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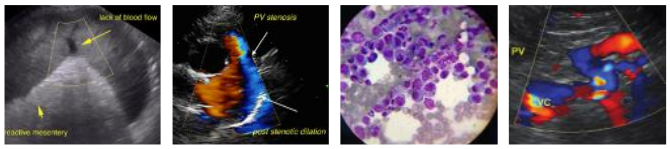


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Maizie Totaro

SPECIES
Canine

BREED
Mixed

SEX
Spayed Female

AGE
2 Years

WEIGHT
43 Pounds

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Dr. Tam Mengine

HOSPITAL NAME
Stoney Creek VH

REFERRING VET
Dr. Tam Mengine

INVOICE
37457

DATE
5/6/22

PRESENTING CLINICAL SIGNS

Presented 5/5 with 24 hr history of vomiting (numerous times) and a single episode of melena that contained palm plant. CBC / Chem / CPL all unremarkable. Treated with cerenia and SQ fluids. Has continued to be anorexic and extremely lethargic, and had one more episode of vomiting last night. Physical exam unremarkable, no painful reaction to probe anywhere

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is inadequately filled, thereby affecting the ability to accurately measure wall thickness. The wall is smooth and regular. There is no evidence of sediment, cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 6.11 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, despite Fynlee's young age. Some of the mineralizations cast shadows, i.e., very small nephroliths are noted. There is no evidence of pyelectasia. The surrounding mesentery is mildly to moderately hyperechoic, but appears to be associated primarily with the gastrointestinal tract.

The **right** kidney measures 6.56 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, despite Maizie's young age. There is no evidence of nephroliths or pyelectasia. The surrounding mesentery is hyperechoic, but appears to be associated primarily with the gastrointestinal tract.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.41 cm at the cranial pole, and 0.40 cm at the caudal pole. The gland appears slightly flatter than usual, however, no abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature are unremarkable. The mesentery surrounding the gland is mildly hyperechoic.

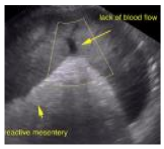
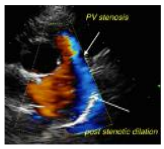
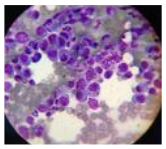
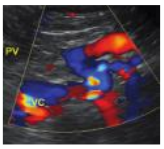
The **right** adrenal gland measures 0.47 cm in diameter. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver is mildly hyperechoic, i.e., it is isoechoic to the spleen. Its echotexture is homogeneous. Focal lesions are not visualized. No abnormalities are observed with the hepatic vessels visualized.

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The gallbladder wall is very mildly thicker than normal (1.8 mm) and mildly hyperechoic. There is no evidence of echogenic material within the GB, however the hepatic parenchyma surrounding it is severely hyperechoic which is suggestive of inflammation. There are no signs of edema surrounding GB. The small portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction. An in-depth evaluation of the cystic and common bile ducts is not possible due to the severe ileus in the surrounding GI tract.

Gastrointestinal

A moderate to marked amount of gas and fluid, as well as a moderate amount of ingesta, are present in the fundus and pylorus. Decreased peristalsis, consistent with an ileus, is observed. Furthermore, the surrounding mesentery is moderately to severely hyperechoic, which is suggestive of steatitis. No abnormalities are observed with the definition of the individual wall layers. The ingesta within the lumen of the stomach may be food and/or plant material

The duodenum measures 0.34 to 0.57 cm. A small to moderate amount of gas and fluid are present within the lumen, as well as echogenic ingesta. Fogging and stippling of the mucosa is present, which are suggestive of inflammation. The surrounding mesentery is hyperechoic.

Jejunum: within normal limits in thickness

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed.

The colonic wall is not thickened (0.16 cm) and mural detail is considered normal.

The mesentery surrounding the small intestines is moderately to severely hyperechoic. It is severely hyperechoic in the right cranial abdomen.

There are no signs of an obstruction.

Pancreas

The **left** and **right limbs** are very mildly hypoechoic. The surrounding mesenteric fat is mildly to moderately hyperechoic, suggestive of saponification. These findings are suggestive of active pancreatitis, despite the negative SNAP cPL.

Other

Lymph nodes

Multiple mesenteric lymph nodes (LNs) are mildly enlarged and hypoechoic 0.97 cm in diameter x 3.54 cm in length (see images, below for measurements).

