

**DATE PRESENTING CLINICAL SIGNS**

1/26/23 Presented for exam for vomiting on 1/18/2023. ON exam pet has lost another 1/2 pound and has been steadily losing weight for a few years. Grade 1/6 heart murmur noted. Pet also has significant dental disease. Appetite has been decreased past few days.

PATIENT

Mia Martinchek

Current Medications: None.

Lab Results: SDMA- 14, Creat- 2.3, BUN- 36.

Date of Previous IntraPet Ultrasound: No previous.

SPECIES

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Feline

Imaging Performed By: Rachel Brillhart, RDMS.

BREED**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

DSH

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

SEX

Spayed Female

AGE

9/6/06

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia or infarcts observed. The right kidney measures 3.39 cm. The left kidney measured 3.84 cm. The left proximal ureter is dilated, measuring 0.33 cm. The proximal hydroureter ends/tapers down without a visible obstructing cause suspicious for a stricture. Non-obstructive nephroliths are present bilaterally. However, there is no visible obstructive nephrolith present to explain the pyelectasia and hydroureter on the left side. A previously passing nephrolith/ureterolith or one not visible in these images cannot be ruled out. A hyperechoic band parallel to the corticomedullary border is present in both kidneys.

WEIGHT

7.3 Pounds

INTERPRETED BYBeth Johnson, DVM
DACVIM**Adrenal Glands**

The right adrenal gland is normal in size (0.30 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

HOSPITAL NAME

Fullerton AH

The area of the left adrenal gland is examined without evident adrenal gland pathology.

REFERRING VET**Spleen**

Dr. Unger

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

INVOICE

44550

Liver

Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen is empty with no evidence of obstruction or foreign material.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

Pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and has a mildly irregular undulating contour. Parenchyma is coarse with mixed echogenic remodeling noted. Pancreatic duct dilation is noted.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

The mesenteric lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

ULTRASONOGRAPHIC FINDINGS

- **Inflammatory bowel disease (IBD) pattern** – Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. No aggressive lymphadenopathy, loss of layering, etc. is noted to make lymphoma more probable, but lymphoma cannot be definitively ruled out without tissue sampling.
- **Hyperechoic hepatomegaly** – This appearance is most consistent with benign hepatic lipidosis. Infiltrative disease such as amyloidosis or round cell neoplasia, such as mast cell tumor or less likely, lymphoma, is also possible.
- Chronic active pancreatitis
- **Reactive mesenteric lymph nodes** – infiltrative neoplastic disease cannot be ruled out but is considered less likely.
- Age related kidney changes with non-obstructive nephrolithiasis bilaterally, as well as severe left renal pyelectasia and very proximal left hydroureter, most consistent with a stricture likely from a previous ureterolith. A current ureterolith or mass, etc. causing the ureteral obstruction is possible but considered less likely, as there is no evidence of it in these images.
- **Bilateral medullary rim sign** - This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.

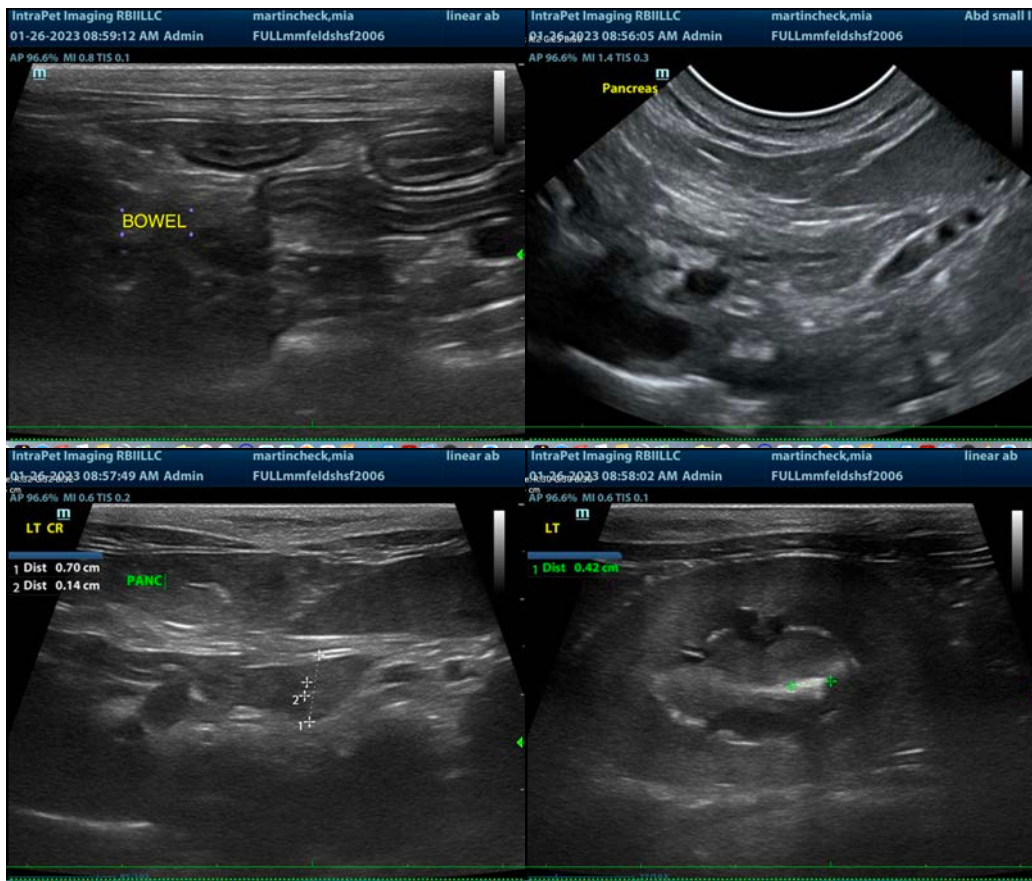
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

