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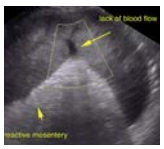
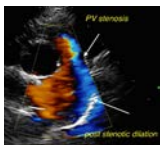
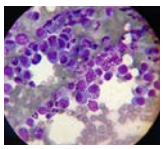
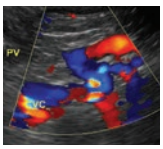

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1-800-838-4268 info@sonopath.com

PATIENT
Petie Groeschl

SPECIES
Feline

BREED
DSH

SEX
Neutered Male

AGE
9 Years

WEIGHT
6.2 Pounds

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
A Murphy, CVT

HOSPITAL NAME
Wauwatosa VC

REFERRING VET
Dr. Kevin Kicker

INVOICE
39797

DATE
7/22/22

PRESENTING CLINICAL SIGNS

Diagnosed with IBD 1/31/22 and started on Prednisolone 5mg PO BID. Metronidazole 50mg PO SID. Cobalamin chewable supplement. Since the cat has continued to lose weight and have diarrhea O ha discontinued Metro and Cobalamin and increased the Pred to 7.5mg PO SID
Abnormal PE/Chem/CBC/UA Results: Loops of bowel are thick and ropey. BCS 1/9, Severe muscle wasting

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** is adequately distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra. A small amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 3.78 cm (3.80-4.40 cm). The capsule is smooth. The cortex is hyperechoic, i.e. it is isoechoic to the spleen. A hyperechoic band is observed along the medulla, traversing parallel to the corticomedullary junction, which accentuates the definition of the cortico-medullary junction. A couple of very well-defined, triangular shaped, severely hyperechoic, cortical lesions are observed. This is in addition to diffuse hyperechogenicity of the cortex. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is hyperechoic, however, the mesentery is diffusely hyperechoic.

The **right** kidney measures 3.86 cm (3.80-4.40 cm). The capsule is smooth. The cortex is hyperechoic, i.e. it is isoechoic to the spleen. A hyperechoic band is observed along the medulla, traversing parallel to the corticomedullary junction, which accentuates the definition of the cortico-medullary junction. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is hyperechoic, however, the mesentery is diffusely hyperechoic.

Aortic bifurcation/trifurcation No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.39 cm at the cranial pole, 0.40 cm at the caudal pole. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

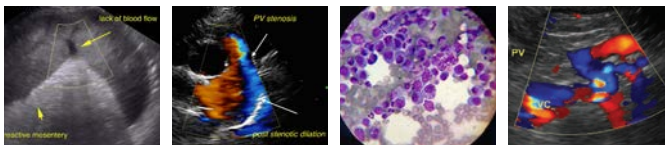
The **right** adrenal gland measures 0.41 cm at the cranial pole, 0.35 cm at the caudal pole. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size 6.5 mm (normal = 10 mm), echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified. Severe acoustic enhancement of the surrounding omentum is present.

Liver

Mild hepatomegaly is suspected, however, this cannot be confirmed radiographically due to the lack of contrast. The liver's borders are smooth and vary between sharp to very mildly rounded. Its echotexture is homogeneous, yet mildly hyperechoic. Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.



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The **gallbladder** (GB) is mildly dilated (consistent with a fasted individual). A small amount of free floating echogenic material is noted. The GB wall is mildly thickened (0.17 cm) and mildly hyperechoic. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined, however, the mucosa and submucosa are more prominent than usual. No obvious abnormalities are observed with its peristalsis.

Duodenum: Thickened (0.32 cm) with a small amount of gas and fluid in the lumen. Echogenic ingesta is present within the lumen of the duodenum.

The small intestinal wall thickness varies between the normal reference range to thicker than normal, i.e., between 0.28 cm to 0.37 cm. Some segments of jejunum show severe mucosal fogging, in addition to a diffusely prominent submucosa. A large amount of ingesta fluid and gas are present within the lumen of the small intestines. Decreased peristalsis is evident. Echogenic ingesta is present within the lumen of the small intestines.

