IMAGING PERFORMED BY

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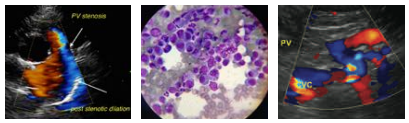


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

DATE
6/13/22

PATIENT
Chester Glick

SPECIES
Feline

BREED
Domestic Shorthair

SEX
Neutered male

AGE
8/10/09

WEIGHT
7.46 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

HOSPITAL NAME
Cat Hospital at Towson

REFERRING VET
Dr. Slaughter

INVOICE
30974

PRESENTING CLINICAL SIGNS

Has been vomiting and having loose stool for 3 months, the cat is positive for COVID19. Weight loss
Current Medications: B12 injection.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, BS, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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

Kidneys

The **left** kidney measures 3.75 cm (3.80-4.40 cm), decreased in size. The capsule is smooth. The cortex is hyperechoic. A moderate loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is very mildly hyperechoic, however, the mesentery throughout the entire abdomen is diffusely hyperechoic.

The **right** kidney measures 3.54 cm (3.80-4.40 cm). The capsule is smooth. The cortex is hyperechoic. A mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is very mildly hyperechoic, however, the mesentery throughout the entire abdomen is diffusely hyperechoic.

Adrenal Glands

The **left** adrenal gland measures 0.38 cm. 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 0.29 cm 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 6.4 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. The mesentery surrounding the spleen is hyperechoic.

Liver

There are no obvious signs of hepatomegaly. The liver's borders are smooth and sharp. It is homogeneous, however, it is diffusely hyperechoic, i.e. it is isoechoic to the spleen. No focal lesions are visualized. The borders of the portal veins are more prominent than usual. The hepatic vessels are within normal limits. The gallbladder (GB) wall is within normal limits in thickness and echogenicity. A small amount of inspissated and free floating echogenic material is present within the GB. 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

A small to moderate amount of fluid and gas are present in the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. A mild ileus is present.

A few segments of the small intestines vary between the normal reference range to thicker than normal, measuring up to 0.39 cm. Other segments are well within the normal reference range (0.20 cm). Other examples: 0.27 cm, 0.34 cm.

The small intestinal wall thickness and definition of the wall layers is preserved, however, stippling of the mucosa and muscularis is observed. The muscularis is thicker than normal. A small amount of gas, fluid and ingesta are present in the small intestines.

No obvious abnormalities are observed with the ileo-cecal colic junction.

Ineffective peristalsis is observed, i.e., a "to and fro" motion is observed.

A large amount of gas is present in the colon. Wall thickness and definition of wall layers appear to be within normal limits.

The mesentery surrounding the gastrointestinal tract is diffusely hyperechoic.

Pancreas

The left limb is mildly hypoechoic, however, it is not enlarged and its contours are smooth. The surrounding mesentery is mildly to moderately hyperechoic. These signs are suggestive of inflammation, i.e., active pancreatitis, is suspected.

The right limb is not well visualized due to the gas in the surrounding gastrointestinal tract.

Other

Lymph nodes (LNs)

Enlarged, hypoechoic **mesenteric LNs** with irregular contours are observed. The mesentery surrounding the enlarged LNs is moderately to severely hyperechoic.
0.94 cm in diameter x 3.50 cm in length
0.56 cm in diameter x 1.54 cm in length
1.43 cm in diameter x 1.89 cm in length
1.36 cm in diameter x 2.46 cm in length

Abdominal effusion

A trivial amount of free fluid is observed between the right kidney and a segment of small intestine. visualized.

Mesentery

The mesentery surrounding the gastrointestinal tract is diffusely hyperechoic.

ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal (GI) tract, lymphadenomegaly** and **hyperechoic mesentery**: The changes noted with the small intestines are consistent with inflammation. Differential diagnoses include chronic enteropathy, e.g., inflammatory bowel disease, as well as inflammation due to chronic vomiting and diarrhea. Individuals positive for COVID-19 can have gastrointestinal lesions, therefore, a chronic enteropathy due to the inflammation secondary to viral disease, and dysbiosis, must also be considered. Lymphoma or other round cell tumour, may cause similar changes. Lymphadenomegaly is moderate; both reactive hyperplasia and neoplastic infiltration are possible causes. The diffuse hyperechoic mesentery throughout the abdomen is consistent with smoldering inflammation, due to IBD, or other ongoing diffuse inflammatory process, such as pancreatitis. Neoplasia may also cause similar hyperechogenicity of the mesentery.

- *Dysbiosis* is highly likely based on the chronicity of Chester's clinical signs, as is *hypocobalminemia*.

- **Liver** and **Gallbladder:** The diffuse hyperechogenicity may be due to hepatic lipidosis (hyporexia), however, subclinical cholangitis/cholangiohepatitis, including a suppurative component, due to an ascending bacterial infection from the GI tract, may be present. Gallbladder **sludge** is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. *Suppurative cholecystitis* cannot be excluded despite the absence of sonographic abnormalities. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required.

