SonoPath
Clinical Sonography & Telecytology
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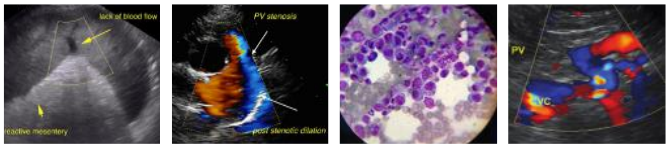

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Tapper Wilhalm

SPECIES

Canine

BREED

Border Terrier X

SEX

Neutered Male

AGE

15 years

WEIGHT

6 kg

INTERPRETED BY

Andrea Nicastro, DVM, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Dr Belan

HOSPITAL NAME

Alpine 24/7 AH

REFERRING VET

Dr Sargent

INVOICE

14093

DATE

8.14.23

SPRESENTING CLINICAL SIGNS

History: Presented for lethargy and diarrhea has a history of liver disease. Attending suspicious of concurrent heart disease as they saw peritoneal fluid on POCUS exam. Liver enlarged on x-ray.

Abnormal PE/Chem/CBC/UA Results: Moderate elevation of ALT, cholesterol and severe elevation of ALKP mild anemia as well

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder wall is normal in thickness. The mucosal surface in the region of the apex is slightly irregular. The bladder is mildly to moderately distended. Luminal contents are anechoic. No cystic calculi are observed. The region of the trigone and visible portion of the proximal urethra are normal.

The prostate is normal in size (0.87 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney is normal in size (4.13 cm in length) with a normal shape, architecture and smooth peripheral margins. The cortex is isoechoic relative to the spleen. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

The right kidney is normal in size (4.01 cm in length) with a normal shape, architecture and smooth peripheral margins. The cortex is isoechoic relative to the spleen. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

Adrenal Glands

One still image is available for interpretation. The left adrenal gland is normal in size (0.29 cm at cranial pole) (0.41 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is in normal size (0.41 cm at cranial pole) (0.38 cm at caudal pole) (xxx cm in length) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

The spleen is normal in size (0.66 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. Several irregular myelolipomas are observed in the region of the hilus. Splenic vasculature is normal.

Liver

The liver is subjectively normal in size with normal curvilinear peripheral contours. The parenchyma is hyperechoic relative to the spleen, and subtly heterogenous in appearance. A few, ill-defined hyperechoic nodules are observed (the largest measuring 0.97 cm in its longest dimension). Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1: 1.

The gall bladder lumen is moderately distended. The wall is thin and smooth. A small to moderate amount of aggregated, echogenic-to-mineralized debris/sludge is observed within the lumen (most of which is gravity-dependent and some of which is partially dependent). The cystic and common bile ducts are normal/not seen.

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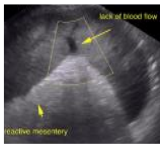
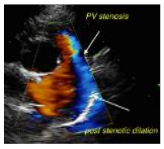
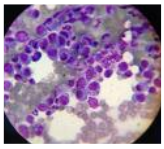
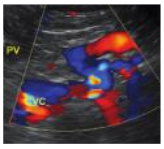

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Gastrointestinal

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall is normal in thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The left limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely hyperechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

Free Abdomen

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- The hepatic parenchymal changes are nonspecific and could be secondary to inflammatory disease (i.e., chronic hepatitis, bacterial cholangiohepatitis), hepatotoxicosis (i.e., copper), regenerative nodular hyperplasia, vacuolar hepatopathy, infiltrative neoplasia (less likely), other hepatopathy, or some combination thereof.
- Gallbladder debris/sludge, non-mucocele

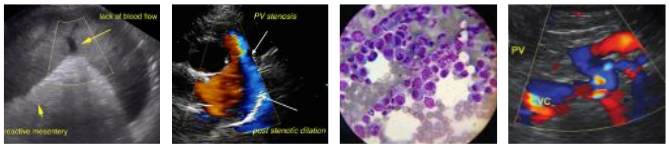
Secondary Findings

- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Bilateral chronic age-related renal changes

*An obvious cause for the patient's current clinical signs is not definitively identified in this study. Considerations include dietary indiscretion, infectious/parasitic disease, food allergy/intolerance, acute gastroenteritis, dysbiosis, inflammatory bowel disease, underlying metabolic issue, other.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Pre-and postprandial serum bile acids can be considered to assess hepatic function. s
- Cytologic evaluation of the liver should be considered in this patient if clotting status is appropriate. A fine needle aspirate using a 25-gauge needle is recommended. If cytologic evaluation is inconclusive, consider a surgical liver biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for copper quantitation.
- If a more conservative approach is desired, consider empirical treatment for cholangiohepatitis with amoxicillin-clavulanic acid along with hepatic antioxidants. If liver values do not begin to improve within 7-10 days of initiating therapy, antibiotics should be