The mesentery surrounding the lymph nodes is moderately to severely hyperechoic.

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- The hepatic abnormalities observed are most likely due to a vacuolar hepatopathy secondary to stress and vomiting, as well as possible cholangitis/cholangiohepatitis secondary to ingestion of the palm plant. Hepatotoxicity is also possible.
- The gall bladder abnormalities are suggestive of cholecystitis, which is consistent with irritation and inflammation secondary to vomiting following the ingestion of a toxic plant.

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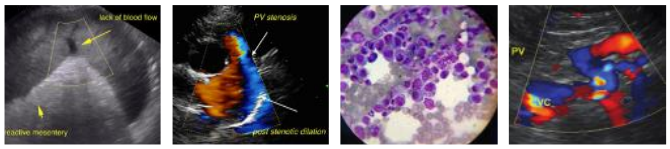

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- The gastrointestinal abnormalities, including diffuse hyperechogenicity of the omentum (mesentery), are consistent with an ileus of the stomach and duodenum and steatitis. The steatitis is most likely due to the GI inflammation and irritation, as well as the inflammation of the hepatobiliary system.
- The lymphadenomegaly of the mesenteric lymph nodes is attributed to reactive hyperplasia secondary to the gastrointestinal inflammation.
- Early signs of pancreatitis may be developing despite the negative SNAP cPL.
- Renal changes may be due to glomerulonephritis or interstitial nephritis associated with ingestion of a palm plant. The mild mineralization may be normal for Maizie or it may be diet related an evaluation of her diet is suggested.
- The adrenal glands are slightly flatter compared to what is considered normal, however, they are within the normal reference range. Further diagnostics (baseline cortisol) is not required providing Maizie does not have a history of vomiting, diarrhea, lethargy, polydipsia or polyuria prior to ingestion of the palm plant.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Intravenous fluids are strongly recommended. If this is not possible, subcutaneous fluids administered at home once to twice a day is recommended for at least 5 days.

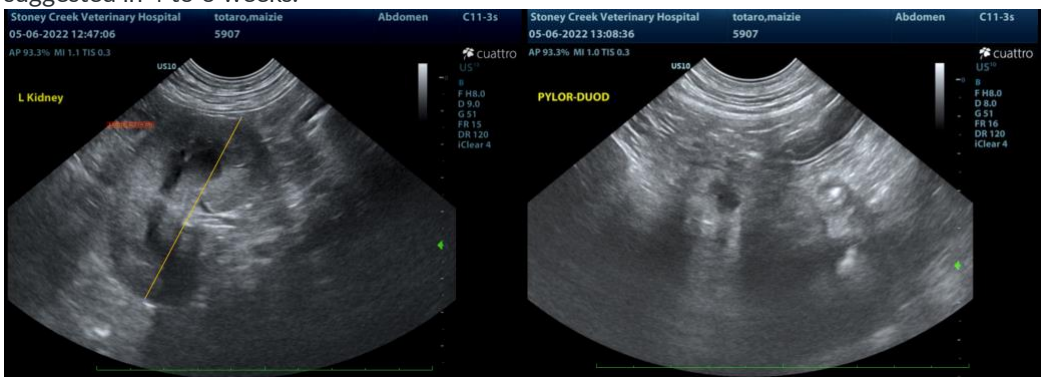
Maropitant (Cerenia), in addition to ondansetron, are strongly recommended to help decrease nausea, and prevent further vomiting episodes. If both treatments are cost prohibitive, ondansetron is suggested.

A hepatoprotectant that consists of SAM-e, silybin, vitamin E and vitamin Bs is strongly recommended for at least 14 days.

A gastroprotectant clay based paste, which contains montmorillonite, is suggested to help the GI mucosa and microbiome. For example, Grey Wolf Animal Health Entero Aid GI.

An easily digestible diet is suggested for 5 to 7 days.

A urinalysis is suggested to evaluate Maisie's urine specific gravity (USG) and ensure there is no excessive proteinuria. It may be difficult to assess the severity of proteinuria due to systemic inflammation, however, it is prudent to obtain a baseline urinalysis or at the very least, a USG (first morning sample). If finances are a concern, an evaluation of a baseline urine protein: creatinine ratio is suggested in 4 to 6 weeks.



