



PATIENT PRESENTING CLINICAL SIGNS

Ricky Rowaan Chronic diarrhea, elevation in pan-hypo proteinemia. Gabapentin, Mirtazapine, Apo-Azathioprine, Metronidazole, Sulcrate and Clavamox.

SPECIES Abnormal PE/Chem/CBC/UA Results: RBCs Low, Hematocrit Low, WBCs high, Neuts High, Mono High, Platelets high, Phosphorous Low, Calcium Low, Total Protein Low, Albumin Low, Globulin Low, ALP Low, Cholesterol Low, Snap CPL abnormal.

Canine

BREED ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Pug Urinary System

The urinary bladder was normal in size and tone containing primarily anechoic urine with mild nondependent mineral. The urethra was normal in structure and tone to depth of 2.0 cm.

SEX The residual prostate was normal in size and contour with subtle nonhomogeneous parenchyma. Pinpoint areas of likely nonobstructive prostatic urethral mineral were present. The residual prostate measured 1.1 cm in diameter.

MN

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

12 years

WEIGHT Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Pinpoint to focal areas of nonobstructive medullary mineral were present. The left kidney measured 4.0 cm in length. The right kidney measured 4.0 cm in length.

21 lbs.

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Dog and Cat Clinic of
Niagara

REFERRING VET

Dr. Aziz

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DATE

4/7/22

Adrenal Glands

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 1.5 cm length x 0.66 cm width at the caudal pole. The right adrenal gland measured 1.3 cm length 0.74 cm width at the caudal pole. No evidence of adrenal neoplastic criteria was noted.

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.

Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. 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.



PATIENT

Gastrointestinal

Ricky Rowaan

The stomach presented intact yet mild prominent wall layering. The lumen of the stomach was empty with mild luminal gas. The gastric body wall width measured 0.35 cm.

SPECIES

Canine

The small intestine presented intact wall layering and primarily maintained a 1:3 muscularis/mucosa ratio with subjective primarily uniform mucosa echogenicity. Generalized small bowel gas with segmental duodenojejunal nonobstructive ileus was present. The duodenum wall width measured 0.43 cm. The jejunum wall width measured 0.35 cm.

BREED

Pug

Normal visible colon wall layers were present with apparent formed feces in lumen.

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

12 years

Free Abdomen

A small pocket of scant free fluid was noted in the left lateral abdomen adjacent to the left kidney. Subtle generalized reactive mesentery was present. No overt lymphadenopathy was noted.

WEIGHT

21 lbs.

ULTRASONOGRAPHIC FINDINGS

- Mild urinary bladder and nonobstructive prostatic urethral mineral
- Mild chronic renal changes with minor medullary mineral
- Enteropathy exhibiting segmental nonobstructive duodenojejunal ileus
- Mild generalized reactive mesentery and small pockets of scant peritoneal free fluid

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient may be passing small amounts of mineral from the kidneys into the urinary bladder. Full urinary workup including urinalysis, culture and sensitivity is recommended.

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The presence of chronic diarrhea in this patient in the face of panhyperproteinemia is suggestive of nonspecific protein-losing enteropathy with considerations including; IBD and lymphangiectasia with infiltrative enteropathy possible yet considered less likely. Further assessment may include fresh fecal analysis to rule out parasitic ova / Giardia and a GI panel to include PLI/TLI/Cobalamin/Folate. Endoscopic biopsies of the gastrointestinal tract are required for a definitive diagnosis and may be considered if albumin level (>2.0).

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Potential for low-grade to chronic pancreatitis which may present as sonographically normal cannot be definitive excluded, although sonographic evidence of active or significant pancreatitis or pancreatic neoplastic criteria was not present.

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Empirically, some or all of the following protocol could be considered.

OBJECTIVE: keep albumin levels > 2 g/dl, avoid thromboembolism and cavitory effusions,



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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 lv 1m 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

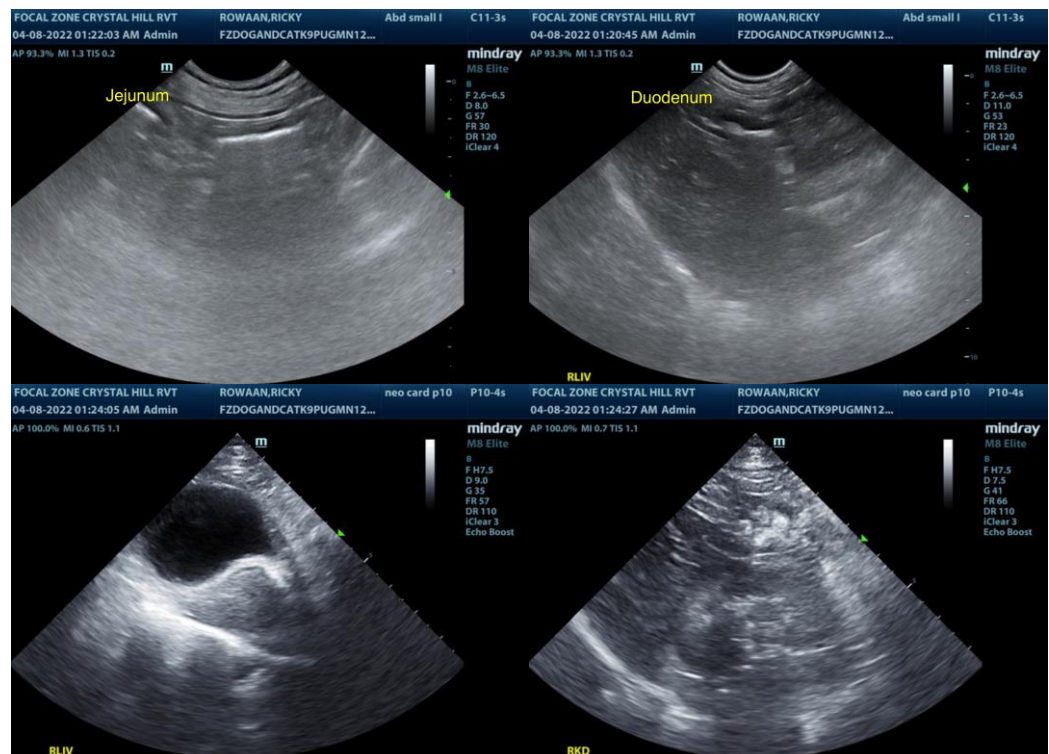
Diet: Highly digestible high quality protein, low fiber, low fat diet (< 15% of dry matter). Hydrolyzed protein or novel protein. Purina HA or Royal Canine HP or similar.

