



PATIENT

Bella Bettencourt

SPECIES

Canine

BREED

Puggle

SEX

FS

AGE

7 years

WEIGHT

19.6 lbs

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Pamela Harrigan, RDCS,
Certified Veterinary
Sonographer

HOSPITAL NAME

Norfolk County
Veterinary Service

REFERRING VET

Dr. Amelia Ragon

INVOICE

11079

DATE

1/8/2026

PRESENTING CLINICAL SIGNS

Presented for dental with slab fracture. Pre-op BW revealed abnormal findings. Patient doing well with no clinical signs at home. Previous history of uroliths. TP 3.7, Alb 1.5, Glob 2.2. On Apoquel.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots, as well as dependent mineral "sand" (crystals) debris. Both sterile inflammation as well as urinary tract infection can present with echogenic debris. No masses or discrete definitive cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The right kidney is normal is size (5.37 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. Several small, non-obstructive nephroliths are noted with a larger one present measuring 0.8 cm in diameter. There is no evidence of pyelectasia or infarcts observed.

The left kidney is normal is size (4.85 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. One large non-obstructive nephrolith is noted measuring 1.4 cm in diameter. There is no evidence of pyelectasia or infarcts observed.

Adrenal Glands

The right adrenal gland is normal in size (0.32 cm at cranial pole and 0.4 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.35 cm at cranial pole and 0.46 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Spleen

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). There are two discrete non-capsular disrupting hypo- to anechoic nodules are noted mid spleen, both measuring 0.4 cm x 0.6 cm in size. Splenic vasculature appears normal.

Liver

The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal



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The visible stomach wall is normal in thickness and layering. The stomach is moderately distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. If patient was appropriately fasted, delayed gastric emptying could be considered. Non-shadowing foreign material is considered less likely but cannot be definitively ruled out.

If clinical signs are consistent (vomiting, etc.), recommendations include supportive medical care, 24 hours fasting and re-image.

The visible small intestines are normal in wall thickness and layering. Hyperechoic mucosal fogging or speckling is noted. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction or foreign material.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The pancreas that is observed appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no visible free peritoneal effusion noted in these images.

Mesenteric and medial iliac lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

PRIMARY FINDINGS

- Mucosal speckling – Mucosal speckling is often present with inflammatory bowel disease (IBD). It is not specific for type or severity of disease. Mild speckling change can occur as a normal patient variant in the post-prandial state.
- Mildly reactive mesenteric and medial iliac lymph nodes – infiltrative neoplastic disease cannot be ruled out but is considered less likely.

SECONDARY FINDINGS

- Mild gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.
- Hypo to anechoic splenic nodules – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.



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- Bilateral non-obstructive nephroliths and a small amount of echogenic urinary bladder mineral/sand debris.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

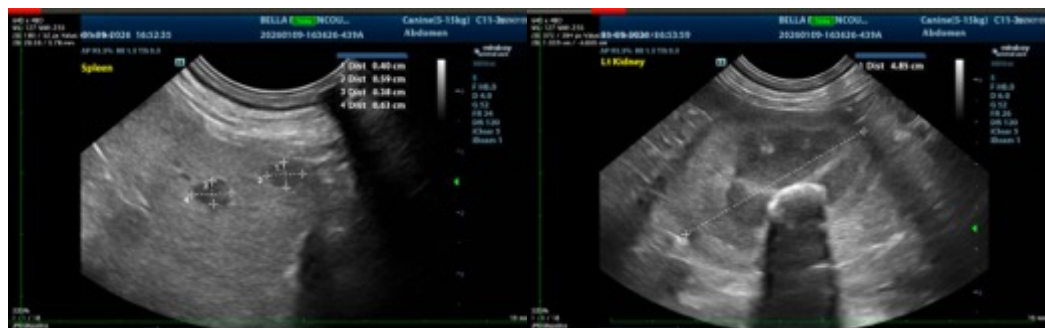
Given the appearance of the ultrasound, patient's reported hypoalbuminemia could be secondary to infiltrative bowel disease and concurrent protein losing enteropathy.

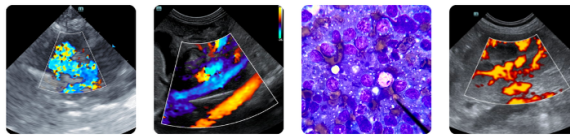
Having said that, further workup of hypoalbuminemia includes:

- Urinalysis and, if indicated based on urinalysis results, urine culture is recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.
- A baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.
- A routine fecal/giardia exam is recommended if not recently evaluated.
- A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.
- A fecal enteropathogen PCR panel to Texas A&M GI Laboratory could be considered for further evaluation of possible infectious disease. Contact lab for recommendations on how long to discontinue antibiotics (if indicated) prior to obtaining a stool sample for submission.

