

**DATE PRESENTING CLINICAL SIGNS**

1/6/23

**PATIENT**

History: Overall fairly healthy older patient. Recently developed some vomiting and decreased appetite. Lab work revealed suspicion for pancreatitis. Patient improved on strict low fat rx diet, but pancreatic values have continued to rise. PE is unremarkable for age. Not currently vomiting and appetite is good.

Buddy Loftus

**SPECIES**

Current Medications: i/d LF diet, Dasuquin advanced soft chews

Canine

Lab Results: 11/22/2022: CBC WNL; SDMA=17; amylase=1609, Lipase=>1800, CPL=1314. trace hematuria (6-10 rbc)--free catch sample. 12/7/22: repeat free catch u/a--trace hematuria about 8 rbc/hpf. 12/22/22: amylase= 1689 ; lipase= >1800 ; cPL= 2000

**BREED**

Date of Previous IntraPet Ultrasound: No previous.

Bichon Frise

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Declined at this time.

Imaging Performed By: Stephanie Warga RDCS, RVT.

**SEX****ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Neutered Male

**Urinary System****AGE**

The urinary bladder is moderately distended with anechoic urine. The bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2.0 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

8/16/06

**WEIGHT**

The prostate is normal in size (0.79 cm) and shape for this neutered male dog. The parenchyma is homogenous, and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

16 Pounds

**INTERPRETED BY**

The left kidney has a normal shape and size (3.44 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is significant inflammation visualized medial to the kidney and scant effusion. There is no evidence of nephroliths, infarcts or hydronephrosis. Renal vasculature is normal. Small cortical cysts are noted. Pyelectasia is present, measuring 0.17 cm.

Kathleen Sennello DVM,  
MS, Diplomate ACVIM  
(Small Animal Internal  
Medicine)

The right kidney has a normal shape and size (4.14 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is significant perinephric inflammation and scant effusion. There is no evidence of nephroliths, infarcts or hydronephrosis. Renal vasculature is normal. Pyelectasia is present, measuring 0.28 cm. Small cortical cysts are noted.

**HOSPITAL NAME**

Greenbrier VC

**Adrenal Glands****REFERRING VET**

The left adrenal gland is normal in size measuring 0.66 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Dr. Streett

The right adrenal gland is not clearly visualized. The region of the right adrenal gland appears to have severe patchy, almost nodular inflammation with scant effusion. There is a questionable amorphous mass effect, measuring 2.25 cm x 1.97 cm in the region of the right adrenal gland, which could represent a ruptured right adrenal gland and lack of any definitively recognizable tissue. Alternatively, the severe inflammation in the region could be obscuring visualization of the right adrenal.

**INVOICE**

20469

**Spleen**

The spleen is subjectively normal in size and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are

present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

### ***Liver***

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

### ***Gastrointestinal***

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.48 cm in wall thickness) and the jejunum measured as normal (0.31 cm) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### ***Pancreas***

The region of the left limb of the pancreas appears severely inflamed and hyperechoic with patchy omentum, almost nodular. Clear pancreatic tissue cannot be seen. The right cranial aspect of the right limb of the pancreas appears relatively normal.

### ***Free Abdomen***

There is scant free abdominal fluid. No lymphadenopathy is noted. There is severe mesenteric inflammation noted in the medial aspect of the abdomen, between the region of the kidneys and slightly more pronounced around the right kidney. The mesentery is hyperechoic and edematous with a patchy almost nodular appearance. It is likely that the left limb of the pancreas is running through this tissue but cannot clearly be identified. Additionally, the right adrenal gland cannot be identified.

### ***Other***

Ring down artifact is visualized at the level of the diaphragm. Recommend three view thoracic radiographs.

## **ULTRASONOGRAPHIC FINDINGS**

### **Primary Findings**

- Decreased corticomedullary distinction in both kidneys with small cortical cysts and pyelectasia. The bilateral renal findings are consistent with age-related change. Pyelectasia of the kidneys could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

- Heterogenous liver- The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Perinephric and mid abdominal inflammation with almost a patchy nodular appearance and scant free fluid. Findings are most consistent with peritonitis.