The colonic wall is thickened (0.28 cm). Mild loss of definition of mural detail is noted, with thickening of the serosal layer. A large amount of liquid stools and gas are present in the descending colon.

The mesentery surrounding the intestines is hyperechoic throughout the abdomen.

Pancreas

The **pancreas** is mildly enlarged, diffusely homogeneous, yet moderately hypoechoic. Its contours are smooth and regular. The surrounding mesenteric fat is moderately to severely hyperechoic, however, it is difficult to determine if this is attributed to pancreatic inflammation. Overt signs of neoplasia are not noted.

Other

Lymph nodes (LNs)

Hepatic LNs: Enlarged (0.37 cm in diameter x 0.47 cm in length and 0.36 cm in diameter x 0.40 cm in length), hypoechoic, with maintenance of smooth contours.

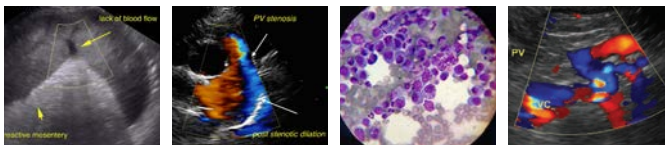
Jejunal LN: Enlarged (0.65 cm in diameter x 2.09 cm in length, moderately hypoechoic, with maintenance of smooth contours.

Abdominal effusion

A scant amount of adequate ascites is visualized between the gallbladder and liver lobe, as well as mid-abdomen, between loops of bowel.

ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal**: Very severe signs of gastrointestinal inflammation are observed. Differential diagnoses include a chronic enteropathy, e.g., inflammatory bowel disease, food intolerance, etc. Although the definition of the wall layers is preserved, one cannot definitively exclude emerging infiltrative disease, (lymphoma or other round cell tumour), without performing tissue biopsies, and possibly immunohistochemistry and PARR. Another possibility is that Petie has suffered from IBD and it has or is in the process of mutating into lymphoma. It should be noted that both IBD and lymphoma may occur concurrently in some cats.



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- **Pancreas**: A smoldering pancreatitis is possible, however, a false impression of inflammation may be occurring due to the diffuse acoustic enhancement of the mesentery. Signs of neoplasia are not appreciated.
- **Liver**: the majority of the changes are attributed to the administration of steroids, however, cholestasis and cholangitis/cholangiohepatitis, and a secondary hepatic lipidosis must be considered.
- **Gallbladder**: Small amount of gallbladder **sludge** with sonographic signs suggestive of cholecystitis, including a suppurative cholecystitis. Obtaining a history regarding signs of gastro-oesophageal reflux disease (GERD) from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required.
- **Lymph nodes**: Mild lymphadenomegaly is suggestive of reactive hyperplasia. However, early infiltration with neoplastic cells cannot be entirely ruled out.
- **Mesentery**: The mildly to moderately diffusely hyperechoic mesentery is most likely due to smoldering inflammation, whether gastrointestinal (e.g., IBD), pancreatitis, etc.
- **Kidneys**: Signs of infarcts and fibrosis are noted bilaterally, as well as possible proteinuria (medullary rim sign). Pyelonephritis cannot be excluded due to the history of glucocorticoid administration and the changes noted.
- **Urinary bladder**: The free floating sediment may not be clinically insignificant given the lack of inflammatory changes to the bladder wall, however, it should not be ignored given the renal findings and the chronic administration of steroids, i.e. subclinical bacteriuria is possible.
- **Ascites**: Extravasation due to increased permeability of the GI tract, hypoalbuminemia (cachexia) or vasculitis are possible causes.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Ideally, a urinalysis and urine culture and sensitivity

A urine protein: creatinine ratio is suggested if the urine culture is negative (given the renal changes)

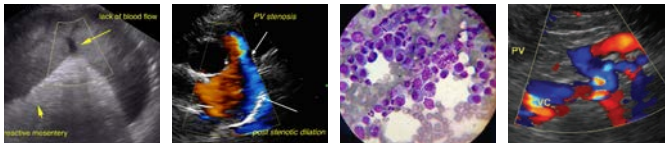
*__TLI__, Exocrine pancreatic insufficiency is suspected in light of continued weight loss, cachexia and sarcopenia.

