

**PATIENT PRESENTING CLINICAL SIGNS**

Zeus Liddington Unresolving diarrhea B12, Tylan, bland diet

**SPECIES** Albumin 2.4, total protein 4.3, calcium 8.6, unremarkable CBC, T4 2.1

**Canine ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED** The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

Lab Mix

**SEX** The residual prostate was without pathology.

MN The area of the aortic trifurcation was free of pathology.

**AGE** Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 7.0 cm in length. The right kidney measured 7.6 cm in length.

6y

**WEIGHT** 88

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 3.2 cm length x 0.61 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 3.3 cm length x 0.62 cm width at the caudal pole.

**INTERPRETED BY**

R. McKenzie Daniel,  
 DVM, DABVP  
 (Canine and Feline)

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**IMAGING PERFORMED BY**  
 Rebekah Jakum, CVT  
 ARDMS/RVT

**HOSPITAL NAME**

Mill Pond VC

**Liver/ Gallbladder**

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

**REFERRING VET**

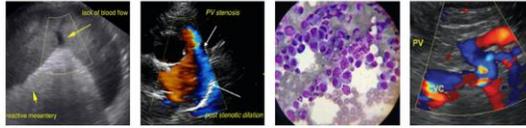
Thayer

**INVOICE Gastrointestinal**

14736 The stomach presented intact and sonographically unremarkable visualized wall layering with subjective mild to moderate gastric gas distention. Full evaluation of the gastric interior owing to the

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presence of luminal gas. No obvious evidence of gastric distention with retained fluid or overt foreign material.

**SPECIES**

Canine

The small intestine exhibited segmental intact and sonographically unremarkable wall layering exhibiting a maintained 1:3 muscularis/mucosa ratio. Segments of nonspecific intestine exhibited mild to potential moderate mural hypertrophy exhibiting intact to indistinct wall layer detail, along with segmental moderate intestinal distention with nonshadowing ingesta, chyme, or potential fecal material. Normal-appearing intestinal wall measured 0.38 cm width. By comparison, thickened small intestinal wall measured up to 0.56 cm width.

**BREED**

Lab Mix

The discernable colon exhibited overtly normal wall layering and subjective generalized colon distention with nonformed to soft fecal matter consistent with reported diarrhea.

**SEX**

MN

***Pancreas***

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

**AGE**

6y

***Free Abdomen***

Regional mid to cranial abdominal nonuniform hyperechoic to nodular mesentery was present. Moderate volume primarily anechoic free fluid was noted. Evidence of significant lymphadenopathy was not obvious yet potential for mild isoechoic mesenteric lymphadenopathy is possible.

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**ULTRASONOGRAPHIC FINDINGS**

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 (Canine and Feline)

- Segmentally thickened intestine exhibiting moderate distention with retained ingesta, chyme, or possible fecal material
- Regional mid to cranial abdominal potential peri intestinal nonuniform hyperechoic to nodular mesentery
- Moderate volume primarily anechoic free fluid

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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The intestinal segments which appear to be abnormal were of nonspecific location with primary small bowel involvement suspected, although the possibility of proximal colon involvement is possible. Underlying inflammatory disease such as IBD, and protein-losing enteropathy given the decreased albumin levels, are possible while the potential for early infiltrative neoplastic criteria cannot be excluded.

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Abdominocentesis for effusion analysis, cytology, +/- C/S is warranted for further assessment of the effusion. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended. Given the albumin levels at this stage (>2.0), laparotomy with gross inspection of the generalized intestinal tract and biopsies of abnormal segments of intestine would be ideal for a definitive histopathological diagnosis.

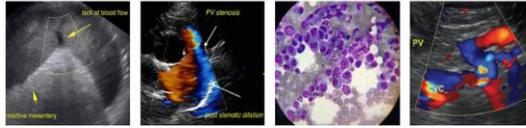
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The possibility of mechanical obstruction in this patient cannot be definitively excluded, although a definitive area of mechanical obstruction was not overtly visualized. Dysfunctional bowel or inefficient peristalsis pattern owing to underlying intestinal pathology is suspected.

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Hydrolyzed diet trial and broad-spectrum deworming are recommended even if fecal testing is negative. Some of all of the following protocol could be considered empirically with a sonographic assessment of the gastrointestinal tract pending clinical response.

