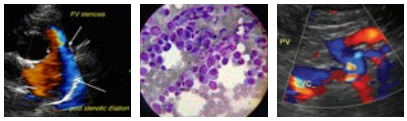
IMAGING PERFORMED BY

IntraPet.com



SonoPath

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DATE

2/9/23

PATIENT

Lexcie Malinich

SPECIES

Canine

BREED

Mix

SEX

Spayed Female

AGE

12/31/11

WEIGHT

71.2 Pounds

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

HOSPITAL NAME

Everhart WellPet

REFERRING VET

Dr. DelFavero

INVOICE

44967

PRESENTING CLINICAL SIGNS

Hx. of chronically elevated ALP (abouve 1000 for the past few months). Presented on 2/9/2023 for intermittent diarrhea of 3 weeks duration - otherwise doing well, E/D well, no vomiting. PE: BAR, mm pk/tacky, CRT < 2sec, H/L clear, tense on cranial abdominal palpation, but not crying out in pain. AFAST: significant amount of apparently non-gravity dependent sludge in the gall bladder

Current Medications: Denamarin long-term. Started on 2/9/2023: IVF, 3.2mL Cerenia IV SID, 485mg Metronidazole IV BID, 250mg Ursodiol PO BID
Lab Results: 2/9/23: ALP 1469, ALT 139, PCV/TS: 65%/7.8
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Approved/Requested.
Imaging Performed By: Stephanie Warga RDCS, RVT.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (7.7 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (7.48 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.88 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.86 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are few very subtle lesions visualized in the liver, a small ill-defined hyperechoic nodule measuring 1.14 cm in diameter, a hypoechoic nodule measuring 2.4 cm x 1.53 cm in diameter on the left side of the liver, and a small cystic appearing hypoechoic nodule measuring 0.61 cm.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate to large amount of non-organized echogenic debris present. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measures 0.45 cm. Jejunum wall measures 0.33 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Mildly mottled spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This is very subtle and could be within normal limits for this individual. Consider continued monitoring or fine needle aspirates.

- Large, heterogeneous liver with occasional small parenchymal lesions – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The small lesions described (hyperechoic, hypoechoic, and cystic) are very small and have a somewhat benign appearance. Continued monitoring is warranted.

- Moderate to large amount of gallbladder debris – There is a moderate amount of gallbladder debris present but no evidence of wall thickening. The debris is not adherent to the gallbladder wall and there is no evidence of surrounding inflammation. Recommend continued monitoring.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a moderate to large amount of gallbladder debris present, but no evidence of gallbladder pathology. You're already administering Ursodiol, so I would recommend continued monitoring. I suspect the appearance of the gallbladder has nothing to do with the diarrhea reported and is likely incidental at this time. No focal lesions are visualized associated with the GI tract to identify a cause for the diarrhea reported.

Unfortunately, there are many causes for diarrhea that cannot be diagnosed by ultrasound alone.

Consider such differentials as food allergy/dietary intolerance, GI parasitism, pancreatitis, dysbiosis, recurrent dietary indiscretion, IBD and less likely neoplasia, etc.…

