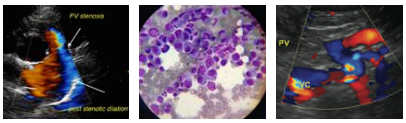
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE
6/30/22

PATIENT
Lucy Reinhart

SPECIES
Feline

BREED
Domestic Shorthair

SEX
Spayed Female

AGE
5/25/11

WEIGHT
5.63 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

HOSPITAL NAME
Charm City Vet

REFERRING VET
Dr. Karbonik

INVOICE
31377

PRESENTING CLINICAL SIGNS

Seen 6/13/22 for vomiting every other day fort he past 2+ months. Good appetite. On PE- p has lost 2.5lbs since 9/2021 and has a grade 3/6 heart murmur.
Current Medications: Methimazole 2.5mg BID.
Lab Results: Inc T4, FT4, Bili, ALT and ALKP.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Stephanie Pearce RDCS, RVT.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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

Kidneys

The **left** kidney measures 3.40 cm (3.80-4.40 cm). The capsule is smooth. The cortex is hyperechoic, i.e., it is hyperechoic to the spleen. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 3.68 cm (3.80-4.40 cm). The capsule is smooth. The cortex is hyperechoic, i.e., it is hyperechoic to the liver. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

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 0.46 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 echotexture, and echogenicity. The capsule is smooth. Multiple, pinpoint, hyperechoic foci are scattered haphazardly throughout the parenchyma. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified. Size: 6.8 mm (normal = 10 mm), possible hypovolemia based on size.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and it is within normal limits in echogenicity (i.e., it is hypoechoic to the falciform fat). Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.

The gallbladder (GB) wall is within normal limits in thickness and echogenicity. A trivial amount of echogenic material is present within the GB, but is only visualized at one angle. 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 moderate amount of fluid and gas are present within the lumen of the stomach. It is therefore difficult to perform an in-depth evaluation. The muscularis and submucosa are mildly prominent and fogging of the muscularis is present. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness is variable; it is within normal limits to mildly thickened 0.29 cm. Although the definition of the wall layers is preserved segments of jejunum show a mildly prominent mucosa with fogging. No abnormalities are noted with the ileocecal colic junction. Abnormally dilated loops of bowel are not observed.

The colonic wall is not thickened and mural detail is considered normal. The colon is filled with fecal matter.

Pancreas

No abnormalities are observed with the architecture, contours, echogenicity or echotexture of the pancreas. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

Other

Lymph nodes A small gastric lymph node is observed in the region of the pylorus.
Abdominal effusion is not visualized.
Mesentery
The mesentery surrounding the medial aspect of the liver is moderately hyperechoic and the small intestines is mildly hyperechoic.

ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal (GI) tract:** Inflammatory changes are suspected, which may be due to a chronic enteropathy, such as inflammatory bowel disease, food intolerance, GI parasitism, dysbiosis, etc. Inflammation secondary to chronic vomiting may also be contributing to the changes observed. Neoplasia is considered much less likely, but cannot be excluded, for example, lymphoma or other round cell tumour.

- **Lymph nodes (LNs):** Gastric LN is mildly prominent, likely due to chronic vomiting, i.e., reactive hyperplasia.

- **Mesentery:** Hyperechogenicity of the mesentery surrounding the liver, stomach and small intestines is suggestive of steatitis due to chronic and ongoing inflammation.

- **Liver:** The absence of abnormalities does not exclude the presence of cholangitis/cholangiohepatitis, including a suppurative component. Hyperthyroidism and

gastrointestinal disease are likely contributing to the elevated ALT enzyme activity, however, hepatocellular damage is must be considered present based on the degree of elevation.

- **Gallbladder:** *Gallbladder sludge* is most likely clinically insignificant. Sonographic signs of cholecystitis are not appreciated.

- **Urinary bladder**: The **urine sediment** is most likely composed of mucus, crystalline material and exfoliated cells. The debris is likely clinically insignificant given the lack of inflammatory changes to the bladder wall, however, *findings should be correlated with clinical signs and a urinalysis.*

- **Kidneys**: Hyperechoic cortices of unknown etiology or significance. Glomerulonephritis or interstitial nephritis are possible differential diagnoses in older cats. Pyelonephritis cannot be excluded despite the absence of sonographic signs.

