



PATIENT

Echo Kim

PRESENTING CLINICAL SIGNS

History: Echo was seen at the emergency clinic on 9/24 for diarrhea.

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: Calcium 7.5 Total protein 3 Albumin 1.1 globulin 1.9 ALB/Glob ratio: 0.6 Cholesterol 67 Spec cpl 224 (high is 200) BP is normal. Relatively healthy-looking dog on exam. Fecal and urinalysis were normal. Was prescribed metro, Fortiflora and 1 can of hydrolyzed protein but, no other treatment.

BREED

Bichon Frise

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** and visible portion of the pelvic urethra are normal for the degree of luminal distension. The urine is anechoic with no evidence of debris. Cystic calculi and discrete masses are not observed. The region of the trigone is normal.

SEX

Spayed Female

The **left kidney** is normal size (4.22 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

AGE

6 years

The **right kidney** is normal size (4.08 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

15 lbs

Adrenal Glands

The **left adrenal gland** is normal size (0.48 cm at cranial pole) (0.47 cm at caudal pole); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

INTERPRETED BY

Andrea Nicastro,
DVM, Diplomate
ACVIM (*Small Animal
Internal Medicine*)

The **right adrenal gland** is normal size (0.58 cm at cranial pole) (0.34 cm at caudal pole); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

IMAGING PERFORMED BY

Charlie Rodriguez

Spleen

The **spleen** is subjectively normal in size with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

HOSPITAL NAME

Bethany Family PC

Liver

The **liver** is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative, or regenerative pathology is evident. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed.

REFERRING VET

Dr. Saum Hadi

The **gall bladder** lumen is moderately distended. The wall is thin and smooth. Luminal contents are anechoic. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The **gastric lumen** is distended with ingesta. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The small intestinal lumen is not dilated. The small intestinal wall is normal to mildly thickened (up to 0.44 cm) with retention of the normal layering pattern. There is evidence of mucosal fogging and speckling, +/- striations in some segments. Discreet masses are not identified. The colonic wall is normal. There is no obvious evidence of an obstructive pattern.

INVOICE

11727

DATE

9.28.22

Pancreas

A portion of the **pancreas** is obscured by the gastric distention. The visualized portions (base and right limb), are visible/prominent with minimal deviation from the normal peripheral contours. The parenchyma is hypoechoic relative to surrounding omental fat and slightly mottled in appearance. No distinct focal lesions are observed. The pancreatic duct is not overtly dilated.

Free Abdomen

A small to moderate amount of anechoic free fluid is present. The mesentery throughout the abdomen is hyperechoic. One to two prominent mesenteric **lymph nodes** are suspected.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