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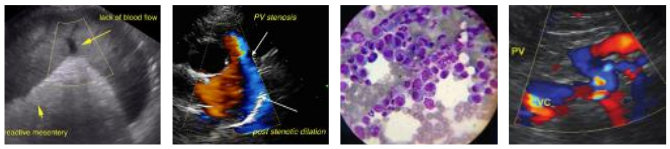

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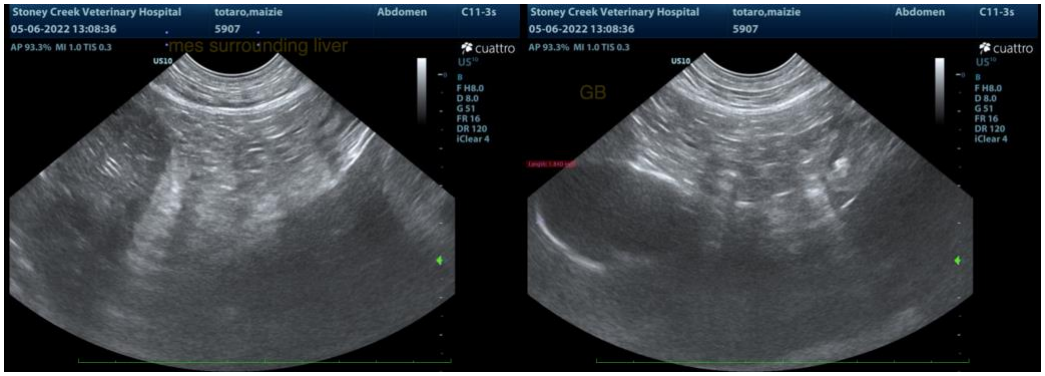