- **Spleen**: Possible hypovolemia based on size. The hyperechoic foci are most likely due to mineralization, although a combination of fat and mineralization are also possible.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

One may consider the following suggestions/recommendations

A urinalysis, urine culture and sensitivity

Continue methimazole for treatment of hyperthyroidism

Recheck serum biochemical profile, including a SDMA and arterial blood pressure 3-4 weeks after initiation of methimazole.

If signs of gastroesophageal reflux disease (GERD), consider 10-14 day trial with famotidine or omeprazole (0.7-1 mg/kg PO q12h)

Deworm (fenbendazole) depending on risk of exposure, including if Lucy lives with other pets who go outdoors

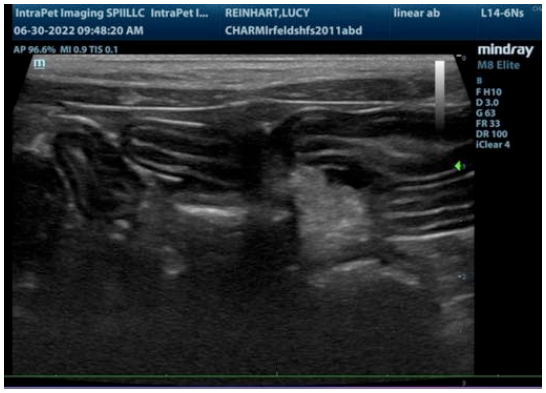
Dietary trial (veterinary prescription brand hypoallergenic, i.e., hydrolyzed or novel protein); ensure appetizing to prevent hepatic lipidosis. +/- psyllium to ensure adequate fibre for stool quality
Fine needle aspirates of the liver and culture of the liver and bile, pending coagulation profile results. Note, vitamin K (0.5 mg/kg SQ is suggested 30-45 minutes prior to the procedure, even if PT/PTT within normal limits.

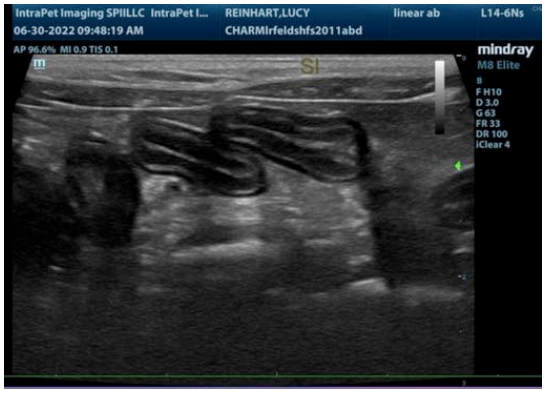
If fine needle aspirate declined; recall, cholestasis, cholangitis/cholangiohepatitis cannot be excluded, including secondary ascending bacterial infections from GI tract. Although indiscriminate use of antibiotics is not normally recommended, one could begin treatment with a broad-spectrum antibiotic and assess clinical response. *If a response is observed, continue antibiotics for a total of 4 to 6 weeks.
Endoscopy of the upper and lower GI tract would be the final step in the work up due to the vomiting and

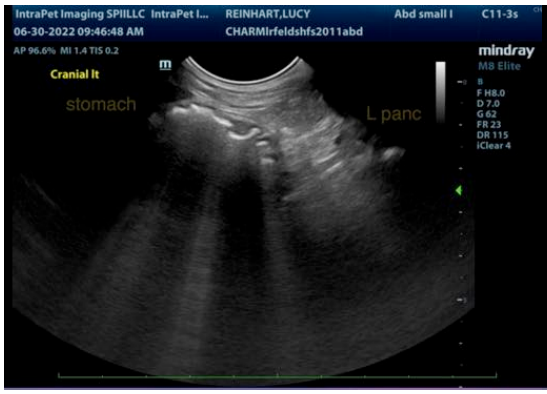
diarrhea, however, this may also occur due to cholangitis/cholangiohepatitis and cholecystitis. Another option, although much more invasive, would be to perform an exploratory laparotomy with biopsies (even if GI tract appears within normal limits). Biopsies of the liver and culture of the bile would also be performed.