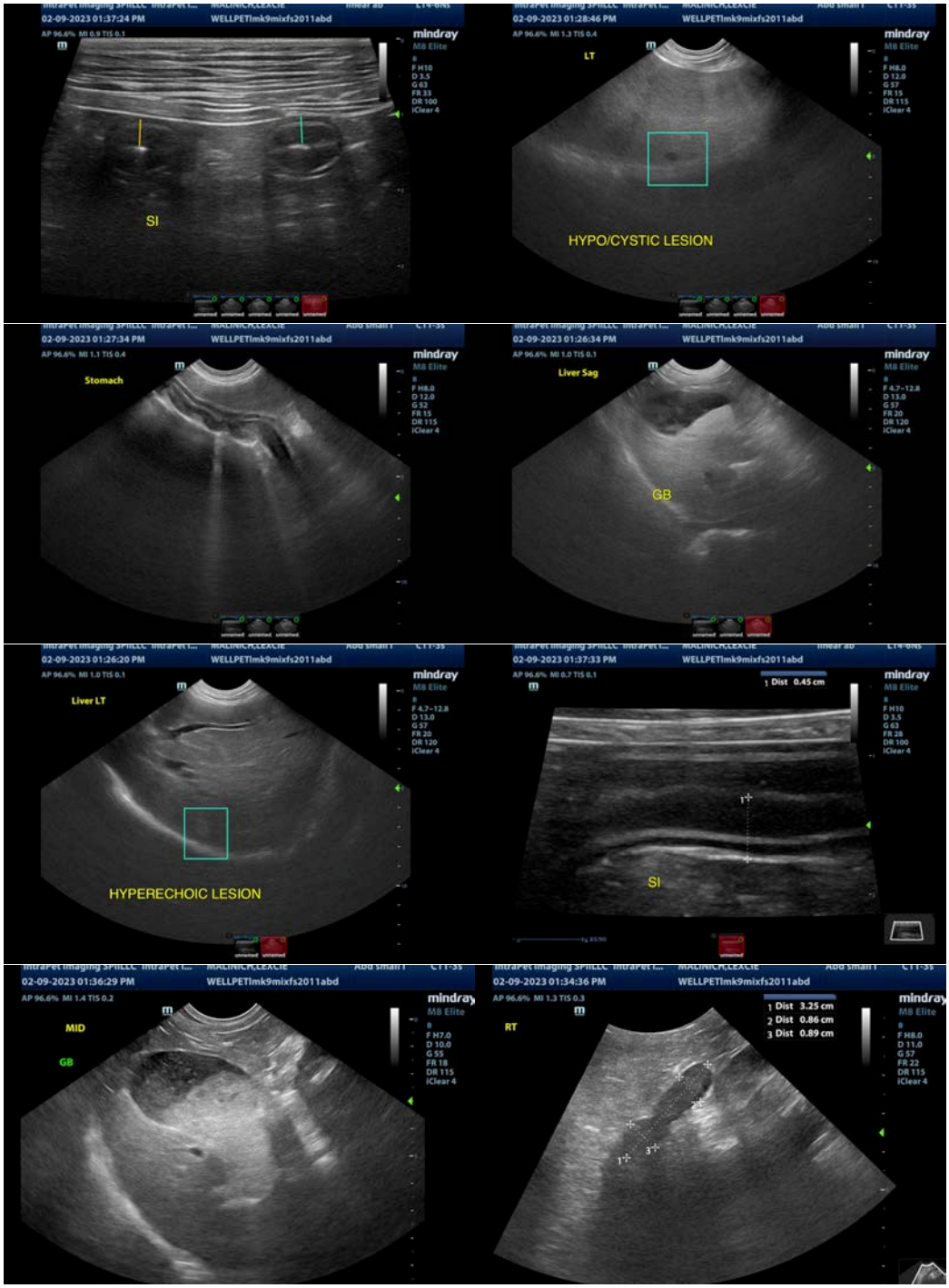
- Consider a novel protein/hydrolyzed protein diet (exclusively at least 4-6 weeks)
- Consider a GI panel to Texas A&M for evaluation of B12 levels, folate, PLI/TLI etc.. to further evaluate for pancreatic/small intestinal disease.
- Recommend chronic probiotic therapy.
- If the diarrhea persists or worsens, you could consider obtaining GI biopsies.

There is a chronic significant ALP elevation with a relatively normal ALT level. These are my recommendations for further evaluation of a primary ALP elevation with minimal focal lesions:

- Induction phenomena are the most common cause for an elevation in ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.
- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.
- Consider fine needle aspirate to rule out round cell neoplasia -if this is a concern.
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.
- Consider long term use of denamarin, and monitoring for the signs of cushings developing.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc..

