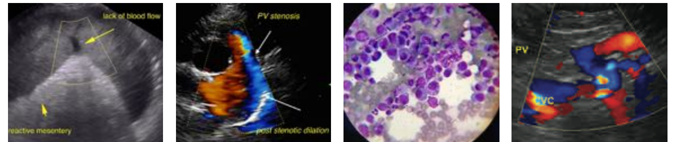


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Charlie Hughes

SPECIES

Canine

BREED

Border Collie Mix

SEX

Neutered male

AGE

7 years

WEIGHT

45.4 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Kelly Vazquez , CVT

HOSPITAL NAME

Westwood Regional VH

REFERRING VET

Dr. Hartwick

INVOICE

31091

DATE

6/20/22

PRESENTING CLINICAL SIGNS

Hospitalized for several days for moderate to severe pancreatitis. Despite aggressive treatment, blood work worsening. Patient eating a little. No vomiting since admit, diarrhea controlled. Abdomen now soft and appears comfortable. Concern for necrotizing pancreatitis. Treatments: IVFs - LRS with B Complex, Unasyn TID, Baytril SID, metronidazole BID, metoclopramide TID, Cerenia, famotadine, buprenorphine PRN.
Abnormal PE/Chem/CBC/UA Results: 6/18: CBC= WBC 26.79, neutrophillia, monocytosis. Chem= ALT 228, Alk. Phos >2000, GGT 13, T. bili 0.6. 6/19: WBC = 21.07. Chem: ALT 433, Alk. Phos elevated, GGT 24, T. bili 2.6.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

Prostate

The prostate is homogenous and measures 1.10 cm; within normal limits for a neutered male.

Kidneys

The **left** kidney measures 5.97 cm. The capsule is smooth. 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 6.05 cm. 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

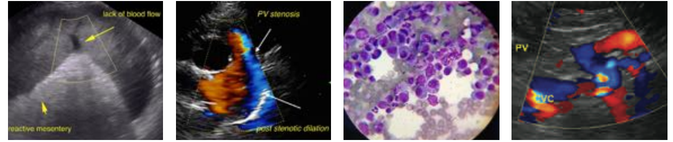
No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.67 cm at the cranial pole, 0.48 cm at the caudal pole and 2.16 cm in length. 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 1.10 cm at the cranial pole, 0.73 cm at the caudal pole and 2.35 cm in length. The cranial pole is enlarged and rounded. The caudal pole is at the high end of the normal reference range. No abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen



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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

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 vary between sharp to mildly rounded. It is diffusely hyperechoic, with a diffuse, mildly coarse or granular echotexture. No abnormalities are observed with the hepatic vessels visualized.

The gallbladder wall is within normal limits in thickness and echogenicity. There is no evidence of echogenic material within the GB or edema surrounding it. The cystic duct is not dilated or tortuous, i.e. there are no signs of an obstruction.

Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis. No abnormalities noted with the gastro-esophageal sphincter. The parenchyma surrounding the stomach is hyperechoic.

Duodenum 0.45 cm; WNL. Mild fogging of the mucosa is present. A moderate amount of ingesta is present in the duodenum, with mildly decreased peristalsis, i.e. a "to and fro" motion is observed. An ileus is noted.

The small intestinal wall thickness 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 and mural detail is considered normal.

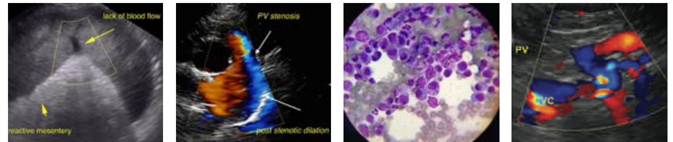
There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

Pancreas

Active pancreatitis is evident. The pancreas is moderately to severely enlarged with irregular borders. It is diffusely hypoechoic, but also has a mildly coarse echotexture, with pinpoint to punctate hyperechoic foci scattered throughout the parenchyma. A scant amount of effusion between the liver, right kidney, duodenum and pancreas. The pancreatico-duodenal duct is not dilated. The mesentery surrounding the pancreas is severely hyperechoic. Furthermore, the mesentery surrounding the duodenum and right limb of the pancreas also appears edematous. The coarse echotexture of the pancreas is attributed to age-related changes and fibrosis, likely due to previous episodes of pancreatitis, mineralization and/or amyloid deposition. Obvious signs of neoplasia are not appreciated.