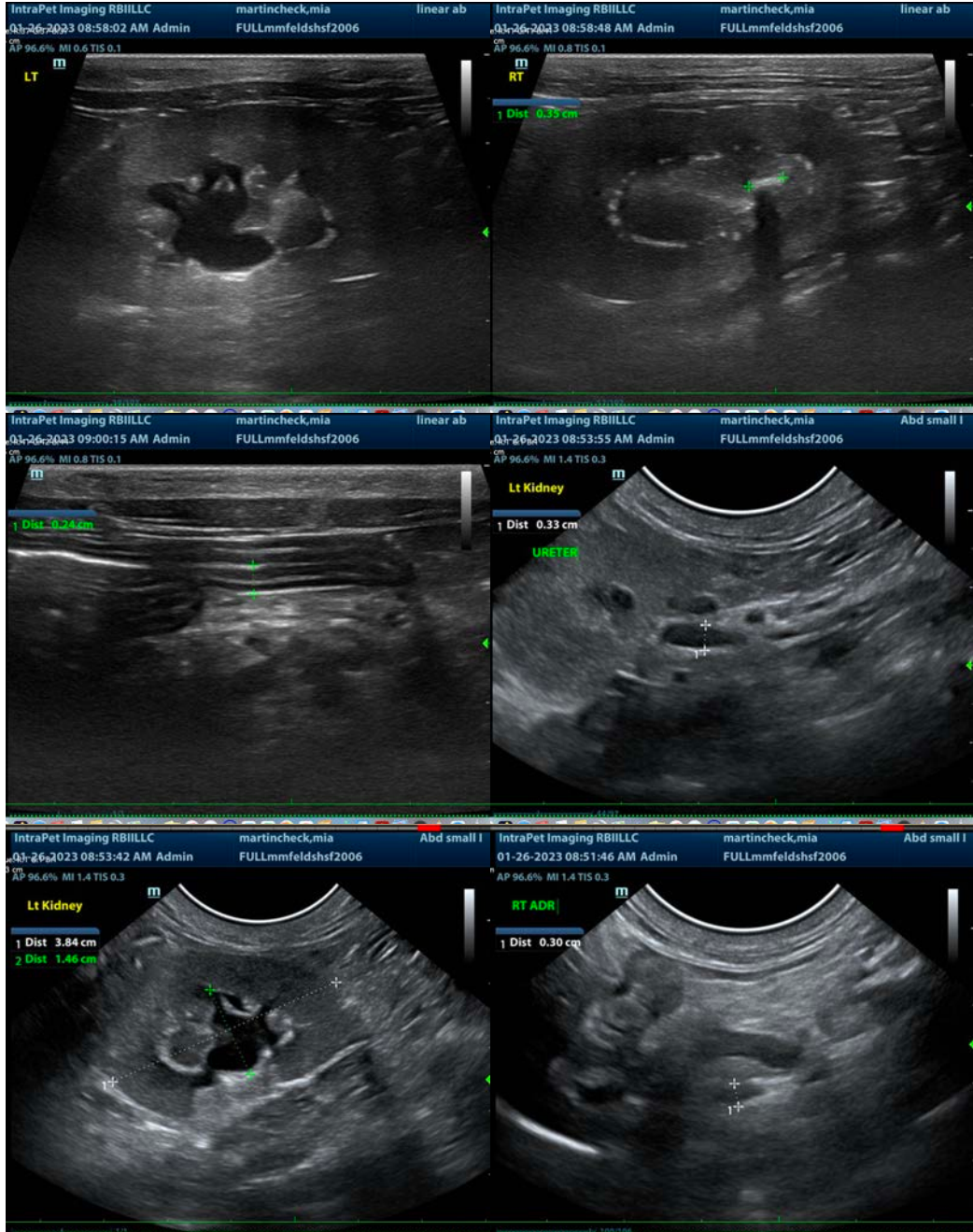
A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

