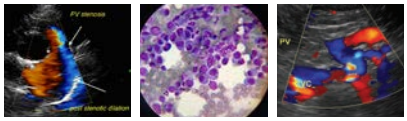
IMAGING PERFORMED BY

IntraPet.com



SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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

DATE

2/22/23

PATIENT

Steffi Norton

SPECIES

Canine

BREED

German Shorthair Pointer

SEX

Spayed Female

AGE

8/19/10

WEIGHT

39.2 Pounds

INTERPRETED BY

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

HOSPITAL NAME

Timonium AH

REFERRING VET

Dr. Brand

INVOICE

45421

PRESENTING CLINICAL SIGNS

2/22/23- Several week history of anorexia and intermittent vomiting.

Current Medications: Carprofen 100mg ½ BID, Gabapentin 600mg ½ BID.
Lab Results: TP 4.5 LOW (5.2-8.2), Alb 1.7 LOW (2.2-3.9), Glob 2.8 (2.5-4.5), Alb/Glob 0.6, ALT 798 HIGH (10-125), ALKP 1648 HIGH (23-212), GGT 12 HIGH (0-11), Tbil 3.3 HIGH (0.0-0.9).
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, BS, RDMS.

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 (5.76 cm). Overall echogenicity is slightly hyperechoic with poor 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 (6.1 cm). Overall echogenicity is slightly hyperechoic with poor 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 0.71 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 0.51 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, echotexture is homogenous, and 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 hypoechoic, irregular, and borderline small. parenchyma is homogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

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 amount of non-organized echogenic debris. 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 uniform diameter with minimal fluid distension. Wall thickness is moderately increased. Bowel loops follow a typical curvilinear path. Wall layering is slightly diminished, and the mucosal appears somewhat "fuzzy". Jejunum wall measures 0.35 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.

PRIMARY FINDINGS

- Irregular hypoechoic, heterogeneous, borderline small liver – 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.

- Moderate gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

- Subjectively thickened small intestine with "fuzzy" mucosa – The bowel wall thickening could be consistent with inflammation, edema, or infiltrative neoplasia.

SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I suspect this is a situation of concurrent GI and liver disease, as there are criteria for both visualized on today's exam. The liver appears slightly small and irregular. This combined with the bilirubin elevation is concerning for a primary hepatopathy. Additionally, the bowel appears thickened and somewhat fuzzy. It is difficult to determine the source of the hypoalbuminemia, as it could be either organ system or both. Consider the following for further evaluation of the elevated liver values and changes observed:

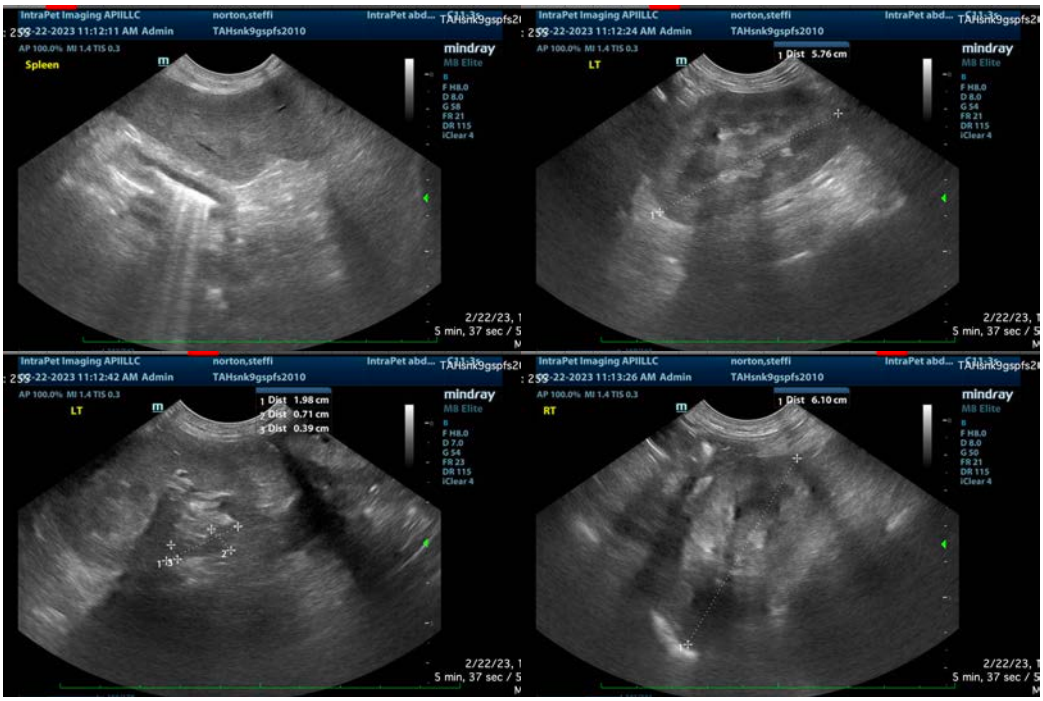
- Recommend screening for Leptospirosis.

