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Clinical Sonography & Telecytology
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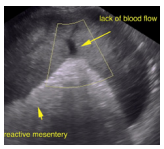

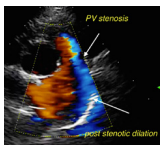

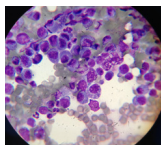
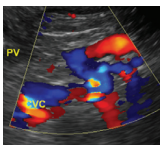

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1-800-838-4268 info@sonopath.com

PATIENT
Jesse Vazquez

SPECIES
Feline

BREED
DSH

SEX
Neutered Male

AGE
14 Years

WEIGHT
6 Pounds

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

IMAGING PERFORMED BY
Kelly Vazquez

HOSPITAL NAME
Veterinary Wellness

REFERRING VET
Dr. Sepulveda

INVOICE
35667

DATE
2/15/22

PRESENTING CLINICAL SIGNS

History of both IBD, asthma, and cardiomyopathy since kittenhood. No routine cardiac or IBD medications. On Flovent for asthma and had been on Denamarin when he was eating. When IBD flares up, he is treated with Cerenia and pepcid. Patient presents today for anorexia and weight loss. Abnormal PE/Chem/CBC/UA Results: Bloods from Jan 2021 found anemia. RBC 5.3, HGB 8.6, HCT 26%.

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		102	0.5	1.45	0.51	36.3	71.2
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	1.8	1.55	1.35		1.0	1.0	NM

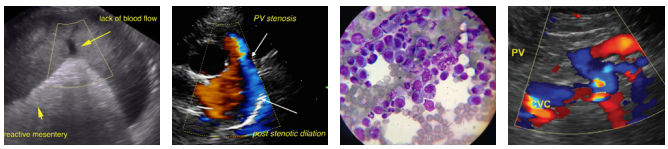
Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

Cardiac Presentation

The echocardiogram in this patient demonstrated mildly enlarged **left atrial** size based on 3 separate LA measurements. No evidence of spontaneous contrast or thrombus. The cranial and caudal **mitral** valve leaflets presented subtle thickening with normal kinetics, minor primarily centralized MR present. Overt systolic anterior motion (SAM) of the mitral valve was not definitively visualized. The **left ventricular** septum and free wall revealed normal thicknesses, adequate contractility and normal left ventricular volume, yet some echogenic remodeling of the septum and free wall were noted 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 compared to LA with normal content and without evidence of spontaneous contrast or masses. Mild centralized MR present. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. The **right ventricle** was enlarged in size with normal 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, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.



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The area of the aortic trifurcation was free of pathology.

Normal renal size with asymmetrical margination was 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. The left kidney measured 4.6 cm. The right kidney measured 3.9 cm.

Adrenal Glands

No overt pathology in the area of the left and right adrenal gland.

Spleen

The spleen exhibited potential for mild subnormal size, potentially owing to volume contraction, and exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age related remodeling with minor potential for inflammatory or neoplastic disease.

Liver

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 with thin walls and primarily anechoic luminal content. The proximal common bile duct was dilated (0.20 cm diameter) and tortuous without overt post hepatic obstruction. This finding may suggest age related changes or secondary to underlying cholangitis / cholangiohepatitis especially if previous or current liver enzymes elevations have been noted. The area of the duodenal papilla was sonographically normal without overt pathology.

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 small intestine presented subjectively intact wall layering with primarily maintained 1:3 muscularis/mucosa ratio. Subjective increased intestinal gas pattern and secondary artifact present. Overt evidence of mechanical obstruction, loss of intestinal wall layering, or intestinal masses was not noted. Duodenum wall measured 0.24 cm.

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

Pancreas

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

Free Abdomen

Mild to moderate volume free fluid present. Multiple mid abdominal variably enlarged mesenteric lymph nodes were present. Example measured 2.9 cm x 0.78 cm. Mild non-uniform generalized mesentery.