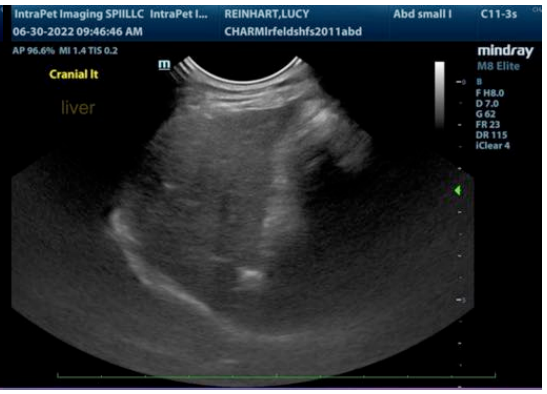
Although not ideal, empirical treatment with corticosteroids (IBD) may eventually be pursued depending on his response to the above treatment suggestions, if further diagnostics, such as endoscopy, are not pursued.

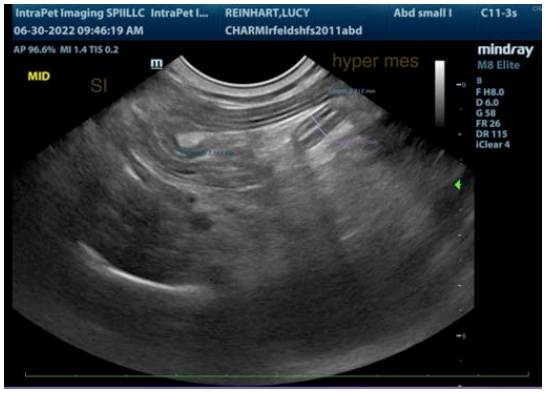
Note, investigation of heart murmur recommended prior to starting steroids. If declined, dexamethasone suggested instead of prednisolone.