**SPECIES**

Canine

**OBJECTIVE: keep albumin levels > 2 g/dl, avoid thromboembolism and cavitory effusions, monitor concurrent PLN (Wheaton Terrier PLE/PLN) and liver disease:**

**BREED**

Lab Mix

**Plasma** 10 mL / kilogram IV over 4 hours  
Or **Human albumin** 2 ml/kg/h over 10 hours. Total daily volume 20.l/kg/day  
**And Colloids/Hetastarch**

**SEX**

MN

10 to 20 mL per kilogram per day and dogs  
10 to 15 mL per kilogram per day cats  
(Can bolus first 1/3 of dose over 15 minutes)  
& maintain on LRS maintenance otherwise.

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**Metronidazole** (10-20 mg/kg po bid)  
**Famotidine** 1 mg/kg Iv Im po dc Sid /bid  
**Sucralfate** 0.5-1 g po tid dogs, 0.5 g bid cats in slurry Or **Misoprostol** 1-5 ug/kg po tid  
**Diet:** Highly digestible high quality protein, low fiber, low fat diet (< 15% of dry matter). Hydrolyzed protein or novel protein. Purina HA or Royal Canine HP or similar.  
**Prednisone** or prednisolone 2 mg/kg bid x 3-5 days then 2 mg/kg sid. **Chlorambucil** in refractive severe IBD/alimentary lymphoma cases (monitor cbc for rare bone marrow suppression) 4 mg/m<sup>2</sup> Q 24-48 hours.

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**Cobalamine** (B12) 250-1500 ug/dog weekly x 6 weeks.  
**Calcium** supplementation if necessary.  
**Aspirin** 0.5-1 mg/kg/day or **Clopidrel** (Plavix) 1-5 mg/kg/day.