Ideally, assessment of serum cobalamin concentration (will help determine if supplementation with oral form was being absorbed properly).

Supplementation with injectable cobalamin is worthwhile pursuing as enteral administration is not always well absorbed. Some individuals also benefit from folate supplementation

Strongly recommend adding psyllium to Petie's current diet as many individuals can suffer from fibre responsive diarrhea. If he won't eat a diet with psyllium added, consider Hill's Biome.

If none of the above are helpful, food intolerance is still possible; consider trying a hypoallergenic, ideally, *hydrolyzed diets*, including a well-balanced homemade diet.



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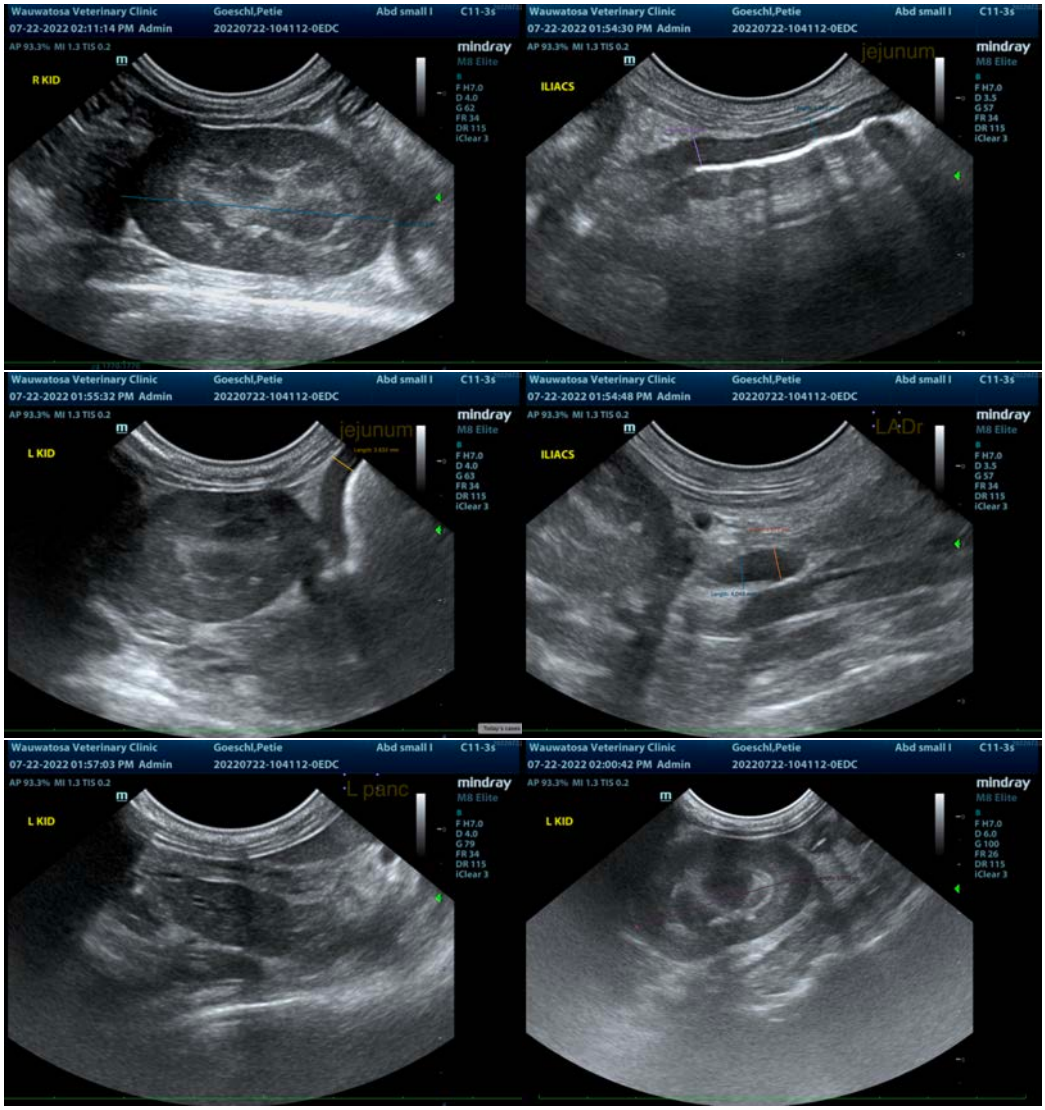
Analgesia for visceral pain, such as buprenorphine (0.005-0.01 mg/kg sublingually every 8-12 hours) for a minimum of 7-10 days. Continue for 3-4 weeks if an improvement is noted; the dose and frequency may be weaned to the minimum effective dose during that time. Likely suffering from cramps, bloating, etc.