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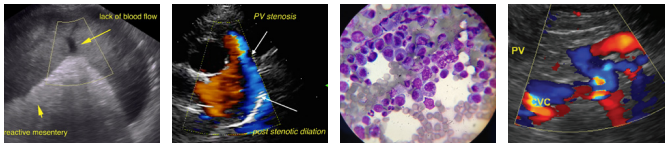

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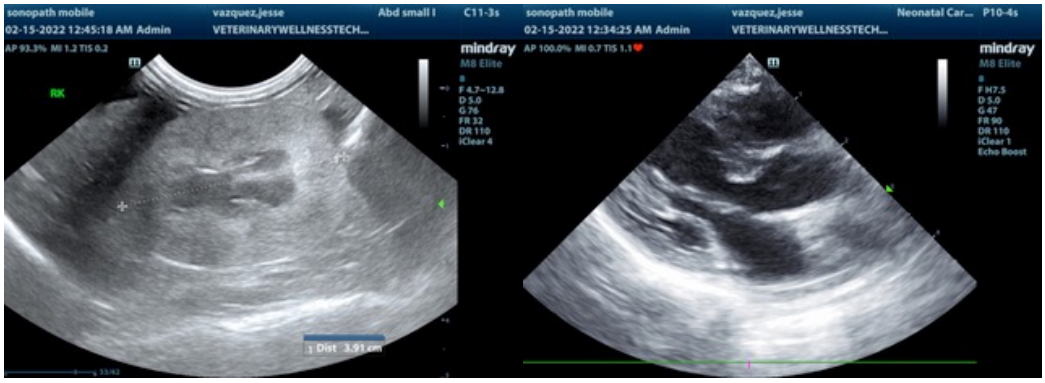
ULTRASONOGRAPHIC FINDINGS

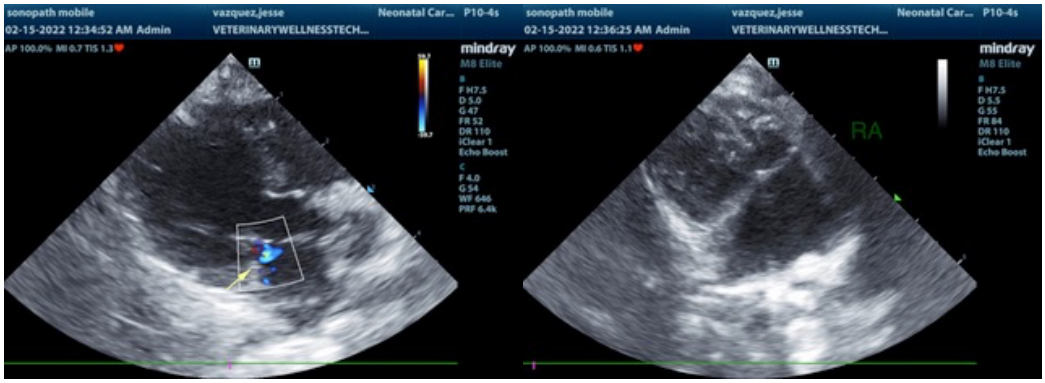
- Unclassified cardiomyopathy and minor MR/TR
- Bilateral interstitial nephrosis renal pattern
- Multiple variably sized to variably echogenic mid abdominal mesenteric lymph nodes – chronic reactive hyperplasia, lymphadenitis owing to inflammatory bowel, potential for neoplastic lymphadenopathy possible.
- Moderate volume peritoneal free fluid of unknown etiology
- Generalized non-uniform reactive mesentery

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of biatrial enlargement in the face of normal wall thickness with evidence of myocardial remodeling is suggestive of unclassified cardiomyopathy. Possibility of minor SAM and secondary MR cannot be definitively excluded. The lack of systolic dysfunction or significant left or right heart chamber enlargement indicate that the peritoneal effusion in this case is suspected to be non-cardiogenic in origin.

Effusion analysis, cytology +/- culture and sensitivity for further clarification suggested. Potential for carcinomatosis, lymphomatosis or similar, given the mesenteric lymphadenopathy, is of concern, but not definitive. If accessible, ultrasound guided FNA of an enlarged mesenteric lymph node (assuming normal clotting status) for cytology +/- culture and sensitivity warranted.