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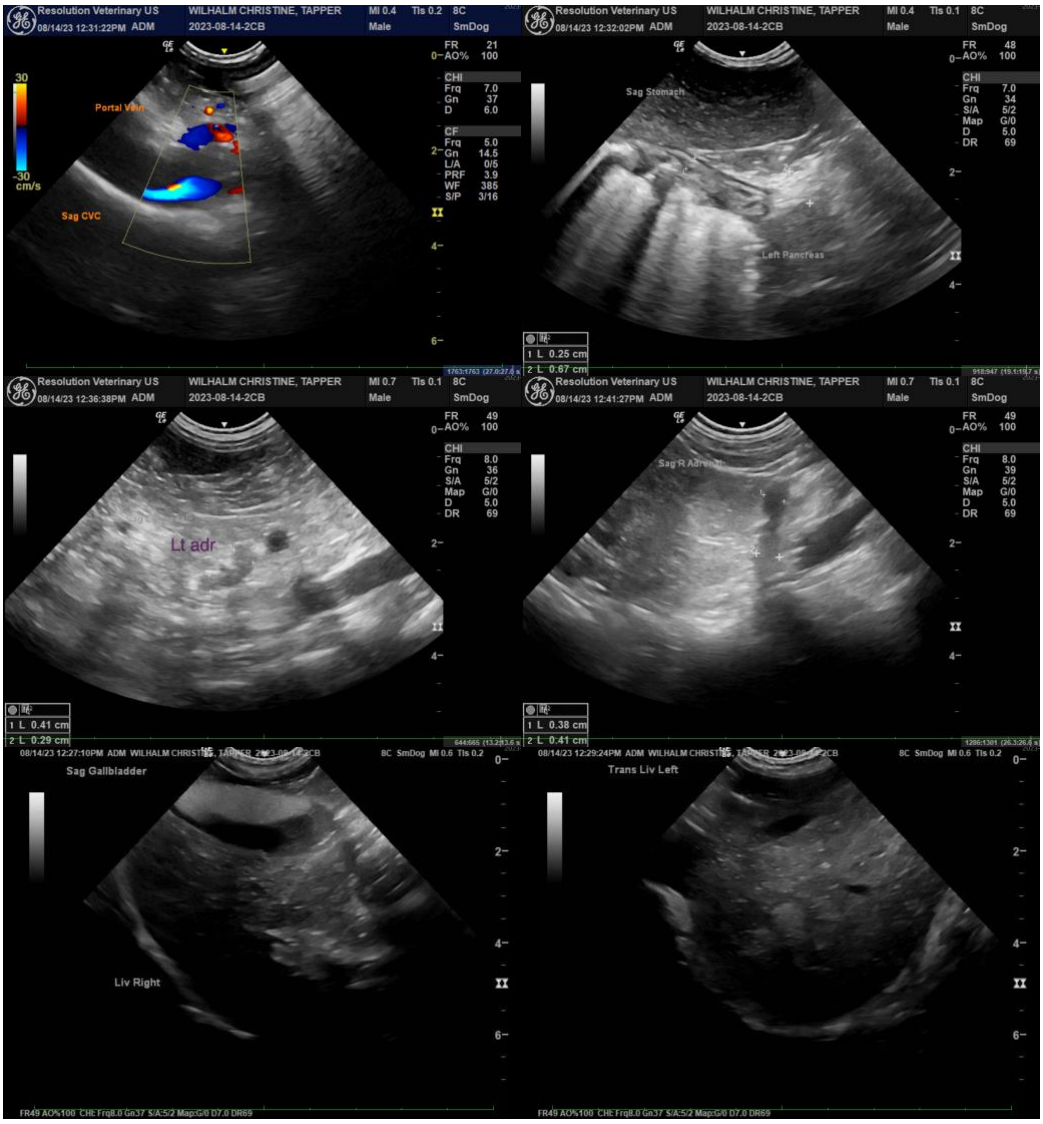
discontinued, and hepatic tissue sampling reconsidered. If values do improve, a 4–6-week course of treatment is recommended.

- Regarding the current clinical signs, consider the following:

1. Fecal evaluation for ova and Giardia
2. Consider prophylactic deworming with Fenbendazole.
3. Symptomatic care acute gastroenteritis is recommended, including initiation of a probiotic +/- fiber supplement (i.e., psyllium).
4. If the patient's clinical signs do not begin to improve with medical management, a more advanced GI work-up (i.e., Texas GI panel, resting cortisol level, +/- GI biopsies) may be warranted.



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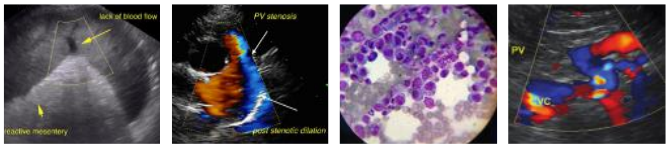

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)
info@SonoPath.com