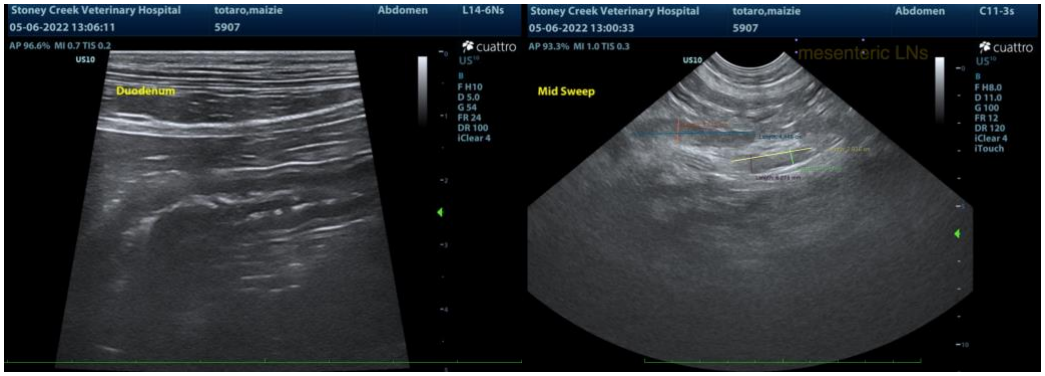

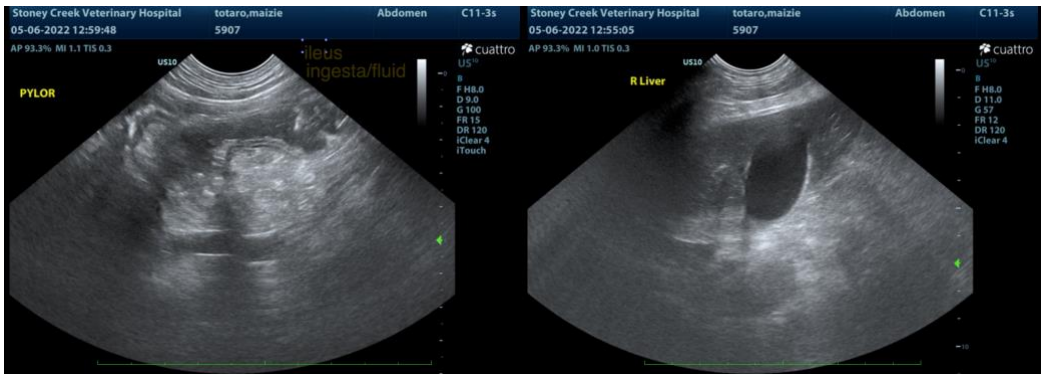

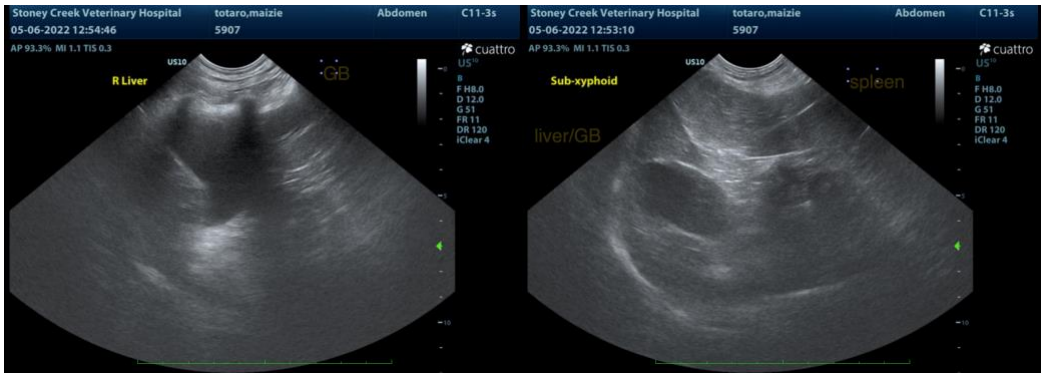

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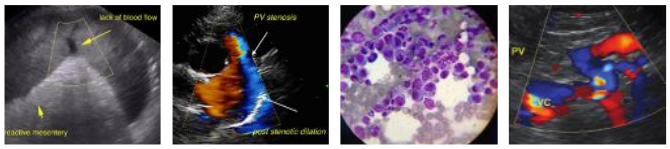

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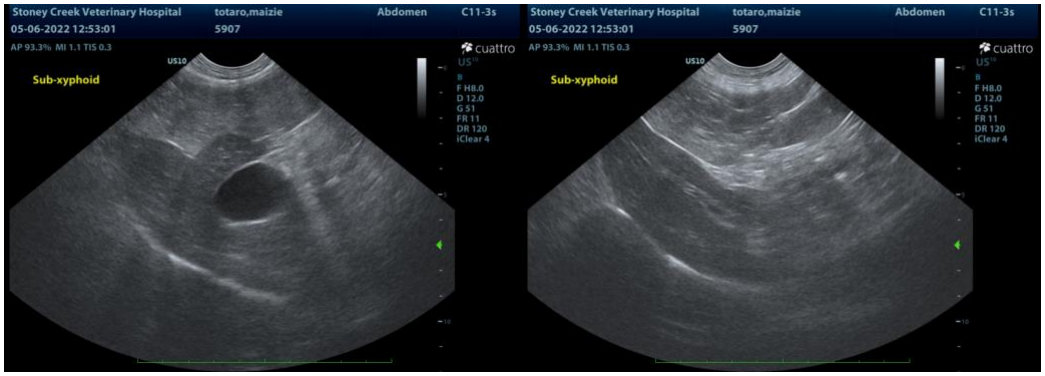

