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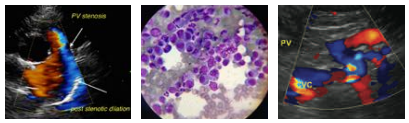

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE
6/30/22

PATIENT
Loki Stock

SPECIES
Feline

BREED
Domestic Longhair

SEX
Neutered male

AGE
3/11/15

WEIGHT
16.2 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

HOSPITAL NAME
Charm City Vet

REFERRING VET
Dr. Karbonik

INVOICE
31376

PRESENTING CLINICAL SIGNS

P has been vomiting for the past few weeks. Appetite is still good, no weight loss. No other symptoms. NSF on PE.
Current Medications: None.
Lab Results: CBC/Chem/T4 NSF.
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 adequately, but not fully distended. The wall is smooth and regular. A moderate amount of free floating and gravity dependent sediment is observed. The sediment is mobile and is seen "swirling" within the lumen. The echogenic structure located ventrally, in the region of the trigone, appears to be associated with the colon, rather than cystoliths. Polyps or a mass are not visualized. No obvious abnormalities are present with the trigone or proximal urethra.

Kidneys

The **left** kidney measures 4.38 cm (3.80-4.40 cm). The capsule is smooth. The cortex is hyperechoic, i.e., it is mildly hypo to isoechoic to the spleen. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. An accumulation of fat and very mild mineralization of the diverticulae and pelvis are noted, without signs of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 4.64 cm (3.80-4.40 cm). The capsule is smooth. The cortex is mildly hyperechoic. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.35 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 0.36 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. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified. Size: 6.1 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, however, it is mildly hyperechoic, i.e. it is hyperechoic to the falciform fat. Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.

The **gallbladder** wall is very mildly thickened at 1.4 mm and mildly hyperechoic. A small amount of 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 large amount of gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. The muscularis and submucosa are mildly prominent. Fogging of the muscularis is present. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Segments of jejunum show a mildly prominent mucosa with fogging. Fluid filled intestines are present. They also contain gas, however, abnormally dilated loops of bowel are not observed. No abnormalities are noted with the ileocecal colic junction.

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. It is isoechoic to the surrounding mesentery, i.e., signs of active pancreatitis are not present.

Other

Lymph nodes

A couple of lymph nodes are visualized in the region of the ileocecal colic junction. The mesentery surrounding the LNs is mildly hyperechoic compared to normal, however no abnormalities are observed with the lymph nodes.

Abdominal effusion is not visualized.

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): Mildly prominent in region of ileo-cecal-colic junction, but no signs of lymphadenomegaly. Reactive hyperplasia may be present or the mildly hyperechoic mesentery in the region is causing increased prominence of the LNs.

Liver: A vacuolar hepatopathy may be present, and/or cholestasis and cholangitis/cholangiohepatitis may be present. A suppurative component cannot be excluded. Furthermore, cholecystitis cannot be excluded based on the gallbladder findings.

Gallbladder: *Gallbladder sludge* is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested.

Treatment with an anti-acid or proton pump inhibitor may be required. Cholecystitis, including suppurative cholecystitis, may be contributing to Loki's vomiting.

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: Very mild, non-specific changes, which may not be clinically significant. A very mild interstitial nephritis cannot be excluded. Overt signs of pyelonephritis are not appreciated.

Spleen: Possible hypovolemia based on size, as well as the albumin, which is at the high end of normal reference range on blood work.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

One may consider the following suggestions/recommendations

Determine stool quality (fecal scoring chart) for history of diarrhea vs. constipation. Vomiting may occur with constipation due to gastro-colic reflex. If constipated, PEG 3350 (Restoralax or Lax-A-Day) may be used to decrease constipation or add psyllium to diet.

A urinalysis, urine culture and sensitivity

TLI, serum cobalamin, and folate, to assess for underlying maldigestion and malabsorption disease and dysbiosis

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.

Cholestasis, cholangitis/cholangiohepatitis and cholecystitis cannot be excluded, including and secondary ascending bacterial infections. 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.

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

Deworm (fenbendazole)

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
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.


