

**DATE PRESENTING CLINICAL SIGNS**

7/22/22

Symptoms started about 2.5 weeks ago. Went to rDVM several times to have anal glands expressed. Was on Apoquel, which did not seem to be working. Then started on a 1/4 tab of Benadryl. Diarrhea then started, O tried to give pumpkin, chicken and rice, chick fil a, bread, and her symptoms got worse. Eating what she wants and when she wants. Diarrhea now chocolate milk consistency and projectile. Still eating, but O's have noticed an increase in thirst. O cannot get diarrhea under control. Went to rDVM today, send here after bw indicated low proteins. Has a hx of parasites (tapeworm) 2021, had a cystotomy

PATIENT

Raven Matthews

SPECIES

Canine

Current Medications: None listed.

Lab Results: See attached.

Date of Previous IntraPet Ultrasound: No previous.

BREED

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Yorkshire Terrier

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**SEX**

Spayed Female

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.

AGE

7/21/16

The left kidney has a normal shape and size (4.53 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

12 Pounds

The right kidney has a normal shape and size (5.01 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

INTERPRETED BY

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

Adrenal Glands

The left adrenal gland is normal in size measuring 0.67 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.

IMAGING PERFORMED BY

Stephanie Pearce
RDMS, RVT

The right adrenal gland is normal in size measuring 0.63 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.

HOSPITAL NAME

Animal Emergency
Hospital

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.

REFERRING VET

Dr. Goessling

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is homogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

INVOICE

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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 increased. Bowel loops follow a typical curvilinear path. Some areas have reduced detail of wall layering. Duodenum wall measured 0.51 cm. Jejunum wall measured 0.37 cm. Visualized peristalsis appears appropriate. Mucosal fogging is visualized. 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 prominent and mottled compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

There is a small amount of free abdominal fluid. No lymphadenopathy. The omentum is diffusely hyperechoic.

ULTRASONOGRAPHIC FINDINGS

- Mild/moderate small intestinal thickening with mucosal fogging – The bowel wall thickening could be consistent with inflammation, edema, or infiltrative neoplasia.
- Moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The small bowel appears somewhat thickened and foggy on today's exam. This findings are concerning for protein losing enteropathy. Recommend pre- and post-prandial bile acids to evaluate liver function, and a urine protein to creatinine ratio to further evaluate the protein visualized in the urine to look for concurrent causes of protein loss.

There are many differentials for the non-specific changes observed, but a primary concern would be IBD, lymphangiectasia, or less likely underlying neoplasia.

- Recommend an ultra low-fat diet. Ideally, this would be a novel protein or hydrolyzed protein prescription diet, if possible.
- Recommend GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate to further evaluate the pancreatic changes observed and the small intestine, as cobalamin deficiency, dysbiosis,

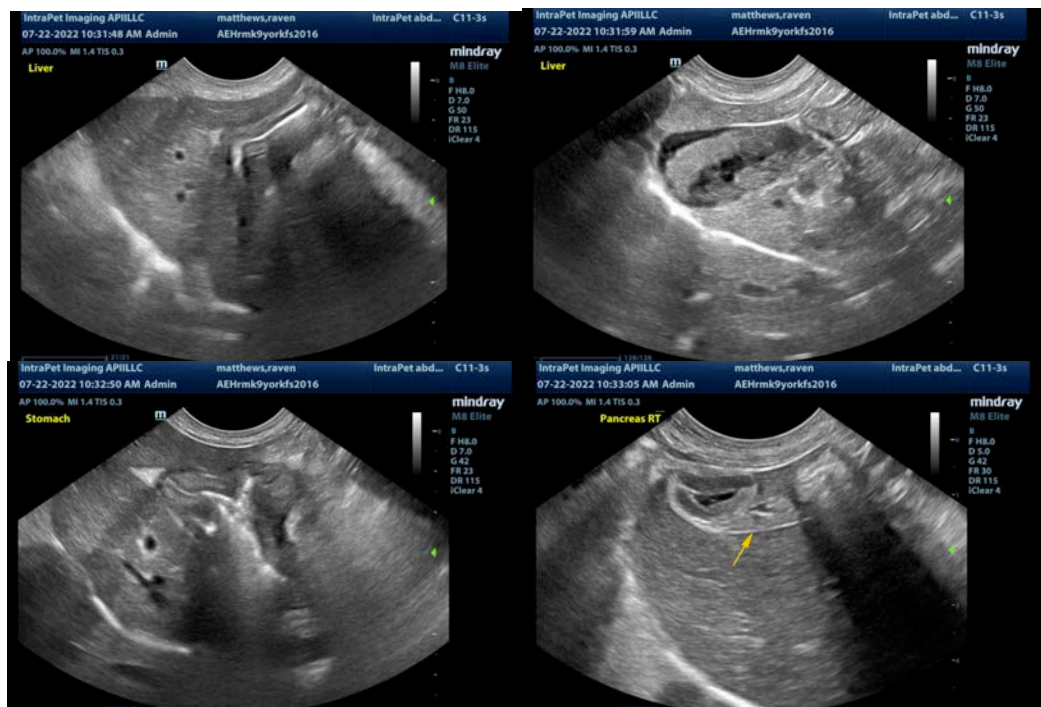
etc. are often concurrent issues.

- Recommend chronic probiotic therapy.
- If the hypoproteinemia persists despite symptomatic therapy, hypoproteinemia and diarrhea persists despite therapy. Recommend obtaining GI biopsies.

The Yorkshire Terrier is an at risk breed for protein losing enteropathy as well as liver disease. Additionally, there is evidence of ketones, glucose and protein in the urine, which can be an indicator of tubular disease (Fanconi-like syndrome, etc.). Obtaining endoscopic GI biopsies is strongly recommend to guide future treatment in this relatively young patient.

Recommend 3-view thoracic radiographs to look for evidence of pleural effusion or concurrent intrathoracic disease and reevaluation of the urinalysis along with a urine culture to determine if the tubular injury is severe enough to require treatment.

Also pay close attention to the electrolytes on the lab work, as these can become abnormal in these patients.





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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