+/- gabapentin

If blood work has not been performed recently, a CBC, serum biochemical profile, T4 and urinalysis may help determine if a comorbidity is present.

Deworm with fenbendazole, if not already performed.

Petie is a complicated patient, and although some treatment recommendations have been described, an internal medicine consult is suggested in order to describe all possible options in further detail.



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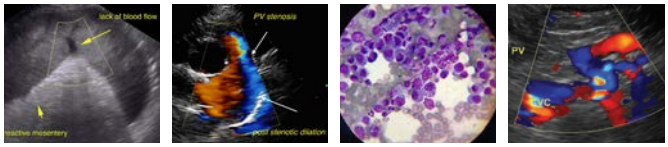

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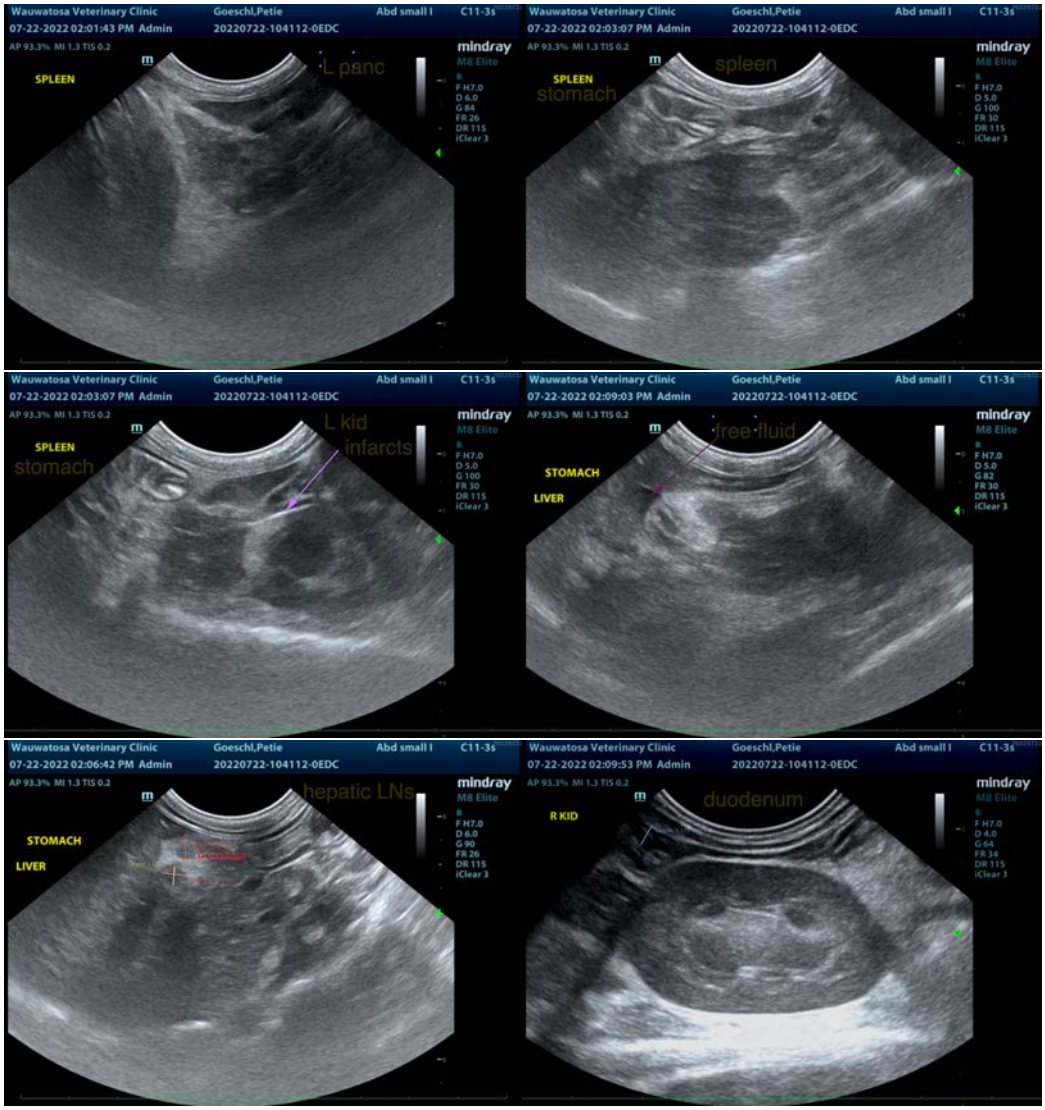

