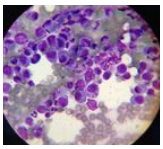
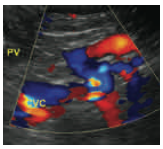

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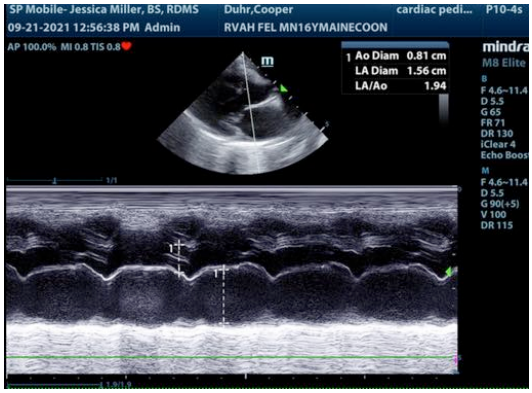

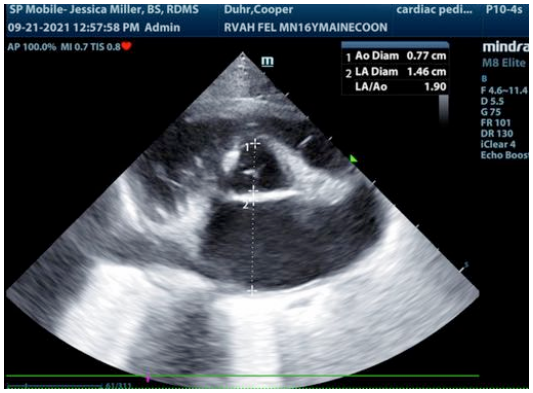

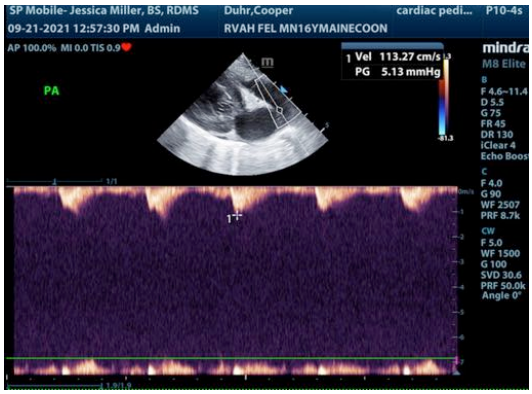

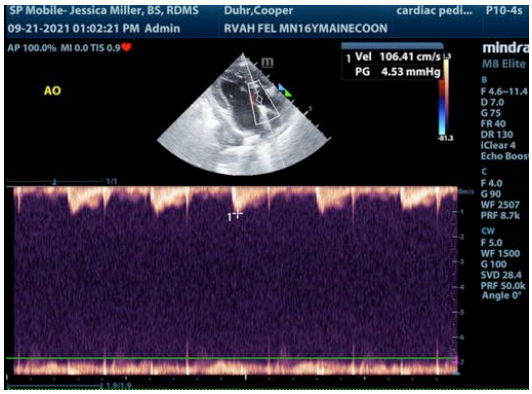

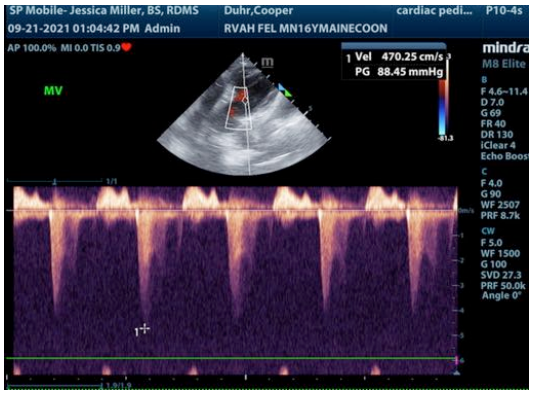

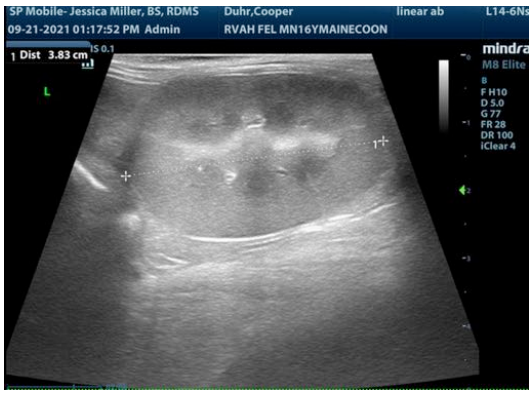

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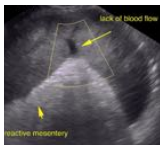
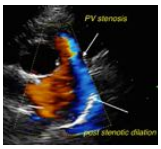
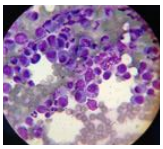
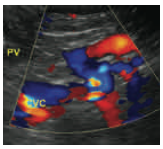

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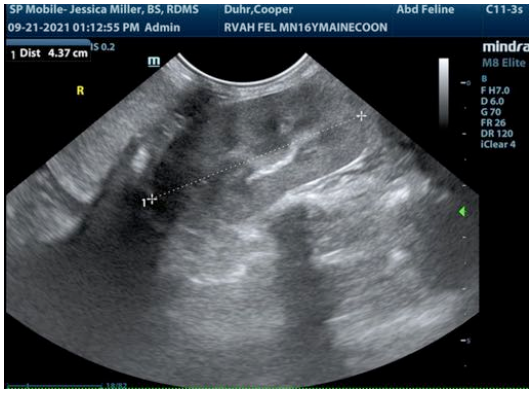

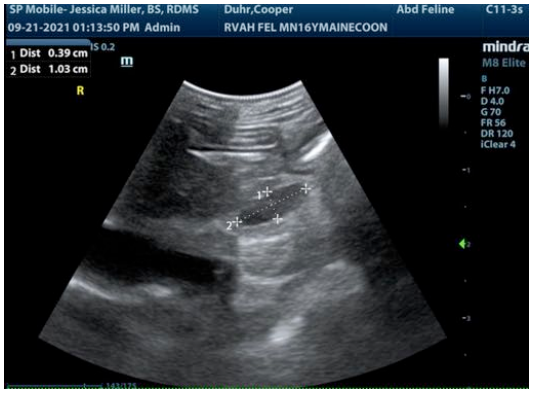

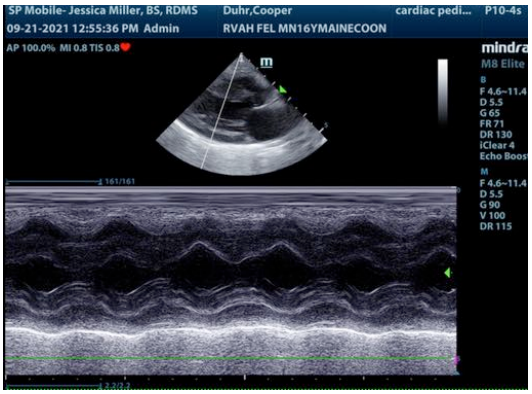

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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