If a diagnosis is not obtained, additionally, bile acids could be considered if patient's total bilirubin is not increased.

Other than supportive/symptomatic medical management of clinical signs, further treatment recommendations are largely dependent on results of the above





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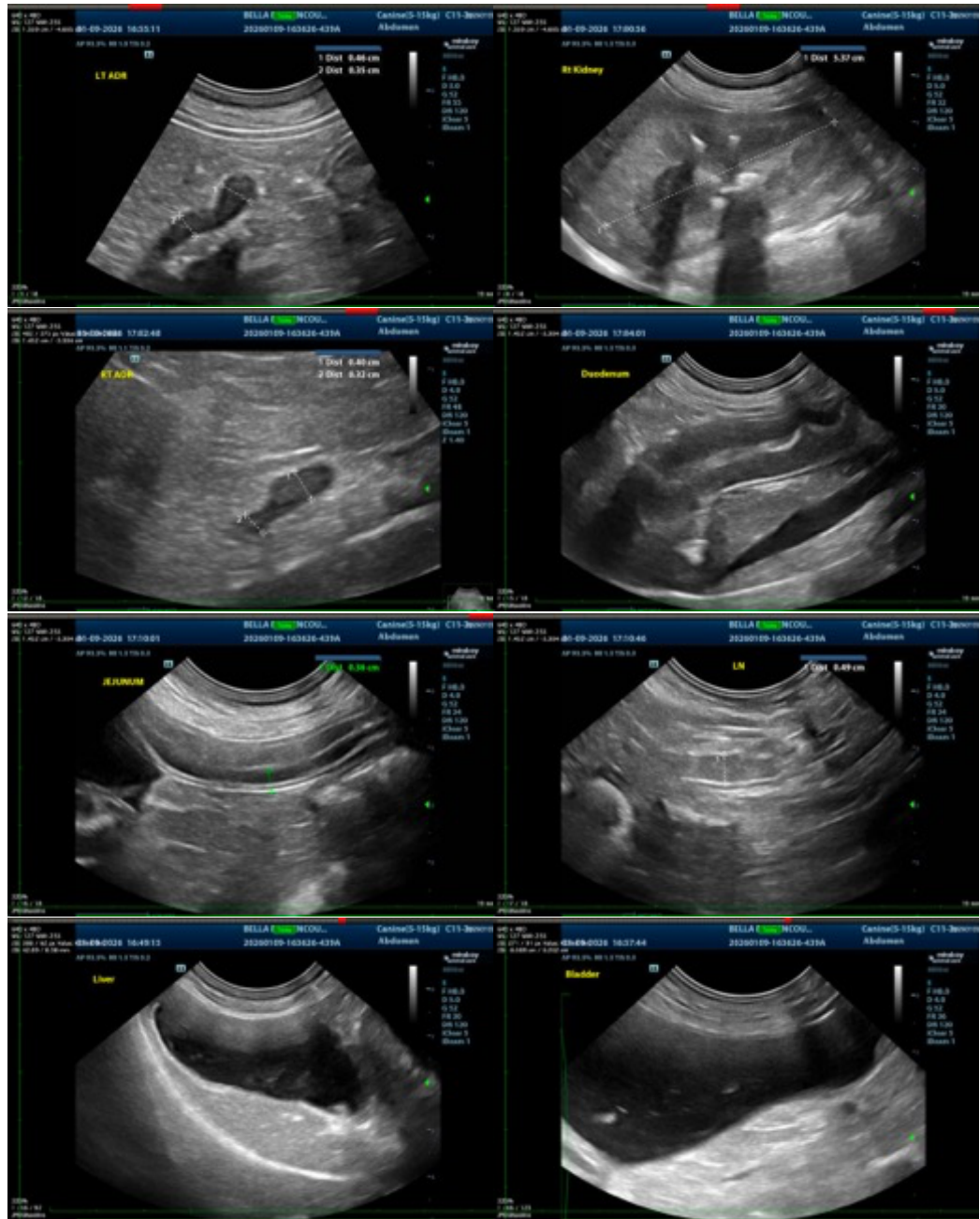
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM

info@sonopath.com