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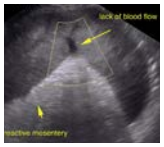
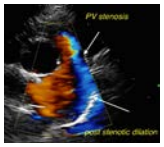
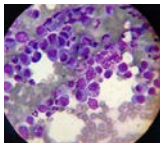
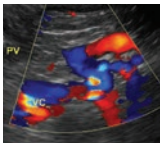

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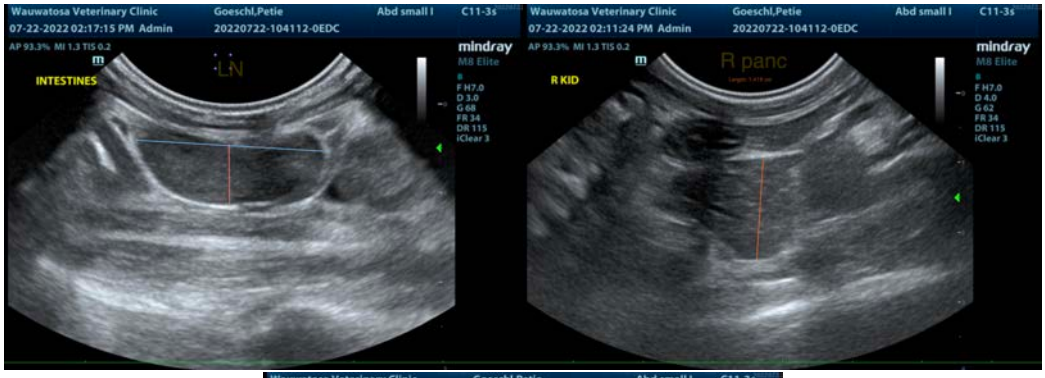

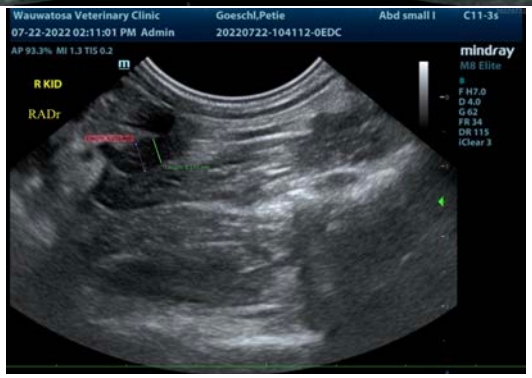

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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