- **Pancreas**: A *smoldering pancreatitis or intermittent bouts of pancreatitis* is suspected.

- **Kidneys**: *Age related degeneration* is suspected, however, *pyelonephritis* cannot be excluded in older cats, despite absence of classical sonographic signs.

- **Urinary bladder**: Although the bladder wall does not show inflammatory changes, pyelonephritis cannot be excluded based on the renal changes, therefore, the sediment should not be ignored. The debris is likely composed of mucus, crystalline material and exfoliated cells; ***subclinical bacteriuria and pyelonephritis*** cannot be excluded.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

Fine needle aspirates of the multiple lymph nodes that are enlarged, however, there is a chance that results will be non-diagnostic, i.e. a diagnosis of emerging lymphoma may be missed and only reactive hyperplasia is observed.

Ideally, endoscopy and biopsies of the stomach and small and large intestines.

A urinalysis and urine culture and sensitivity to exclude pyelonephritis.

Analgesia (buprenorphine (0.005-0.01 mg/kg, sublingually, every 8-12 hours) with or without gabapentin. Continue for 3-4 weeks, or longer, as needed.

Treatment of nausea

Small, frequent meals

A spec fPL. If the spec fPL is negative, one may also consider performing a TLI to assess for secondary EPI, which is not uncommon in older cats or cats with IBD, and pancreatitis.

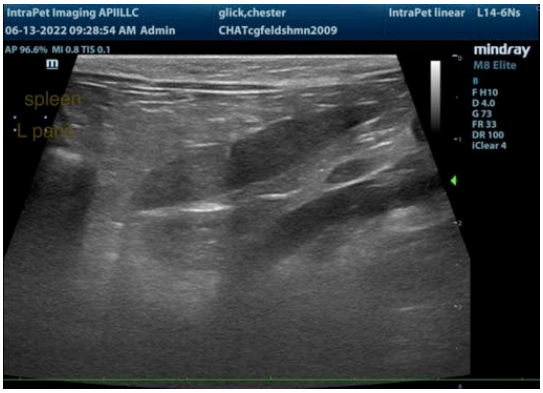
Supplementation with cobalamin should be continued.

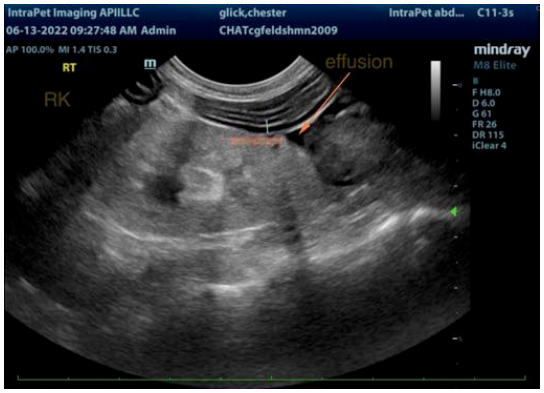
Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required depending on the patient's history.

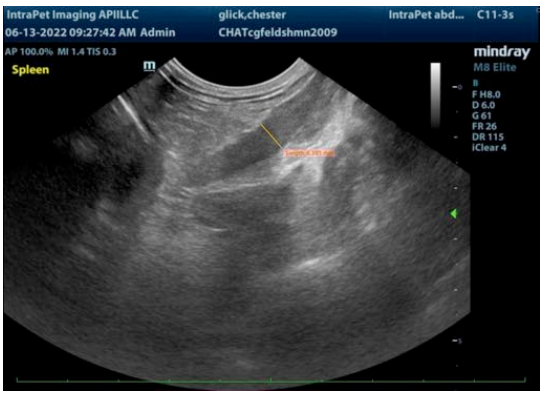
Cholecystitis, including a secondary ascending bacterial infection, cannot be excluded. Although indiscriminate use of antibiotics is not normally recommended, one could start treatment with a broad-spectrum antibiotic if an improvement is not observed with the above therapies.

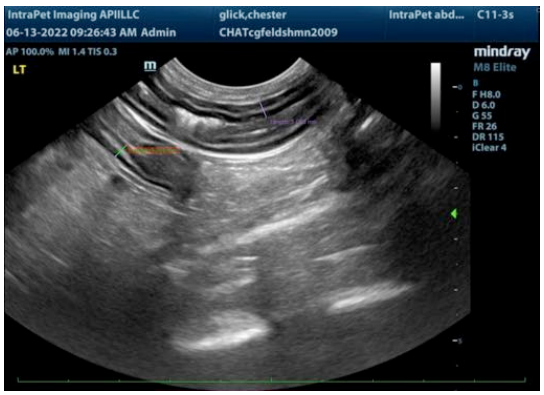
A synbiotic and a clay based paste, containing montmorillonite, are suggested to help treat the diarrhea.

