

**PATIENT**

Reggie Wozniak

**PRESENTING CLINICAL SIGNS**

Chronic diarrhea,

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Yorkie

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

**SEX**

Neutered male

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex. Slight pyelectasia was noted. Blood flow to the kidneys appeared to be adequate on power Doppler assessment. Slight mineralization was noted in both kidneys and was non-obstructive measuring 4.6 cm.

**AGE**

9 years

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**Adrenal Glands**

Both **adrenal glands** were flattened and isoechoic. The left adrenal gland measured 1.0 x 0.3 cm. The right adrenal gland measured 0.52 cm at the cranial pole and 0.33 cm at the caudal pole and 1.8 cm in length.

**IMAGING PERFORMED BY**

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**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**HOSPITAL NAME**

Millburn

**REFERRING VET**

Dr. Turowsky

**Liver**

The **liver** was uniformly swollen with minor, excessive gallbladder debris and over distension with dependent and suspended bile without evidence of overt mucocele formation. However, excessive sludge was present. The liver presented coarse architecture with mildly increased portal markings and subtle, mixed echogenic changes. This is consistent with vacuolar hepatopathy and some level of remodeling and history of inflammatory component. There was no overt suspicion of neoplasia.

**INVOICE**

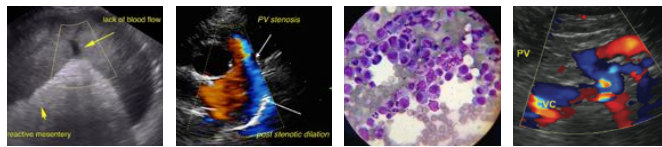
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**Gastrointestinal**

The **gastrointestinal tract** an empty stomach except for a 1.5 cm partially shadowing structure. This may be medication. Oral medication history should be considered. This is non-obstructive and non-



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irritative. The small intestines revealed diffuse, hyperechoic fogging or overlay throughout the small intestine as well as areas of mucosal striations and speckling. This striation + fogging effect appeared to exclusively affect the mucosal layer with the submucosa, muscularis and serosa left in-tact. Reactive mesentery was present associated with the serosa indicative of active inflammation. This is most consistent with protein losing enteropathy/lymphangectasia. Soft stool was noted in the colon.

**SPECIES**

Canine

**Pancreas**

**BREED**

Yorkie

Diffuse hyperechoic changes were present in the area of the **pancreas**. The pancreatic remodeling was evident with multifocal to diffuse hyperechoic changes. These changes are consistent with fibrosis, amyloid, saponification of fat and may contain areas of low-grade chronic active inflammation especially if pain on imaging (+ Murphy sign) was present +/- focal subxiphoid palpation reveals pain response. No overt masses were noted.

**SEX**

Neutered male

**ULTRASONOGRAPHIC FINDINGS**

**AGE**

9 years

Mucosal fogging, protein losing enteropathy pattern with pancreatic remodeling.  
Flattened adrenal glands.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The flattened adrenal glands are likely owing to Prednisone therapy; however, underlying Addison's cannot be completely ruled out. Note that the patient was painful with a referred back spasm upon imaging in the TL region. Anorexia could be related to pain as well in this region. Otherwise, GI protectant protocol and management for protein losing enteropathy is indicated. If vomiting is an issue then an endoscopy is warranted to assess the 1.5 cm structure; however, recheck sonogram is recommended prior to any intervention would be recommended unless this is oral medications. Oral medication history should be evaluated. Maldigestion panel would be ideal in this patient. There was no evidence of neoplasia.

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Part or all of this protocol may be considered based on your clinical impression of the patient:

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

**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**

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.