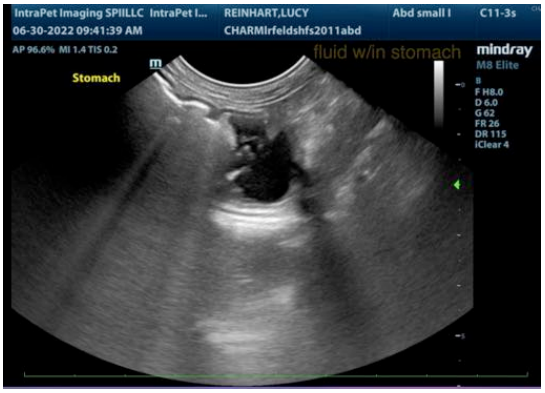


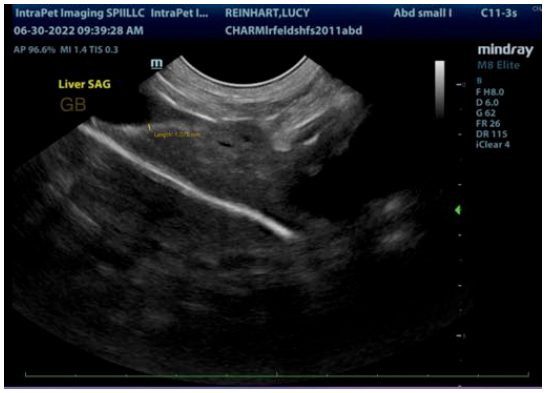








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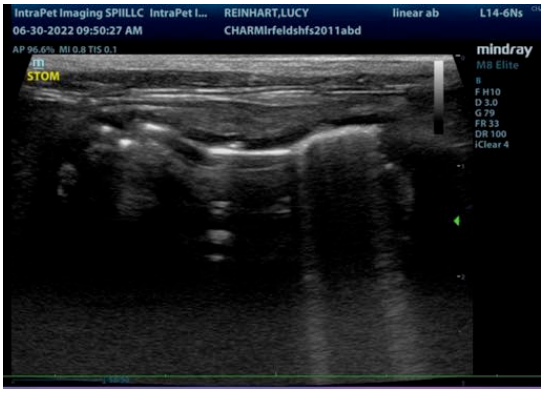
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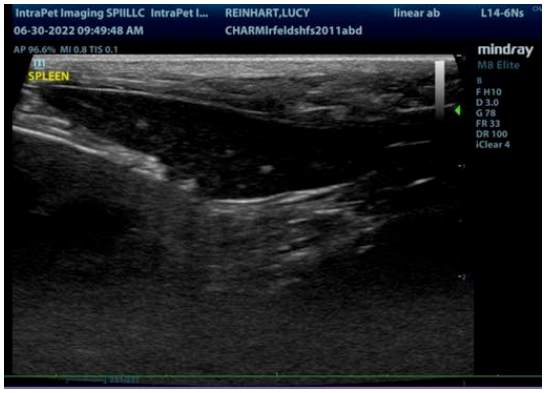
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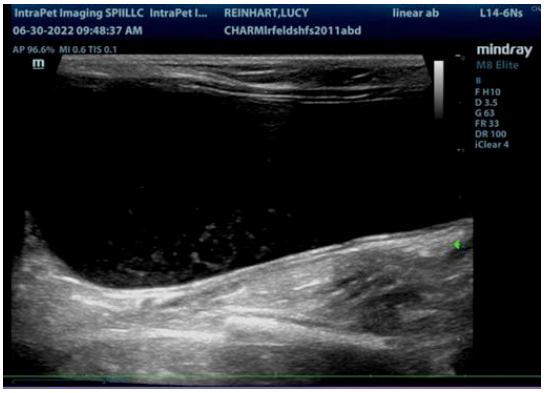
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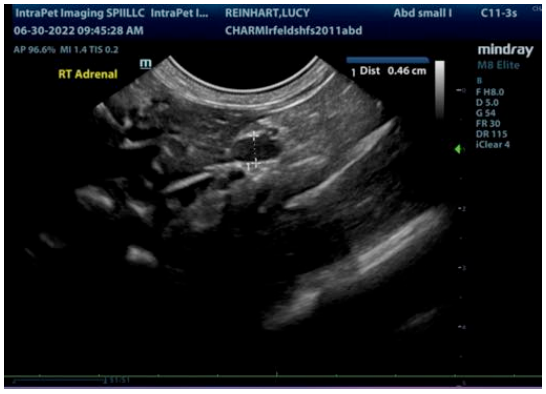
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RT Adrenal
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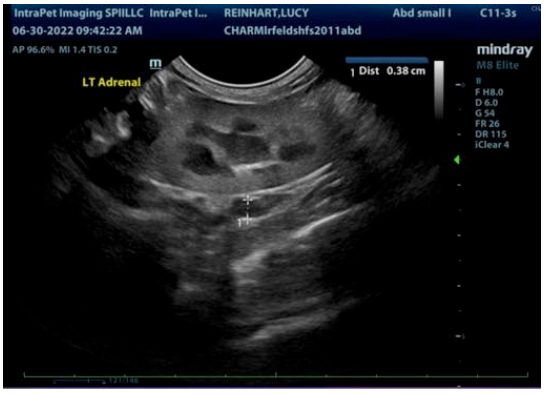
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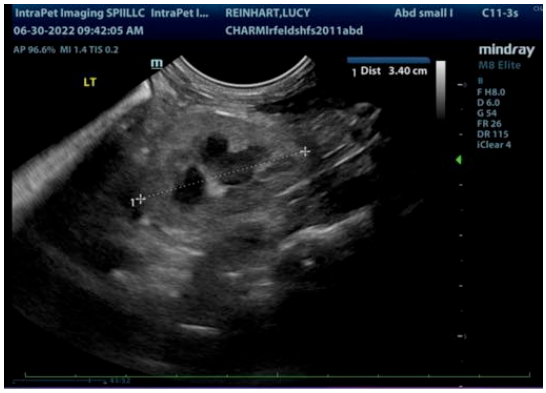

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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