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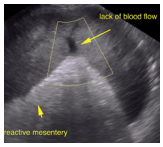

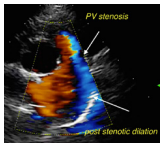

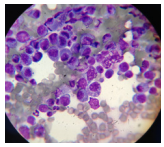
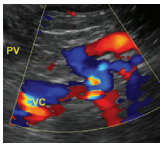

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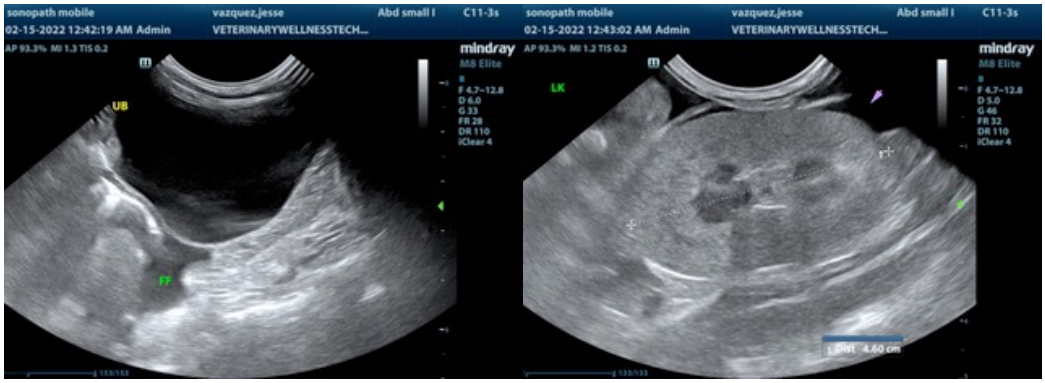

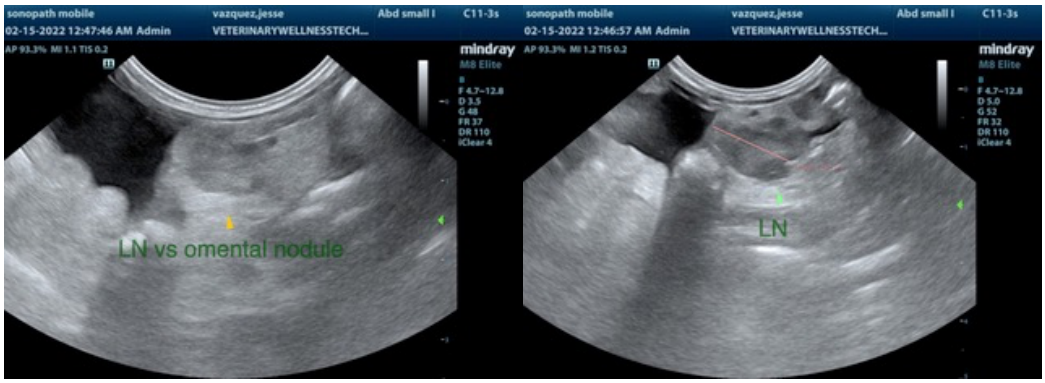

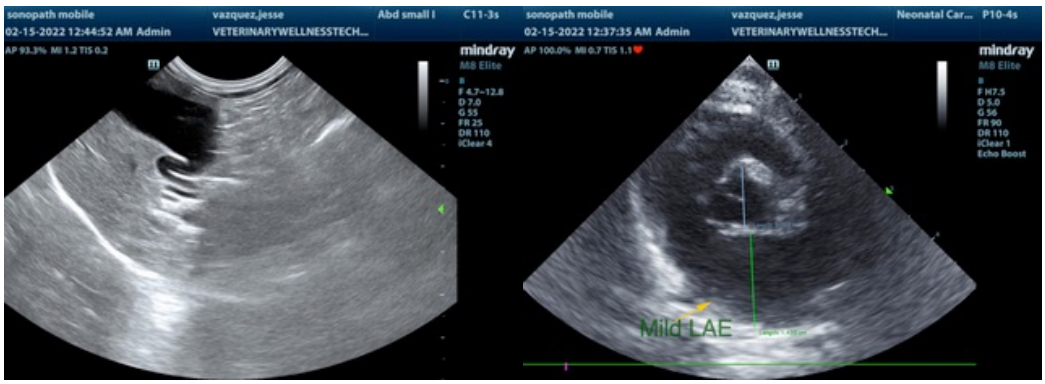

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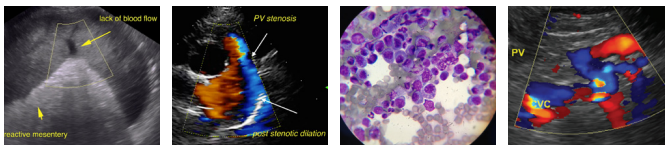

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

info@SonoPath.com