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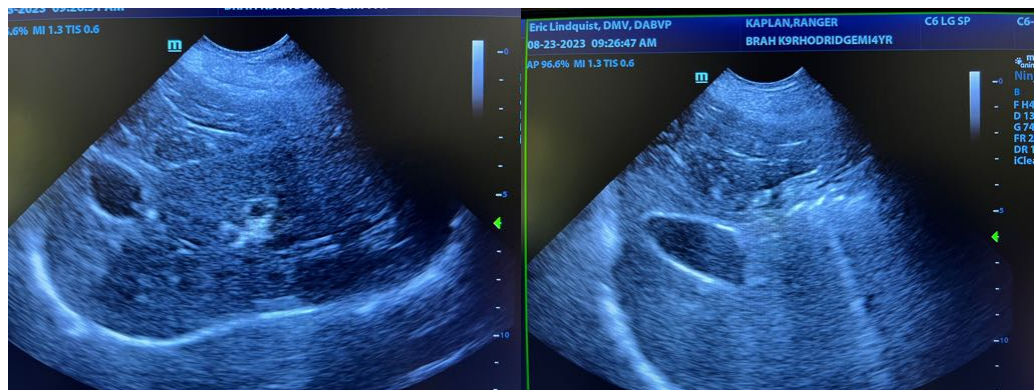
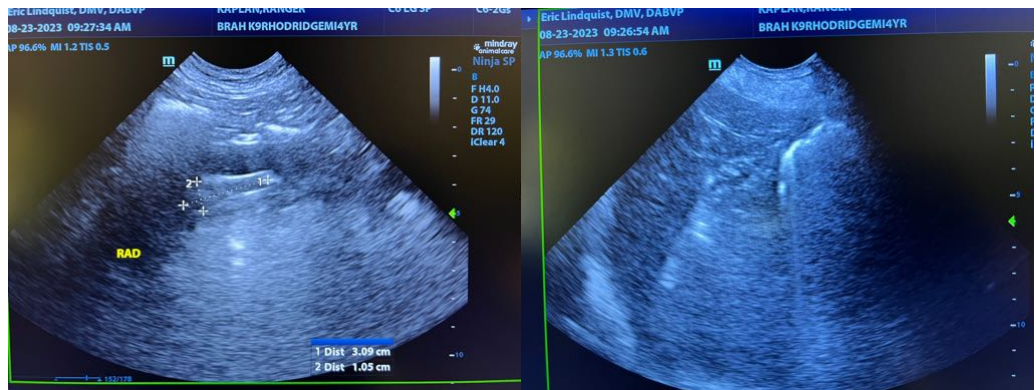
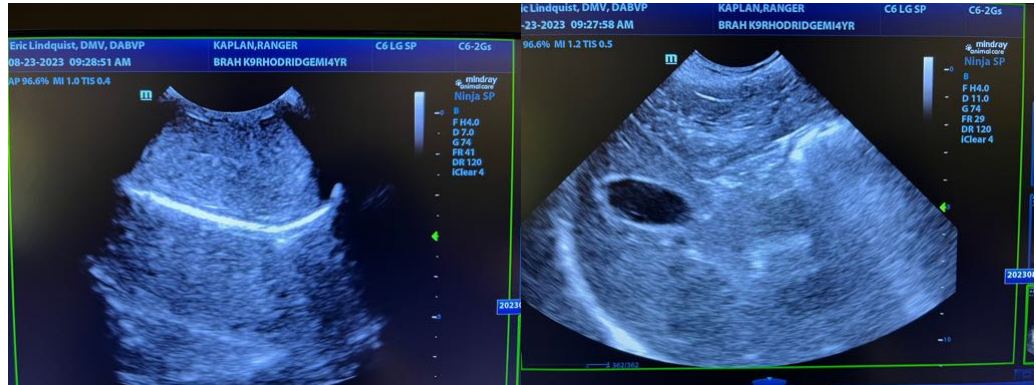
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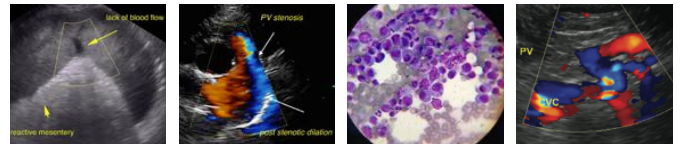