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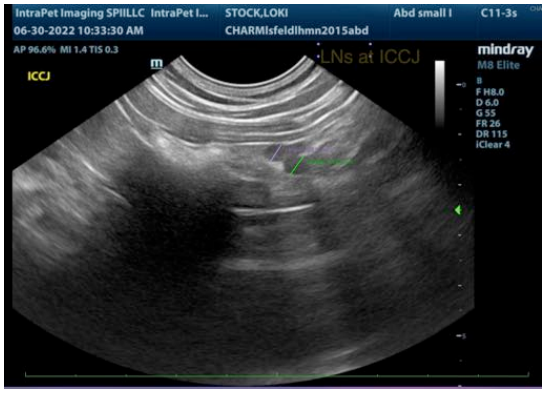
mindray
M8 Elite
SI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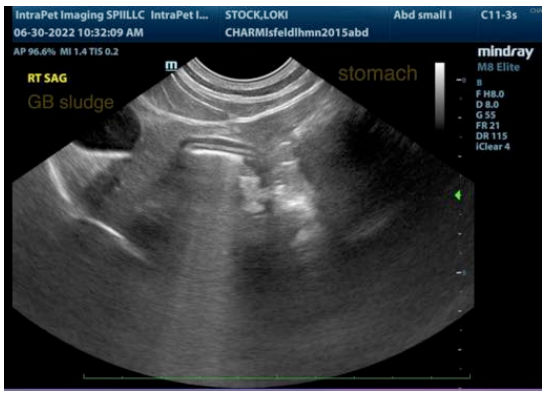
ICCJ
LNs at ICCJ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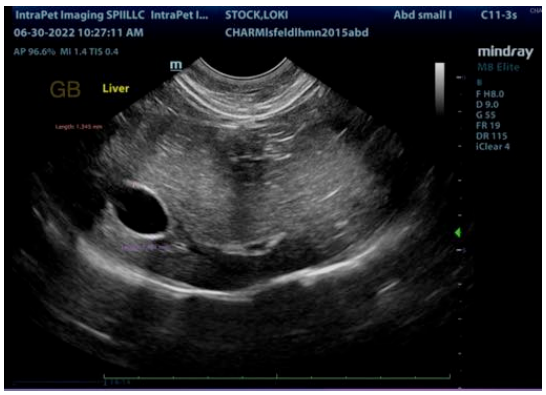
RT SAG
GB sludge
stomach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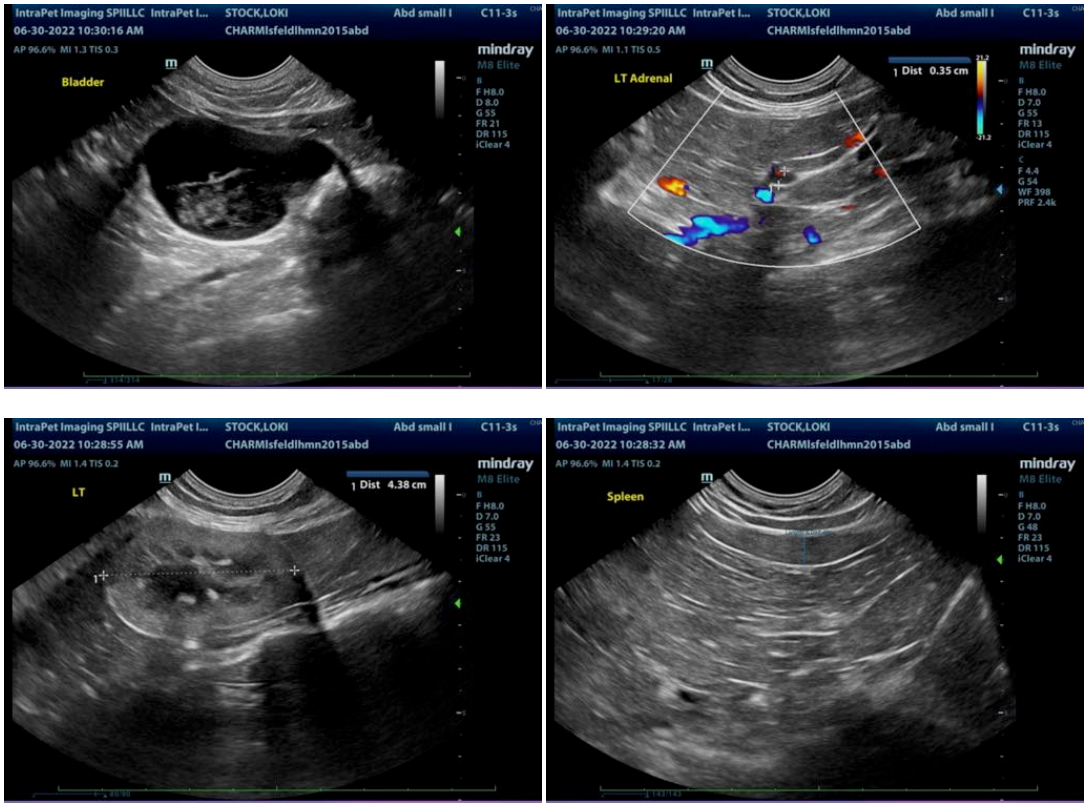
06-30-2022 10:27:11 AM CHARMIsfeldlhmn2015abd
AP 96.6% MI 1.4 TIS 0.4
mindray
M8 Elite
GB
Liver


IntraPet Imaging SPIILLC IntraPet I... STOCK,LOKI Abd small I C11-3s
06-30-2022 10:31:34 AM CHARMIsfeldlhmn2015abd
AP 96.6% MI 1.4 TIS 0.2
mindray
M8 Elite
RT Adrenal
1 Dist 0.36 cm


IntraPet Imaging SPIILLC IntraPet I... STOCK,LOKI Abd small I C11-3s
06-30-2022 10:31:04 AM CHARMIsfeldlhmn2015abd
AP 96.6% MI 1.4 TIS 0.2
mindray
M8 Elite
RT
1 Dist 4.64 cm



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.

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