



PATIENT

Gaia Cintron

SPECIES

Feline

BREED

DLH

SEX

Spayed Female

AGE

6 Years

WEIGHT

13 Pounds

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

**IMAGING
PERFORMED BY**

Dr. Gabriel Ferrer, DVM

HOSPITAL NAME

Pulse Pet Ultrasound
Services

REFERRING VET

Dr. Blanca Colon

INVOICE

16184

DATE

6/17/22

PRESENTING CLINICAL SIGNS

History: Gaia presented on May 13, 2022 for evaluation of chronic vomiting and constipation. PT had episode of constipation last Dec 2021. Pt has been vomiting almost daily for over 1 month. Vomiting is mainly during the night time/early morning. Hairballs and then yellow fluid. PT otherwise has good attitude and eating well. No hx of diarrhea. O gives laxation EOD. Pt was diagnosed with otitis and sent home Otomax. Pt was given: RC Feline hydrolyzed protein, cerenia inj, famotidine inj To take home: Ondasetron and famotine SID.

Abnormal PE/Chem/CBC/UA Results: PE: BAR T: 102.5F Abdominal palpation showed soft abdomen and no obvious pain or discomfort and colon appeared empty. Moderate size urinary bladder. Suspect mesenteric lymphadenomegaly. BW: CBC: unremarkable Chem: Phosphorus 2.5 (3.1-7.5) Potassium: 3.3 (3.5-5.8) Rest of Chem was wnl Fecal: NPS No U/A has been done yet.

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 to moderate amount of free floating and aggregated sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 3.62 cm (3.80-4.40 cm). The capsule is very mildly irregular. 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.

The **right** kidney measures 3.63 cm (3.80-4.40 cm). Findings are similar to the left kidney.

Note, both kidneys are mildly decreased in size compared to the normal reference range, however, this may be normal for Gaia as both kidneys are similar in size and architecture is within normal limits

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.31 cm at the cranial pole, 0.26 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 0.30 cm at the cranial pole, 0.33 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 10.0 mm (normal = 10 mm), architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver



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Mild hepatomegaly is suspected, however, this is better characterized at the time of the ultrasound or with radiographs. The liver's borders are smooth and sharp. It is mildly hyperechoic, i.e., it is hyperechoic to the falciform fat and is isoechoic to the spleen. Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.

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The gallbladder (GB) wall is within normal limits in thickness and echogenicity. 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.

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Gastrointestinal

A moderate amount of gas and a small amount of liquid are present within the lumen. The gastric wall is within normal limits in thickness and the wall layers are well defined. However, the submucosa is very prominent to thickened. No obvious abnormalities are observed with its peristalsis.

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Duodenum: Wall thickness and the definition of the wall layers is preserved, however, fogging of the mucosa is present.

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Jejunum: Wall thickness and the definition of the wall layers are within normal limits, however, fogging of the mucosa is present and the muscularis appears prominent.

No abnormalities are observed with the ileocecal colic junction.

Abnormally dilated loops of bowel are not observed.

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Gas is present within the transverse (0.11 cm) and ascending colon (0.13 cm); WNL.

The colonic wall is not thickened and mural detail is considered normal. Formed stools are present within the colon.

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Pancreas

The left and right limbs are, subjectively, very mildly hypoechoic and the surrounding mesentery is mildly hyperechoic. There are no signs of neoplasia.

Other

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Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal tract:** The intestinal abnormalities are highly suggestive of *inflammation*, which may be associated with a *chronic enteropathy*, such as inflammatory bowel disease and food intolerance, as well as dysbiosis. Inflammation secondary to chronic vomiting is also likely playing a role in the changes observed. A foreign body is not observed. Note, IBD may also cause constipation.

- **Liver:** *Cholangitis/cholangiohepatitis and cholestasis*, as well as a secondary ascending bacterial infection from the GI tract are possible differential diagnoses.

- **Gallbladder:** Obvious signs of cholecystitis are not appreciated. *Gallbladder sludge* is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some

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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. There does not appear to be a sufficient amount of sludge to warrant treatment with ursodeoxycholic acid.

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- **Pancreas:** A low grade, smoldering pancreatitis, cannot be excluded. Overt signs of neoplasia are not appreciated.