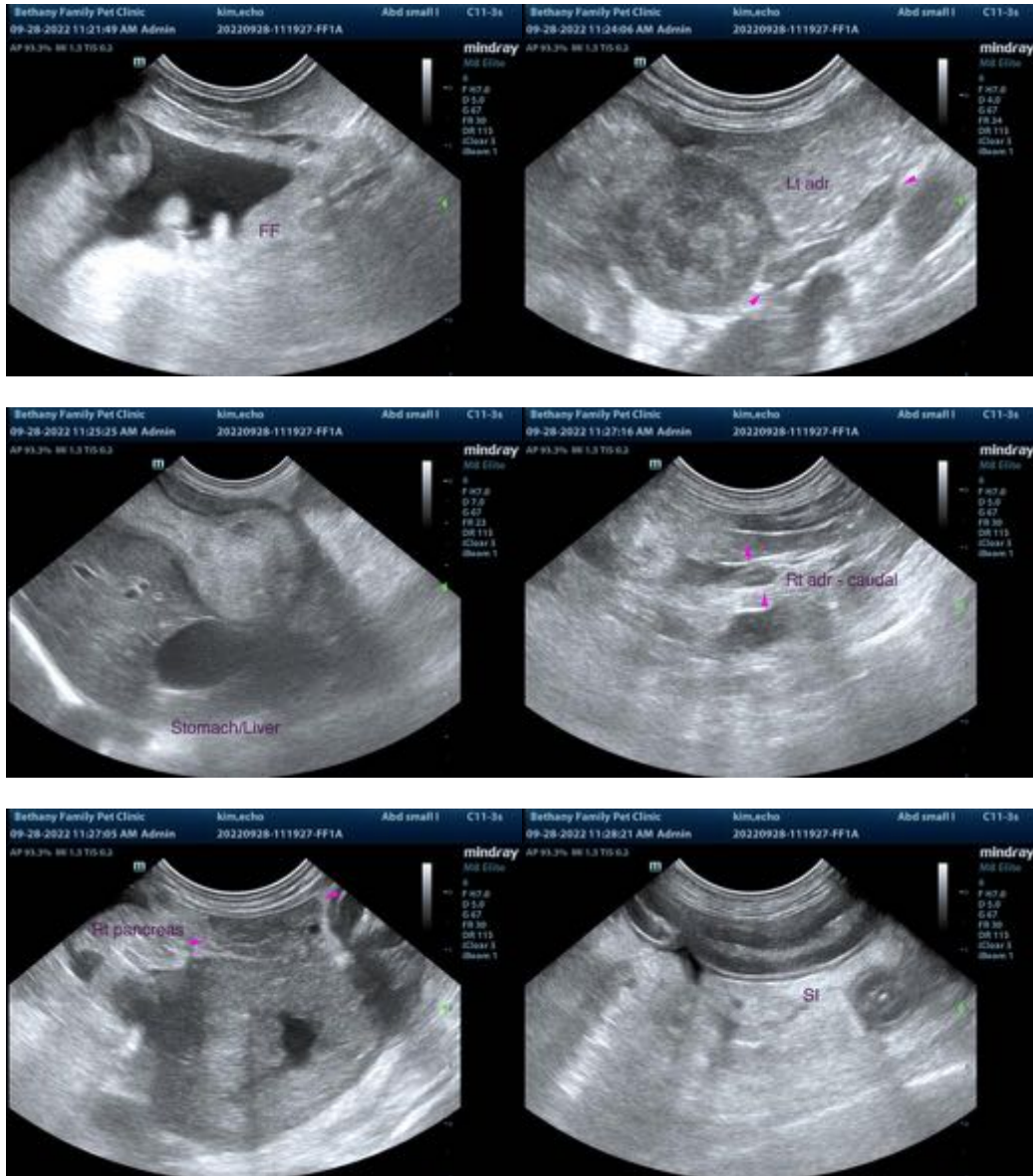
- Given the patient's history and sonographic bowel changes, a protein-losing enteropathy is suspected. Top differentials include inflammatory bowel disease, lymphangiectasia, infectious/parasitic disease, or less likely, emerging lymphoma.
- Diffuse peritonitis is present, likely secondary to bowel pathology.
- If the patient was fasted for this study, the presence of ingesta within the gastric lumen could suggest delayed gastric emptying.

Secondary Findings

- The pancreatic changes may be a normal variant for this patient or could be consistent with mild, chronic pancreatitis. Correlation with clinical findings is recommended.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Despite the negative fecal evaluation, prophylactic deworming with fenbendazole should be considered.
- A malabsorption panel including serum cobalamin and folate, TLI and PLI is recommended.
- A low-fat, limited antigen or hypoallergenic diet trial should be considered.
- Consider empirical treatment for small intestinal bacterial overgrowth with a 4-week course of Tylosin (in lieu of Metronidazole).
- Ultimately, GI biopsies (endoscopic or surgical) may be necessary to get a definitive diagnosis.
- To assess for other concurrent causes of hypoalbuminemia, consider the following:
 1. Pre-and postprandial serum bile acids
 2. Resting cortisol level
 3. UPC (if proteinuria is present)



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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