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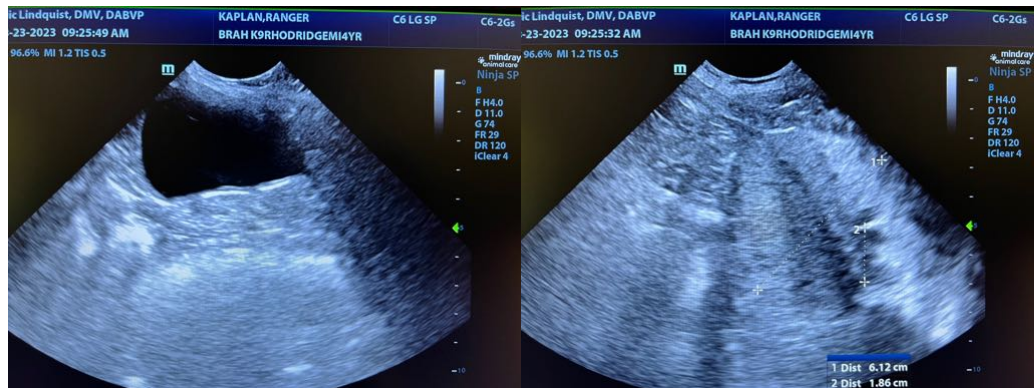
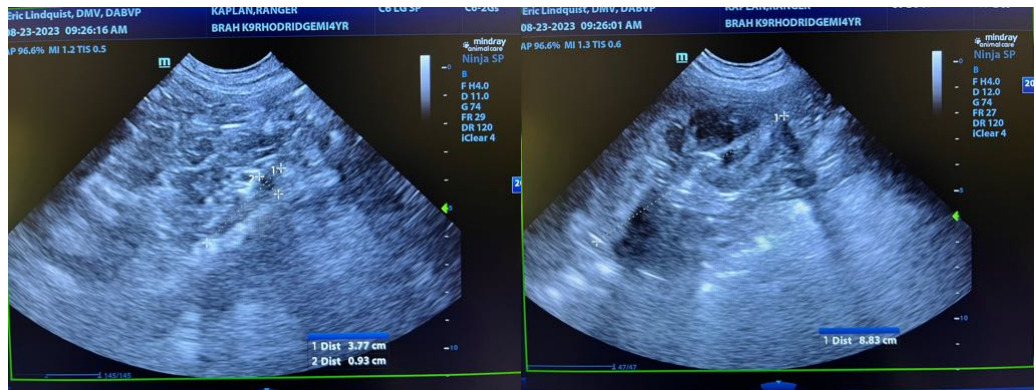
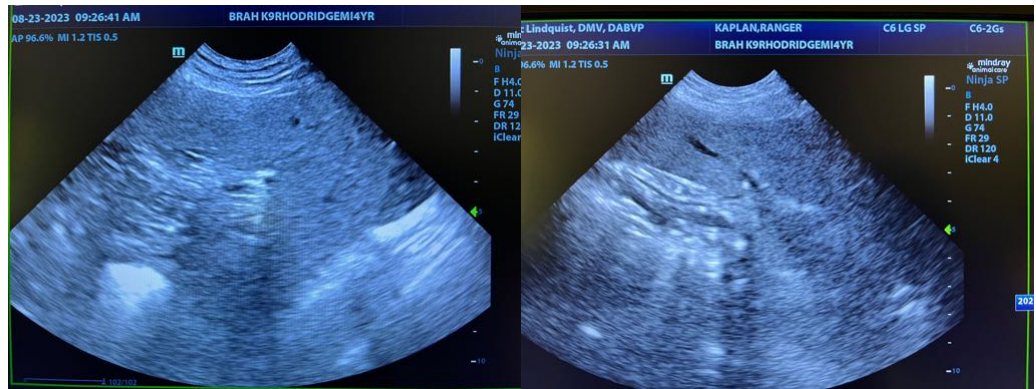
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
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