Other

Lymph nodes



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No abnormalities are observed

Abdominal effusion

A small amount of anechoic fluid is visualized in the right cranial quadrant (see pancreas, above)

ULTRASONOGRAPHIC FINDINGS

- There are no signs of neoplasia on today's ultrasound.
- **Pancreas**: *Severe acute pancreatitis* – persistent sonographic changes. Abnormalities are relatively similar to mildly worse compared to the original ultrasound, however, it is not uncommon for the ultrasound changes to lag behind the clinical status of the patient. It can take many weeks for the sonographic signs of inflammation to resolve. There are no signs of an extrahepatic obstruction.
- **Liver**: Vacuolar and reactive hepatopathies suggestive of stress and chronic illness, such as pancreatitis. Cholestasis and hepatitis secondary to the severe pancreatic inflammation are also suspected, particularly when correlated with blood work results. Cholangitis/cholangiohepatitis and cholecystitis cannot be excluded. Neoplasia is considered highly unlikely.
- **Gastrointestinal tract**: Inflammation of the duodenum is observed, with a mild ileus.
- **Adrenal glands**: Mild hyperplasia of the right gland, without signs of neoplasia. Stress is suspected.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Ensure potassium is well within the normal reference range, as hypokalemia can contribute to poor GI peristalsis.

Analgesia increase analgesia to two to three times a day, even if does not appear painful. Gabapentin, +/- methadone

One or two doses of dexamethasone to help decrease the severe inflammation may be helpful (physiological dose) at 0.03 mg/kg once a day IV or SQ

Avoid NSAIDs (ischemia)

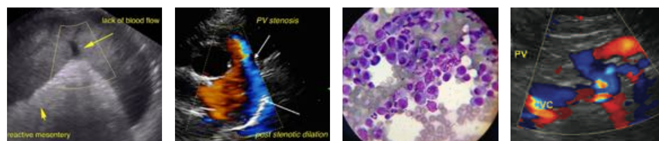
Fluid therapy (intravenous or oral) to maintain hydration

Metoclopramide as a CRI is suggested; much more effective than SQ.

Ondansetron instead of maropitant (Cerenia) to help decrease nausea.

Consider de-escalation of antibiotics to decrease nausea.

Bland, easily digestible, low fat, moderately restricted fibre diet is recommended to help decrease bloating and cramps.



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Small, frequent meals (4-6 per day)

Low fat diet will be required long term (less than 20 grams of fat/1000 kcal of food long term).

Time; most of these dogs need 2-4 weeks to recover. They do not necessarily have to be hospitalized during this time.

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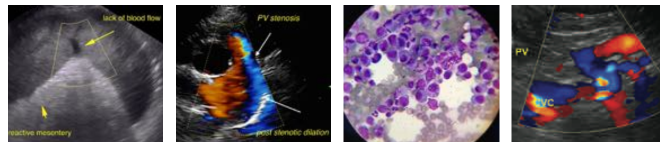

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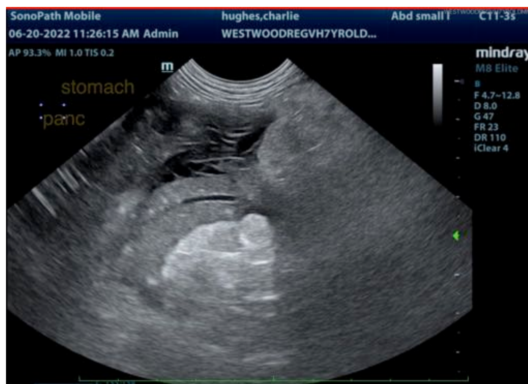