The adrenals are borderline large, but likely appropriate for a large dog. Continued monitoring for additional signs of Cushing’s or further adrenal enlargement is warranted.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.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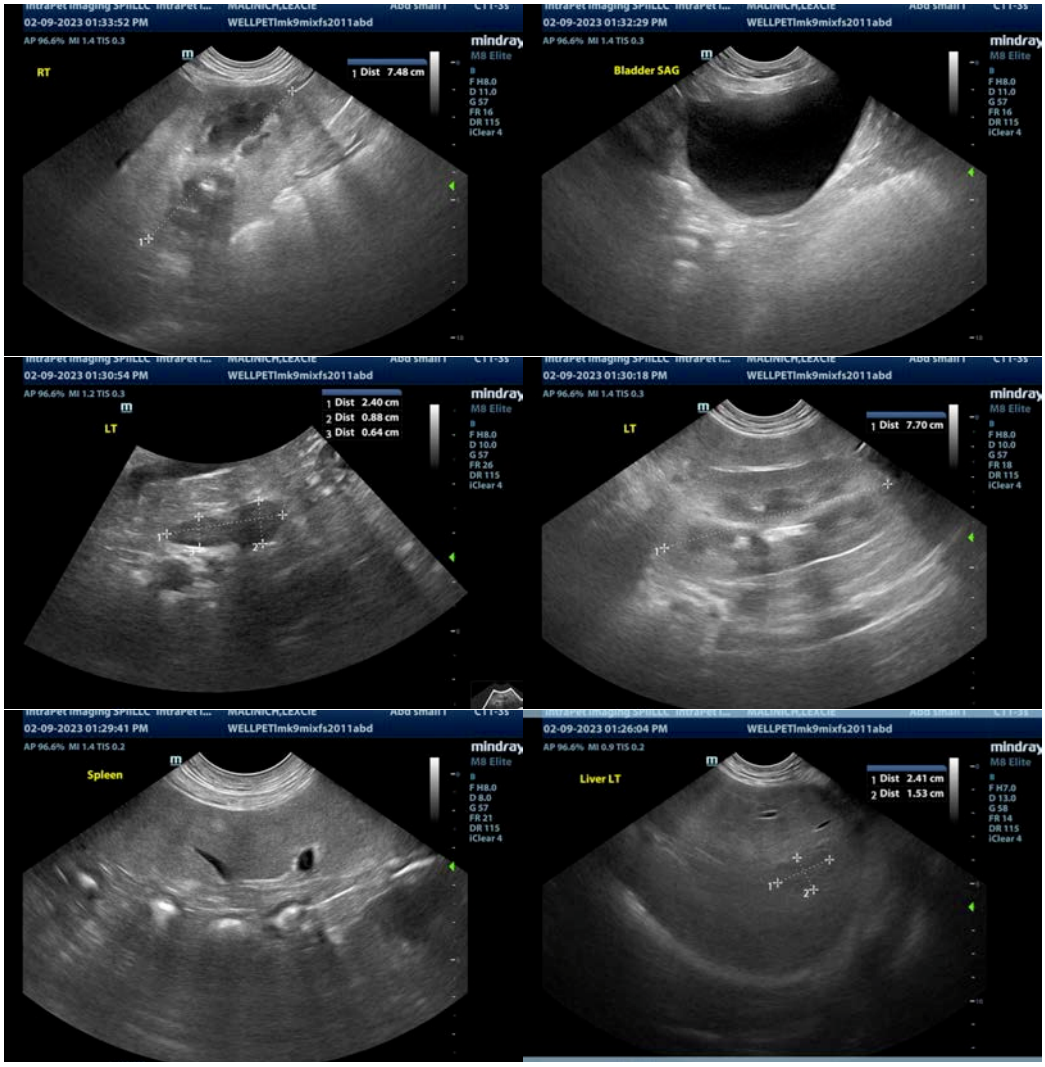
RT
1 Dist 3.25 cm
2 Dist 0.86 cm
3 Dist 0.89 cm



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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