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- *Note, based on the above findings, "triaditis" must be considered as a cause of Gaia's clinical signs of vomiting.*

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- **Urinary bladder:** There are no signs of cystoliths. The free floating sediment 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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

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A urinalysis, +/- urine culture and sensitivity

+/- Spec fPL

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Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required. There does not appear to be a sufficient amount of sludge to warrant treatment with ursodeoxycholic acid.

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

Deworm depending on risk of exposure, including other pets in house that go outdoors

Fibre supplementation to Gaia's current diet, or one could try Hill's Biome or equivalent diet

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If vomiting persists, dietary trial (veterinary prescription brand hypoallergenic, i.e., hydrolyzed or novel protein)

Depending on how proactive the clients would like to be, can then consider the following

fine needle aspirates of the liver, pending coagulation profile, or

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

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Cholestasis, cholangitis/cholangiohepatitis 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.

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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. Another option, although much more invasive, would be to perform an exploratory laparotomy, at which point hepatic and pancreatic biopsies are also suggested.

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Note, A single dose of vitamin K (0.5 mg/kg SQ is suggested 30-45 minutes prior to the procedure, even if PT/PTT within normal limits.

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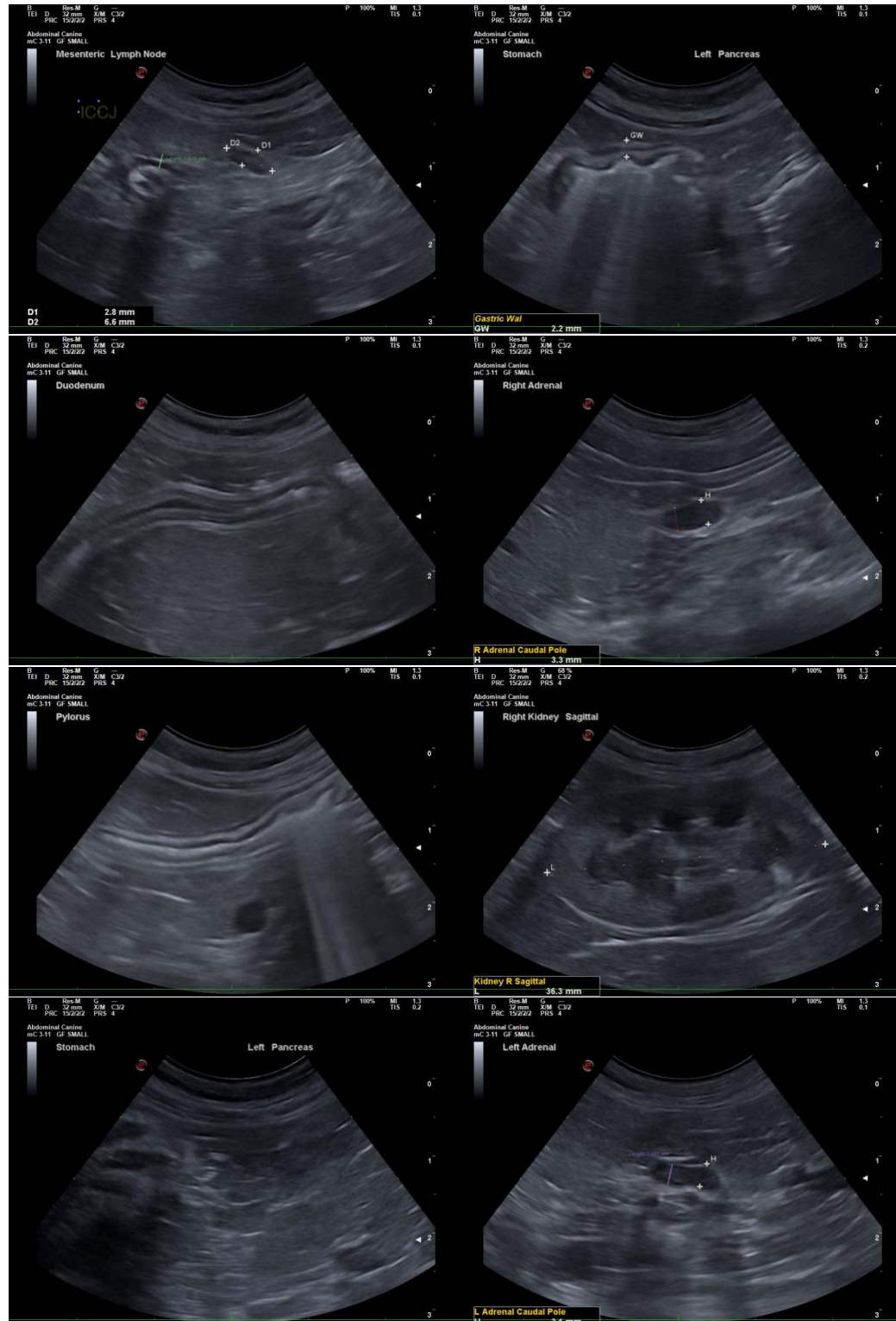
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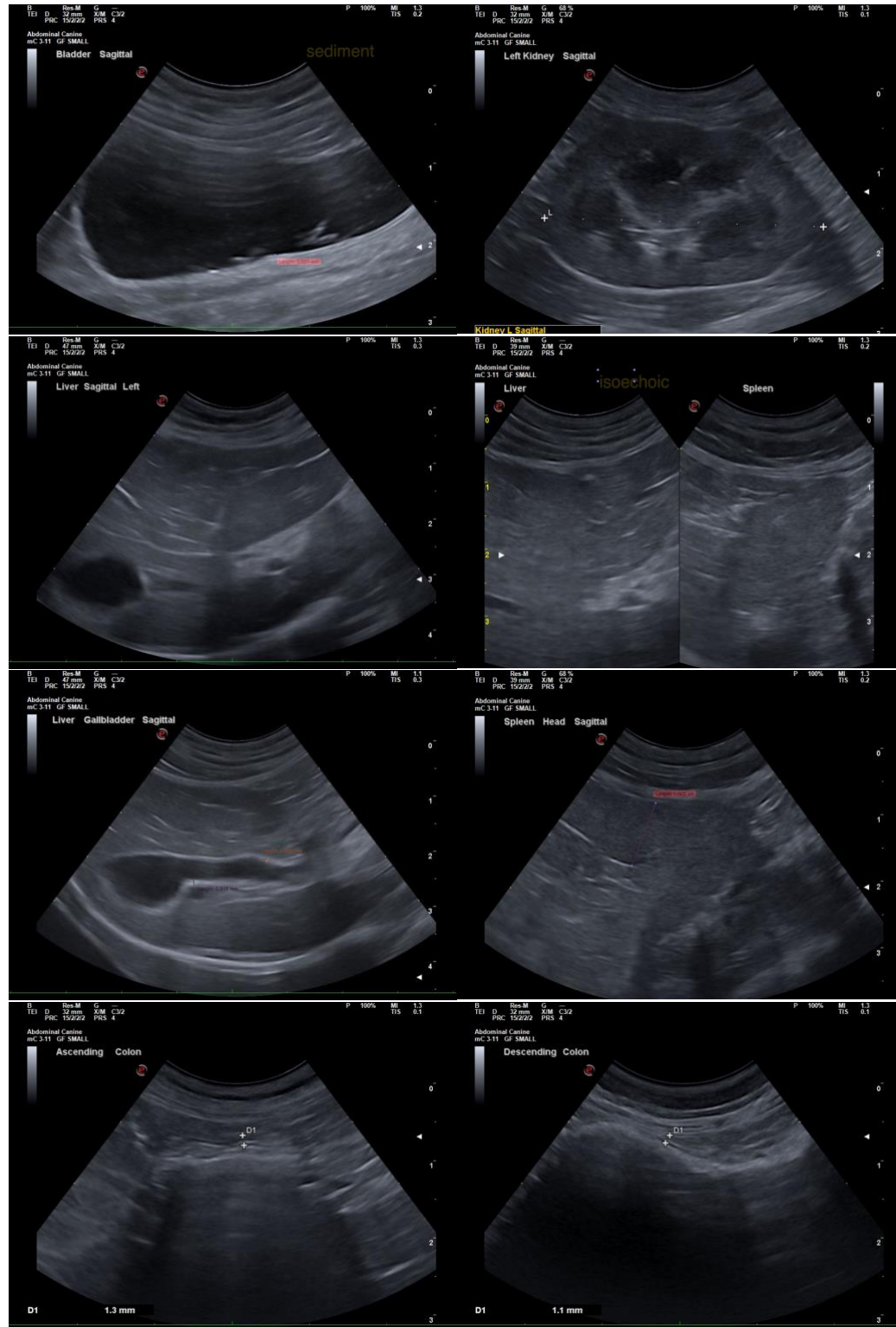
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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