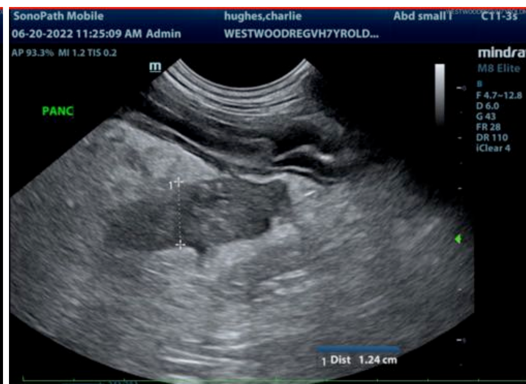

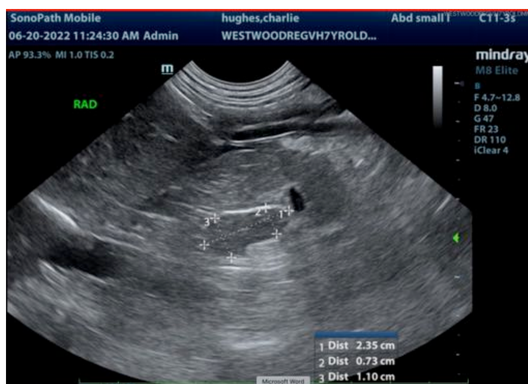

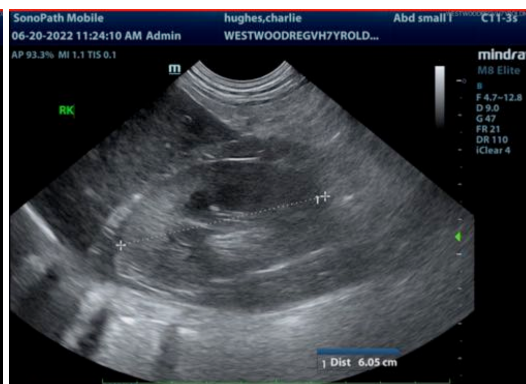

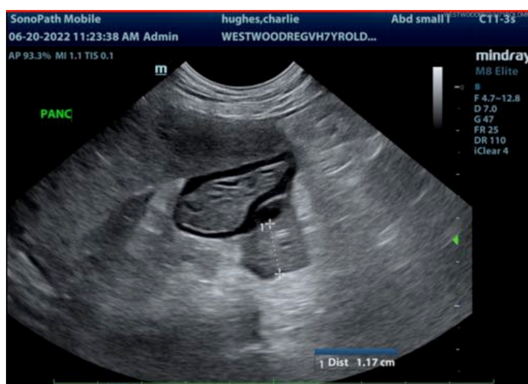

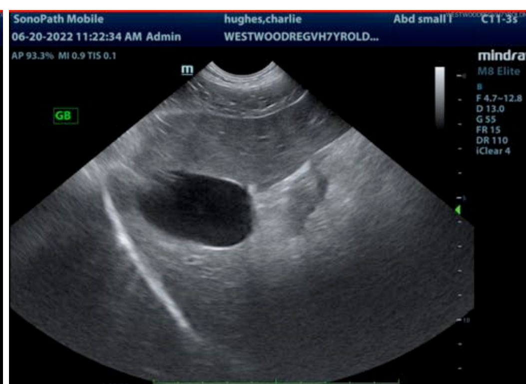

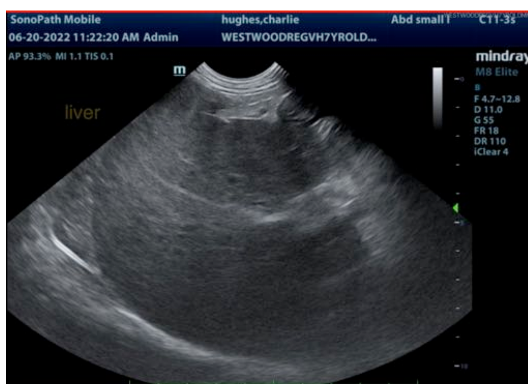

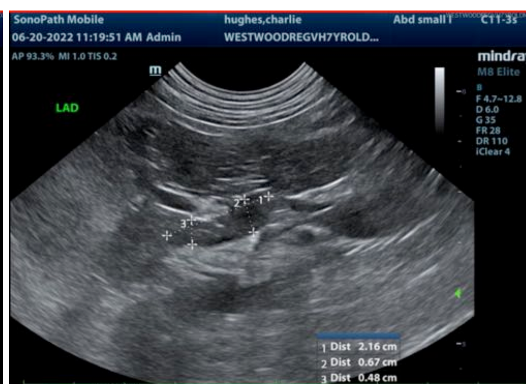

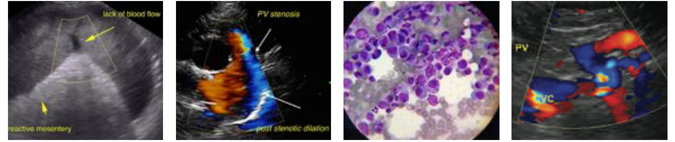

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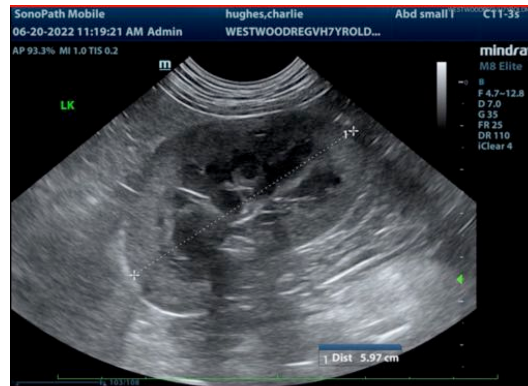

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com