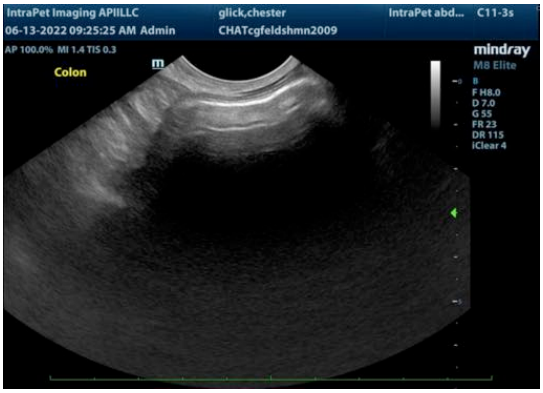
If further diagnostics are not pursued, although not ideal, empirical treatment for lymphoma or severe inflammatory bowel disease is suggested. For example, prednisolone (1 mg/kg/day), and then tapered to the minimum effective dose.







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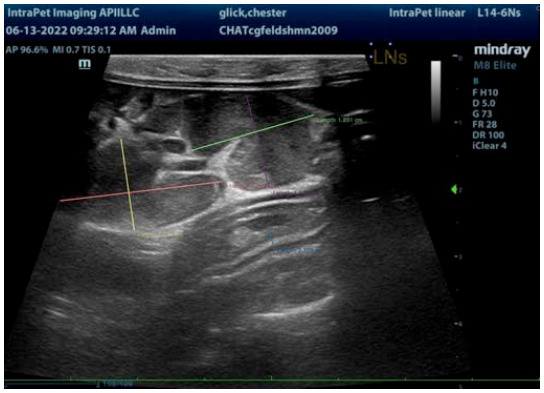
M8 Elite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LNs
mindray
M8 Elite


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IntraPet linear L14-6Ns
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mindray
M8 Elite
Dist 0.27 cm


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RT
Dist 3.54 cm
free fluid
mindray
M8 Elite


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UB - sediment
colon
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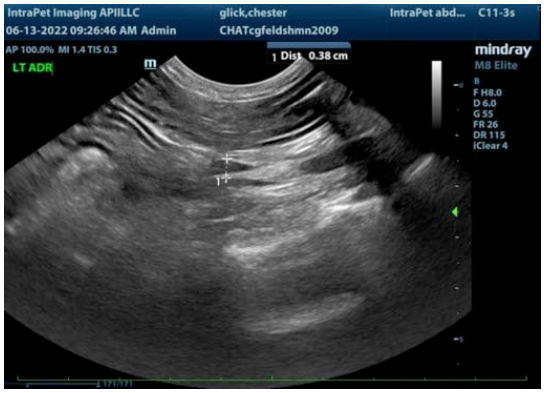
IntraPet Imaging APIILLC
glick,chester
IntraPet abd... C11-3s
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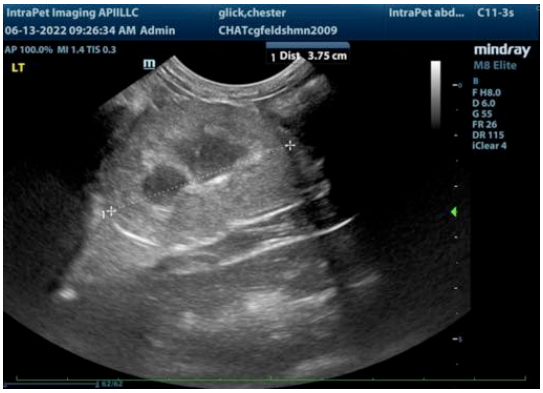
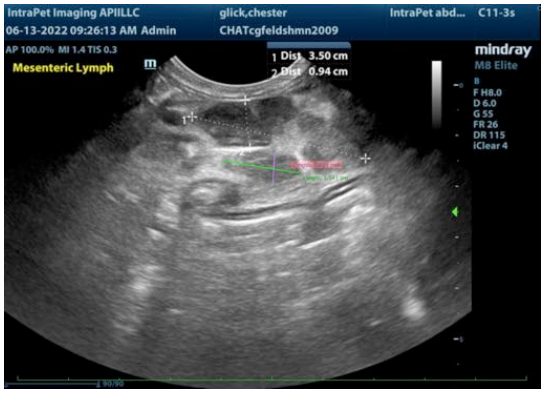
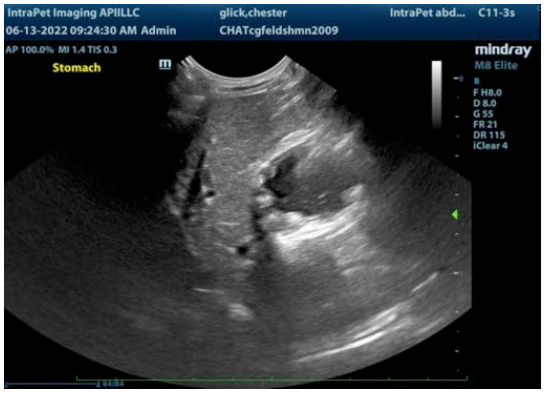
LT ADR
Dist 0.38 cm
mindray
M8 Elite







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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM
Lisa.Carioto@sonopath.com