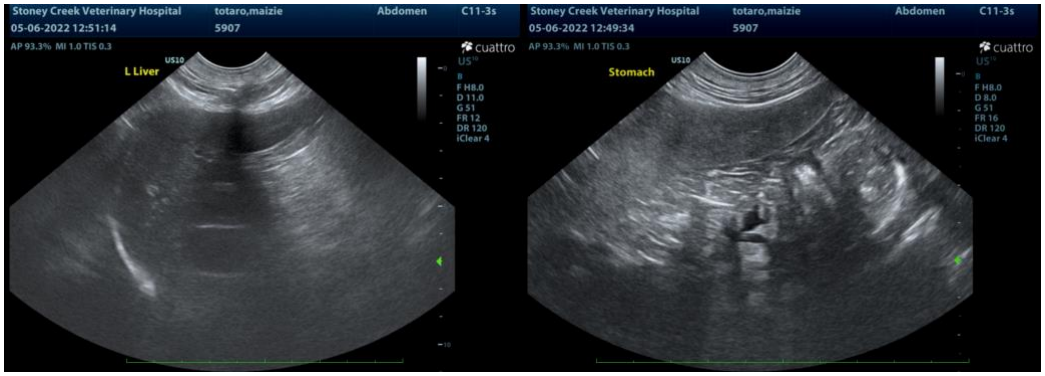

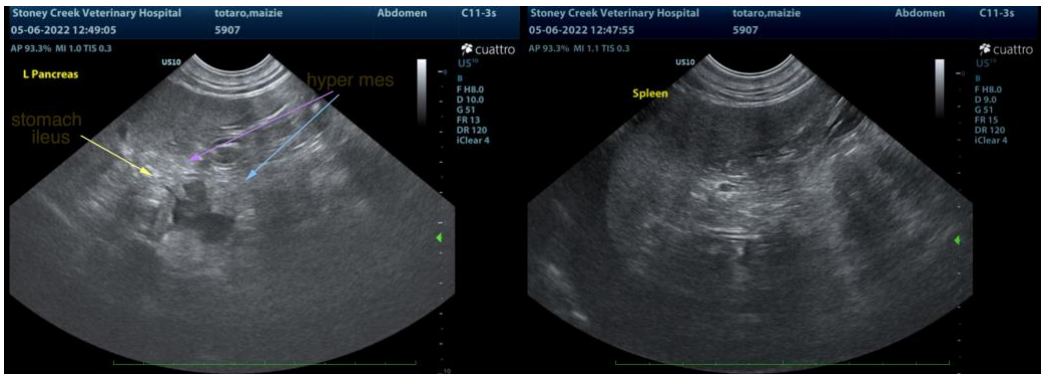

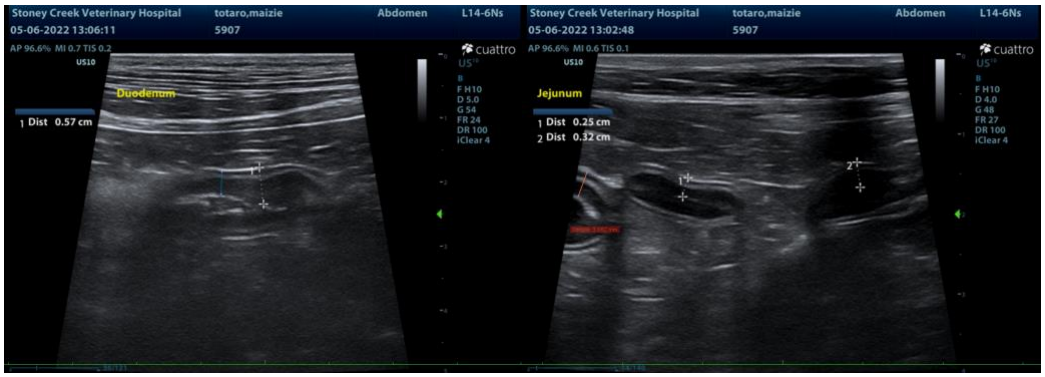

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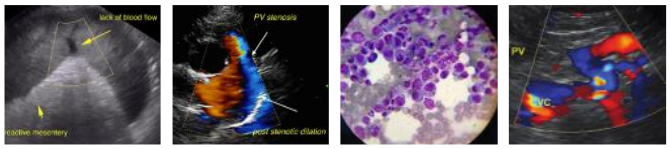

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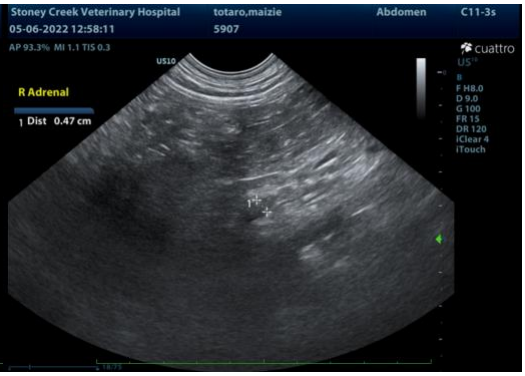

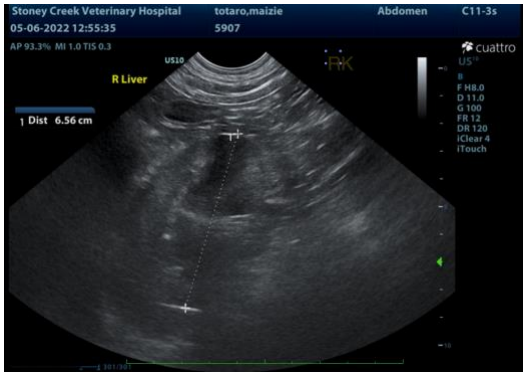

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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