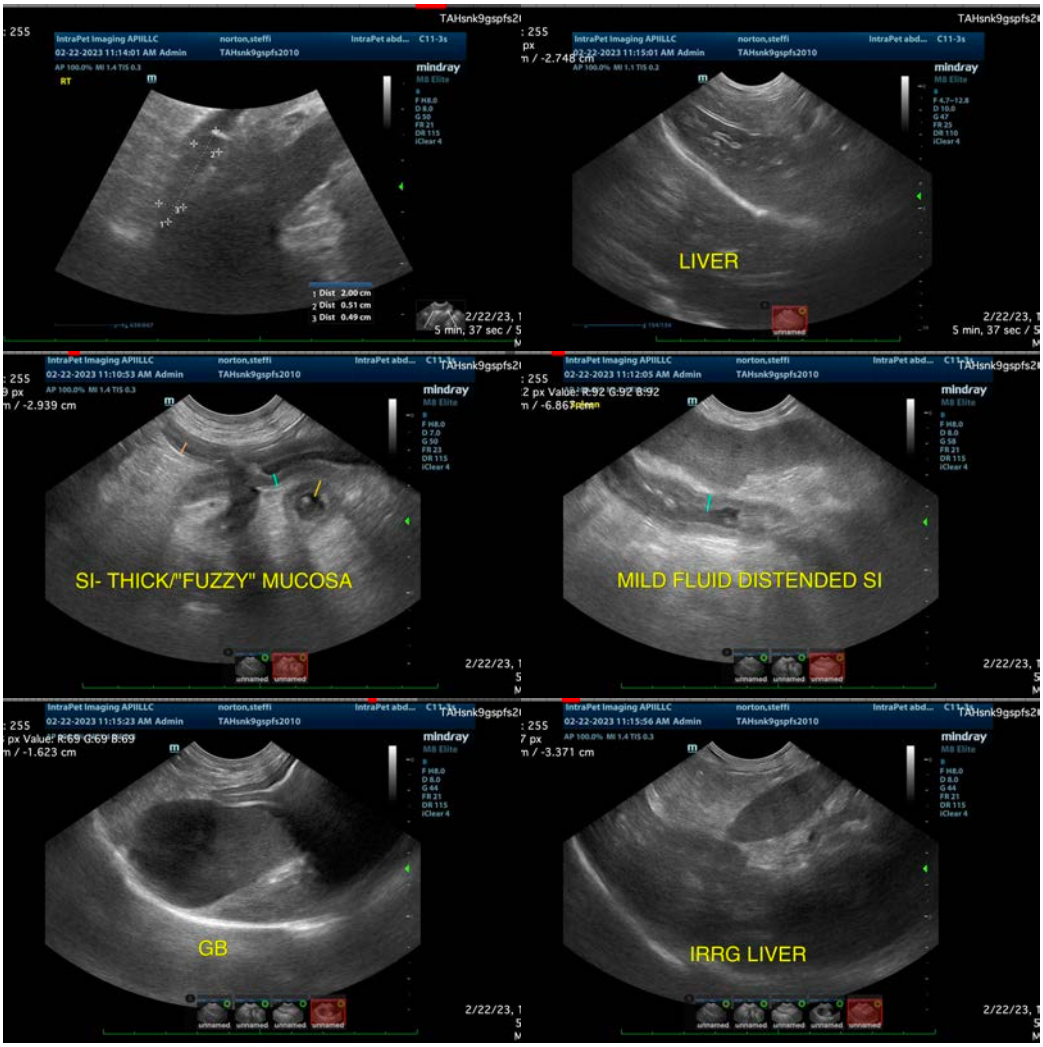
- If coagulation parameters are normal, consider a fine needle aspirate.
- For many types of liver disease, particularly cirrhosis, etc., a biopsy would be necessary for diagnosis.
- Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

For further evaluation of the small intestine, consider the following steps. Most likely differential for protein losing enteropathy (which is what I suspect) would be severe IBD, lymphangiectasia, or less likely intestinal neoplasia.

- Consider a novel protein/hydrolyzed protein diet (exclusively at least 4-6 weeks). If possible, consider the lowest fat hypoallergenic diet.
- 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 pre- and probiotic (possibly Proviable forte?).
- Ideally, endoscopic GI biopsies may be necessary to obtain a diagnosis.

Continue to monitor the bilirubin and confirm that it is persistently elevated (not hemolysis, etc.). Additionally, if globulins are low or normal, this would point more towards severe intestinal disease.





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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)
kathleen.sennello@sonopath.com