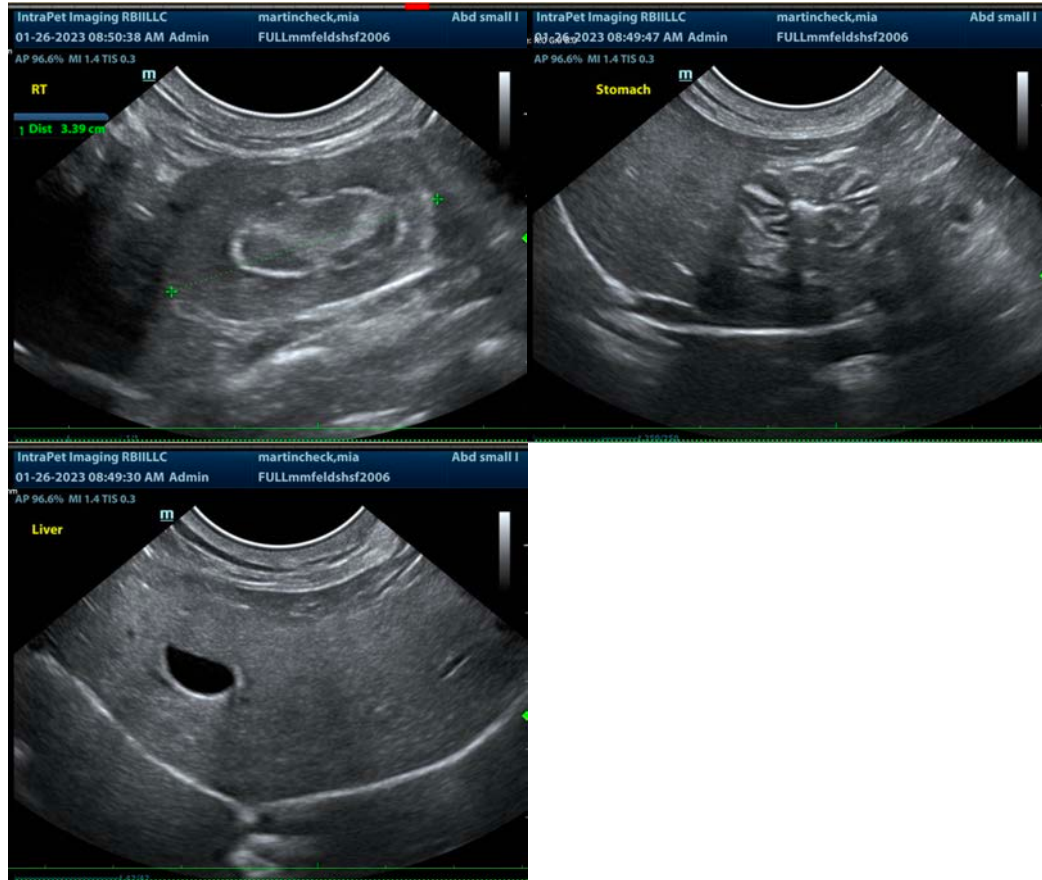
The liver changes in this patient are likely consistent with hepatic lipidosis. However, infiltrative neoplasia can't be ruled out. Therefore, prior to pursuing biopsies of the GI tract, which is ultimately what is likely recommended for a definitive diagnosis, a fine needle aspirate of the liver could be considered if patient's coagulation status is appropriate.

If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

Pending workup and patient response, etc. to the suspected infiltrative bowel disease likely causing the reported clinical signs, close monitoring of kidney function is recommended, as pending the right kidney's ability to compensate, the left kidney may eventually require an intervention procedure such as a SUB placement versus other to prevent progression of kidney dysfunction.







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.

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