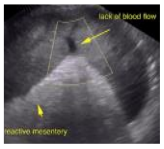
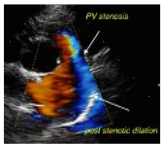
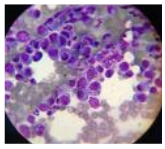
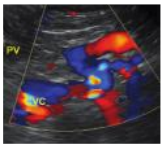
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT

Oscar Fox

SPECIES

Feline

BREED

DSH

SEX

MN

AGE

14 yrs

WEIGHT

14 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Marsh Hospital for Animals

REFERRING VET

Dr. Milwicki

INVOICE

14663

DATE

8/23/22

PRESENTING CLINICAL SIGNS

Chronic soft stool/diarrhea with blood, urinating outside of litter box, vocalizing often. History of elevated renal values. Current meds: metronidazole 75 mgs BID, SQ fluids (NaCl), Budesonide, and on Renal diet.
Abnormal PE/Chem/CBC/UA Results: ALP: 80.

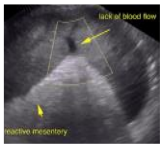
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

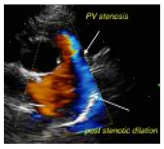
FELINE CARDIAC PARAMETERS	**BODY WEIGHT** (kg)	**HR** (BPM)	**IVSd** (cm)	**LVIDd** (cm)	**LVWd** (cm)	**FS** (%)	**EF** (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		120	0.46	1.7	0.40	50	84.2
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**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	1.4	1.45	1.1		1.0	0.91	NM

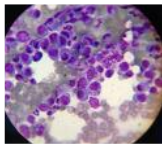
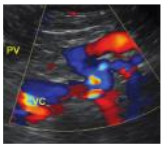
Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

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 exhibited mild irregular age-related changes without evidence of valvular prolapse. Minor MR was present on doppler. The **left ventricle** presented normal thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without evidence of significant fibrotic or ischemic disease, yet minor age-related myocardial remodeling was noted. **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.





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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 was noted.

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 mildly uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be mildly 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 4.1 cm in length. The right kidney measured 3.8 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 0.48 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.36 cm width.

Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Multiple, nondisruptive, non-expansive, echogenic nodules were present throughout the cranial to caudal 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 or neoplastic changes were not noted. The echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas. The spleen was normal in overall size measuring 0.81 cm width at the level of the hilus.

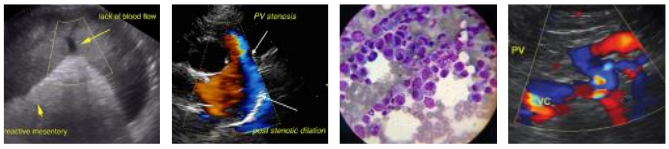
Liver/ Gallbladder

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. The gallbladder walls were sonographically unremarkable. The gallbladder contained anechoic content with minor hyperechoic luminal gallbladder debris. No evidence of post hepatic stasis or obstruction was noted. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. Minor nonshadowing ingesta / chyme was present primarily in the antrum and pylorus. The gastric body wall width measured 0.24 cm.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Segmental mild nonshadowing chyme was present. The duodenum wall measured 0.26 cm width. The jejunum wall measured 0.23 cm width. No overt pathology was noted in the area of the ileocolic junction.



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The colon exhibited sonographically unremarkable wall layering. The colon appeared to contain semi-formed to potential soft feces consistent with clinical history.

Pancreas

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

Free Abdomen

No evidence of previously noted jejunocolic lymphadenopathy was noted. No omental masses or evidence of peritoneal free fluid were noted.

ULTRASONOGRAPHIC FINDINGS

- Normal echocardiogram for age
- Minor MR
- Static benign splenic nodules - consistent with probable myelolipomas
- Sonographically unremarkable urinary bladder
- Static nonspecific chronic renal changes
- Overtly normal gastrointestinal tract / colon with mild gastric and segmental small intestinal chyme
- No evidence of previously noted jejunocolic lymphadenopathy

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The hemodynamic effects of the mild MR present in the echocardiogram appear to be minimal given the lack of left atrium enlargement or left heart volume overload. Overall static echocardiographic presentation without evidence of significant structural or functional cardiomyopathy Is noted. No indication for cardiac medications is evident.

The hematochezia in this patient may suggest low-grade colitis. Potentially, the current use of Budesonide may be masking intestinal mural changes and may be a contributing factor to the resolved previously noted jejunocolic lymphadenopathy. A GI panel, if not previously done, is suggested to assess cobalamin and folate levels, as well as for occult pancreatitis, which may present as sonographically normal.

Empirically, in addition to current therapy, hydrolyzed diet or higher fiber diet, high colony count probiotic +/- empirical cobalamin supplementation may prove beneficial.