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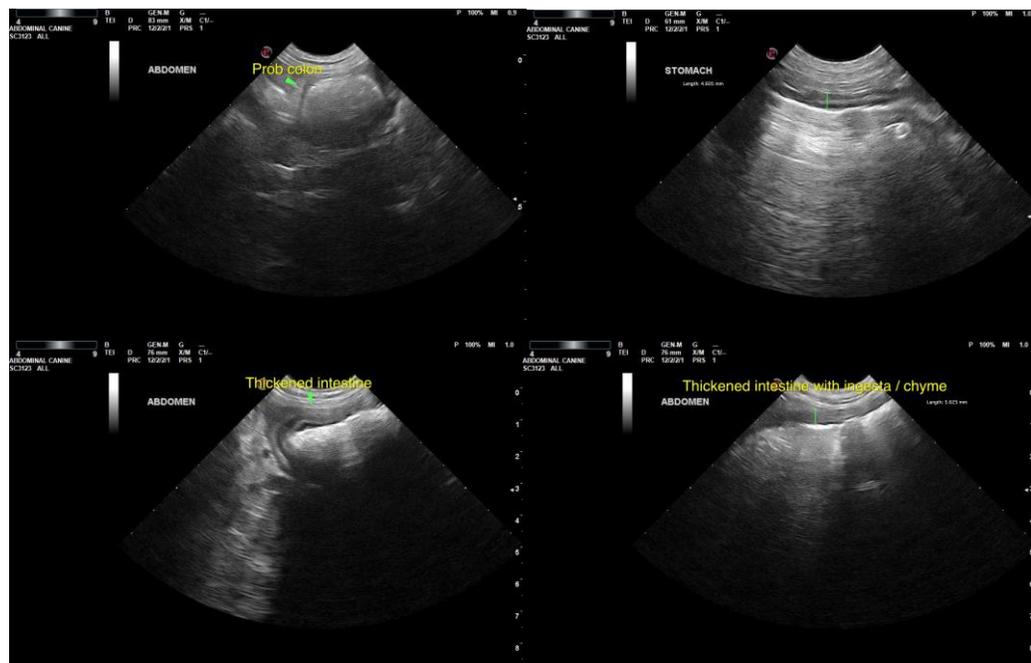
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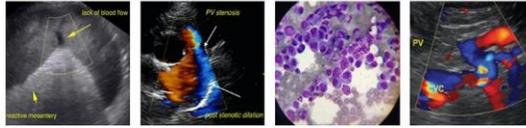
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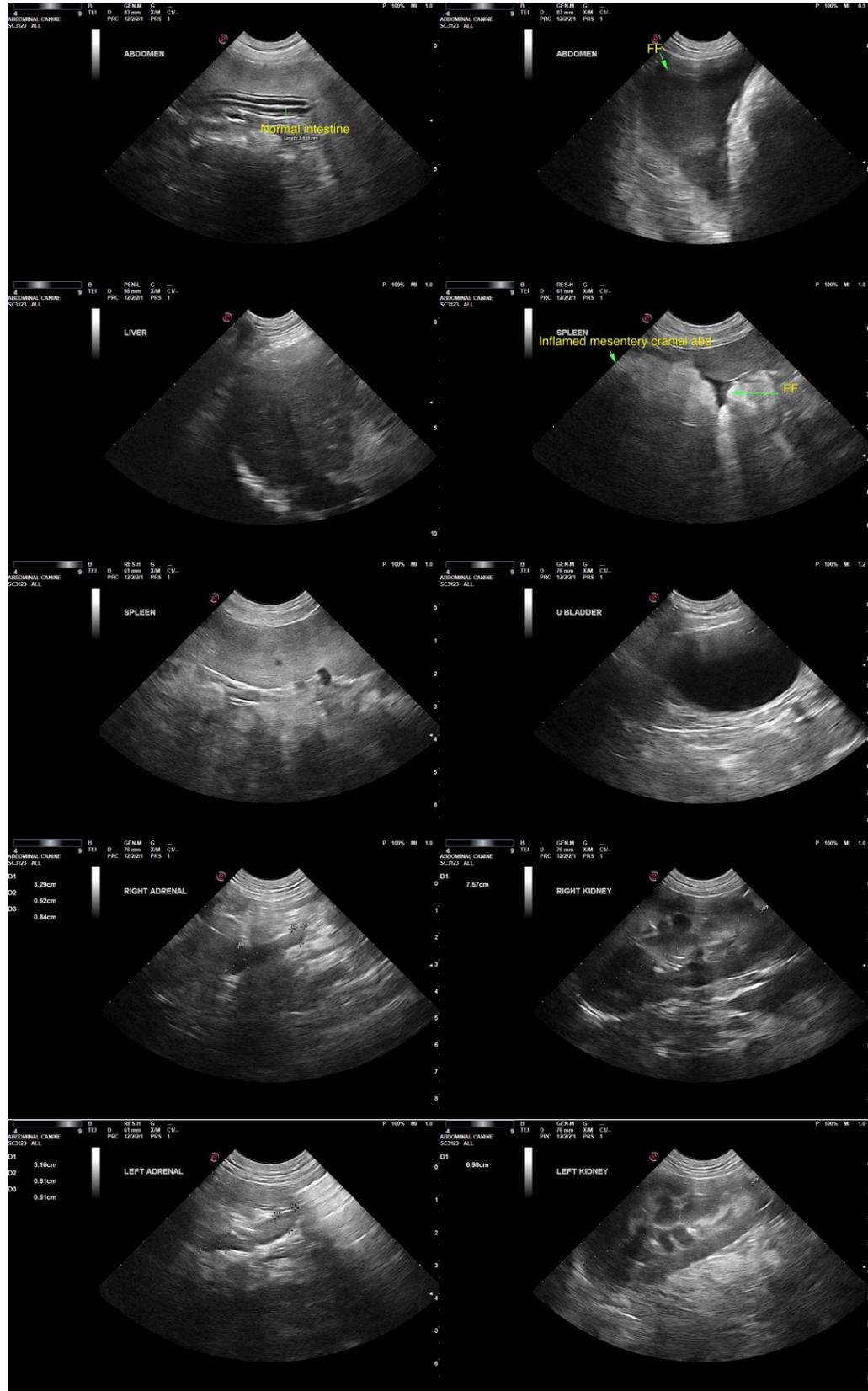
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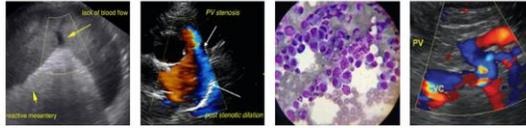
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**SPECIES**

Canine

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.

**BREED**

Lab Mix

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.

**SEX**

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