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/m² Q 24-48 hours.

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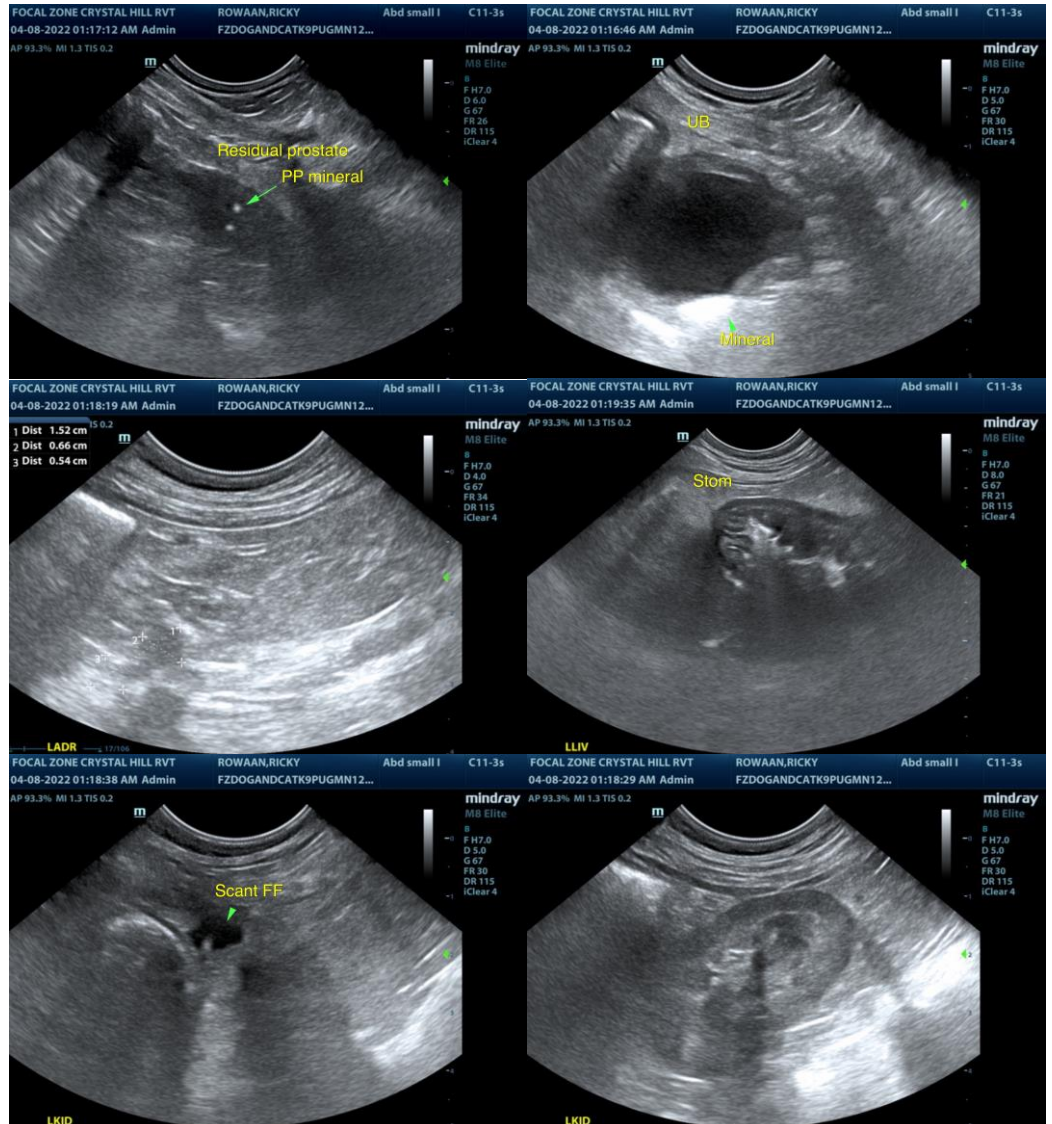
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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