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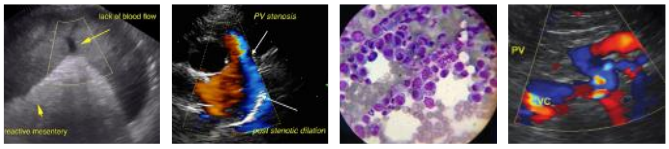

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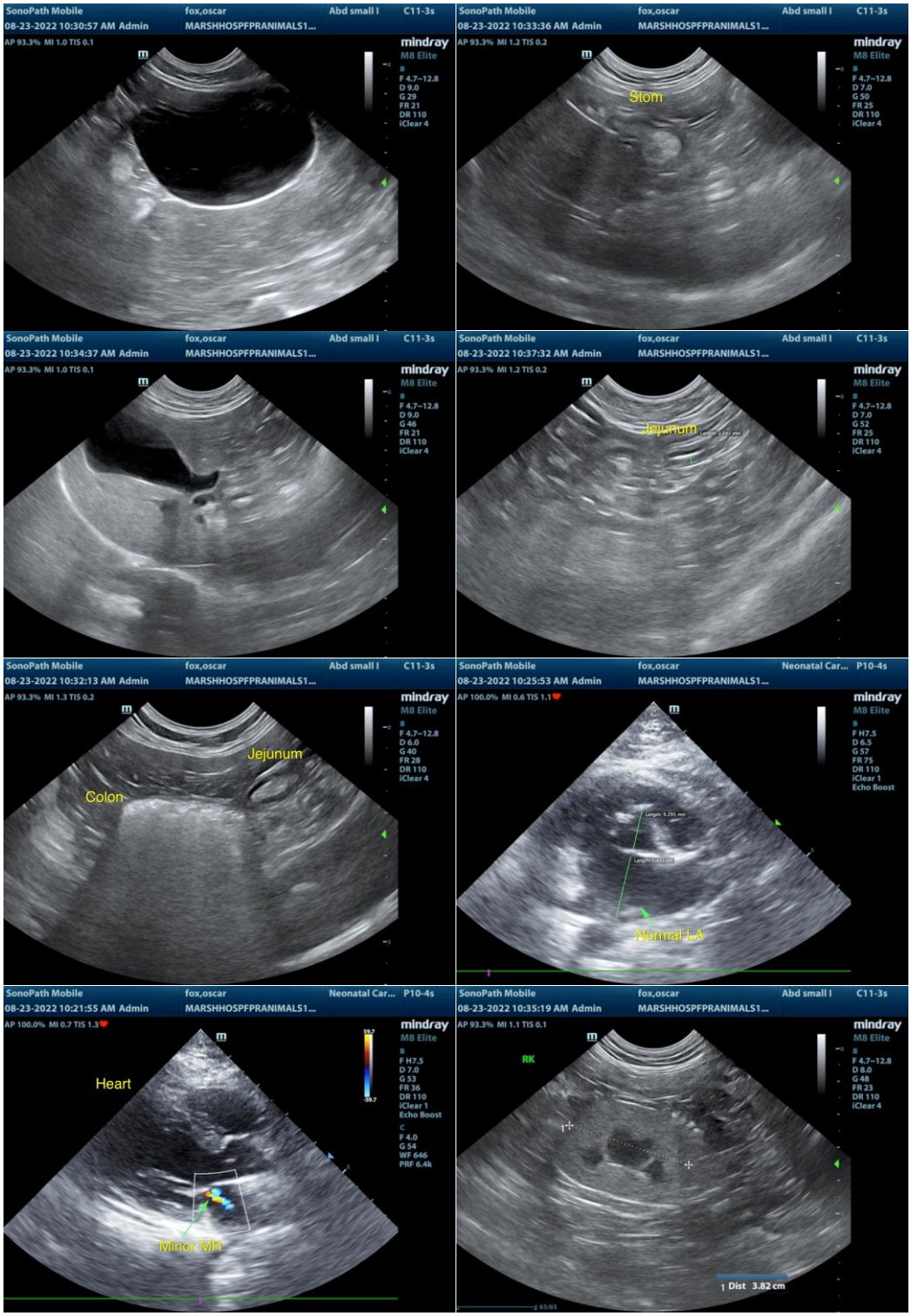

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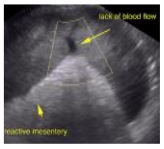
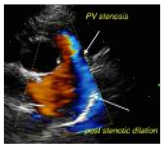
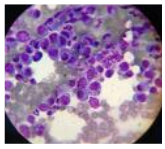
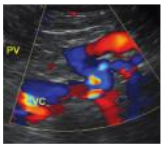

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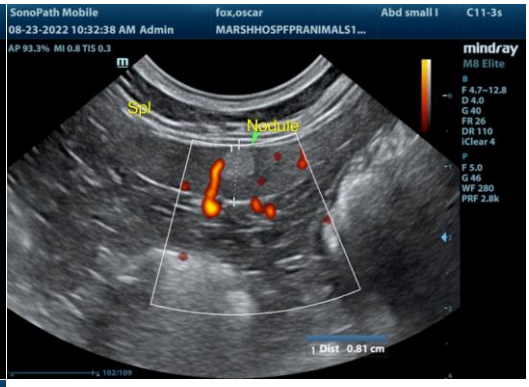

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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