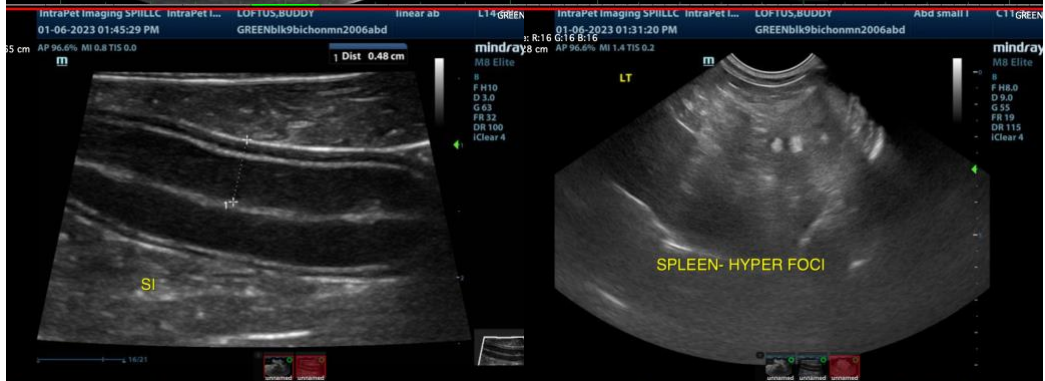
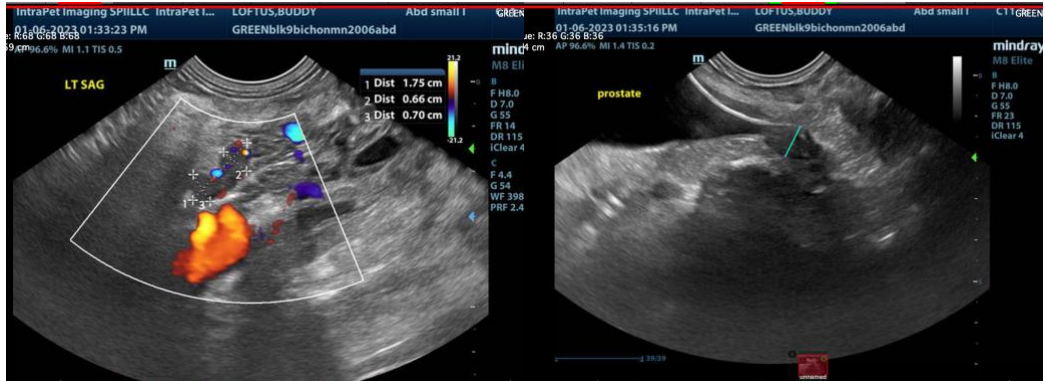
### Secondary Findings

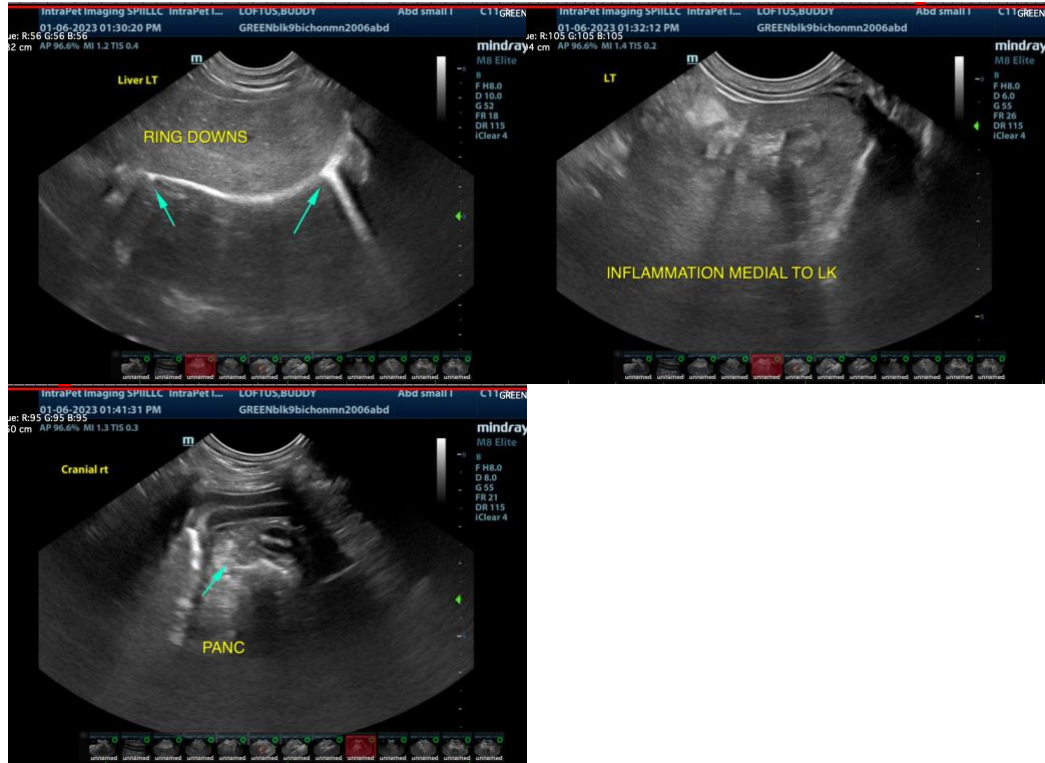
- Hyperechoic foci visualized in the spleen. These are likely consistent with benign myelolipomas.
- Moderate gallbladder debris- The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

### INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a severe focus of inflammation in the mid abdomen, which appears somewhat focused in the region of the right kidney, although it is relatively diffuse. The mesentery appears nodular and patchy, obscuring clear visualization of the left limb of the pancreas and the right adrenal. Based on the history provided, I'm concerned about the possibility of a ruptured right adrenal gland or less likely necrotizing pancreatitis of the left limb and pancreas. I recommend three view thoracic radiographs and ideally, a contrast CT scan of the abdomen to better delineate the source of this inflammation. Alternately, referral to a veterinary surgeon could be considered for exploration of this region. I recommend a blood pressure evaluation and a coagulation profile. Additionally, a fine needle aspirate of this region could be considered, looking for evidence of inflammation, any infectious organisms, etc.







**The information and recommendations provided are based on the images presented by the referring veterinarian. 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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)  
kathleen.sennello@sonopath.com