

**DATE PRESENTING CLINICAL SIGNS**

3/24/26

Patient History: P historically has elevated liver enzyme levels. P also has a heart murmur and enlarged heart on rads. P has been hyporexic for almost a year. Getting her to eat is a real challenge for the O. HMG 3/6 systolic.

PATIENT

Sadie Miller

Current Medications: Vetmedin 5mg 1/2 BID- 3mo, Lasix 12.5mg 1/2 SID- BID- 3mo, Ursodiol 250mg 1/4 SID years, Mirtazapine 15mg 1/2 SID 1 mo, i/d diet

SPECIES

Canine

Labwork Results: Labwork attached, reported as: increased heart size on rads, ALP>2000, ALT 158, lipase 2121

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Torbugesic.

Stat Report: Not requested.

BREED

Pug

Imaging Performed by: Stephanie Warga RDCS, RVT.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**SEX**

Spayed Female

Urinary System

The urinary bladder is adequately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

AGE

9/13/12

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of mineral or infarcts observed. Left kidney measured 5.4 cm. Right kidney measured 6.0 cm. Trace pyelectasia noted bilaterally.

WEIGHT

32.2 lbs

INTERPRETED BY
 Beth Johnson, DVM
 DACVIM
Adrenal Glands

The right adrenal gland is normal in size (0.98 cm at cranial pole and 0.54 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. A hyperechoic nodule is noted in the cranial pole. Nodule does not disrupt normal shape and/or architecture. Visible surrounding vasculature appears normal.

HOSPITAL NAME
 Greenbrier Veterinary
 Clinic

The left adrenal gland is normal in size (0.44 cm at cranial pole and 0.77 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

REFERRING VET

Dr. Dellinger

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). No focal nodules or masses are observed. Splenic vasculature appears normal.

INVOICE

73981

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is markedly heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Adjacent to the gallbladder is an approximately 2.9 cm in diameter area that is subjectively

subtly more focally heterogeneous than the remaining parenchyma. While not definitive, an emerging mass lesion can't be ruled out. 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

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

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

The visible colon is mildly thick, measuring 0.34 cm thick with normal intact layering. The lumen is empty.

Pancreas

The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogeneous and coarse. 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.

There is no apparent pathologic lymphadenopathy noted in these images.

PRIMARY FINDINGS

- The markedly heterogeneous liver could represent a benign process such as nodular hyperplasia, steroid or vacuolar hepatopathy, extramedullary hematopoiesis, or a chronic inflammatory disease versus other, although infiltrative neoplasia including round cell neoplasia, metastatic neoplasia, or, given the subtly more focally heterogeneous area in the mid liver, primary hepatocellular carcinoma can't be definitively ruled out without tissue sampling.
- Moderate 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.
- Pancreatic age-related remodeling/Chronic pancreatitis - Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

- The mildly thick colon trends in appearance toward benign, as can be seen with parasitic, infectious or other benign inflammatory, dietary related, etc. disease. Infiltrative neoplasia is thought less likely but can't be ruled out without tissue sampling.

SECONDARY FINDINGS

- Hyperechoic adrenal nodule (cranial pole right adrenal gland) – Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.
- Age related kidney changes with trace bilateral pyelectasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

Fine needle aspirates of the liver are recommended if patient's coagulation status is appropriate.

In the meantime, given patient's reduced appetite, if a diagnosis is not made, further gastrointestinal workup recommendations include:

A baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

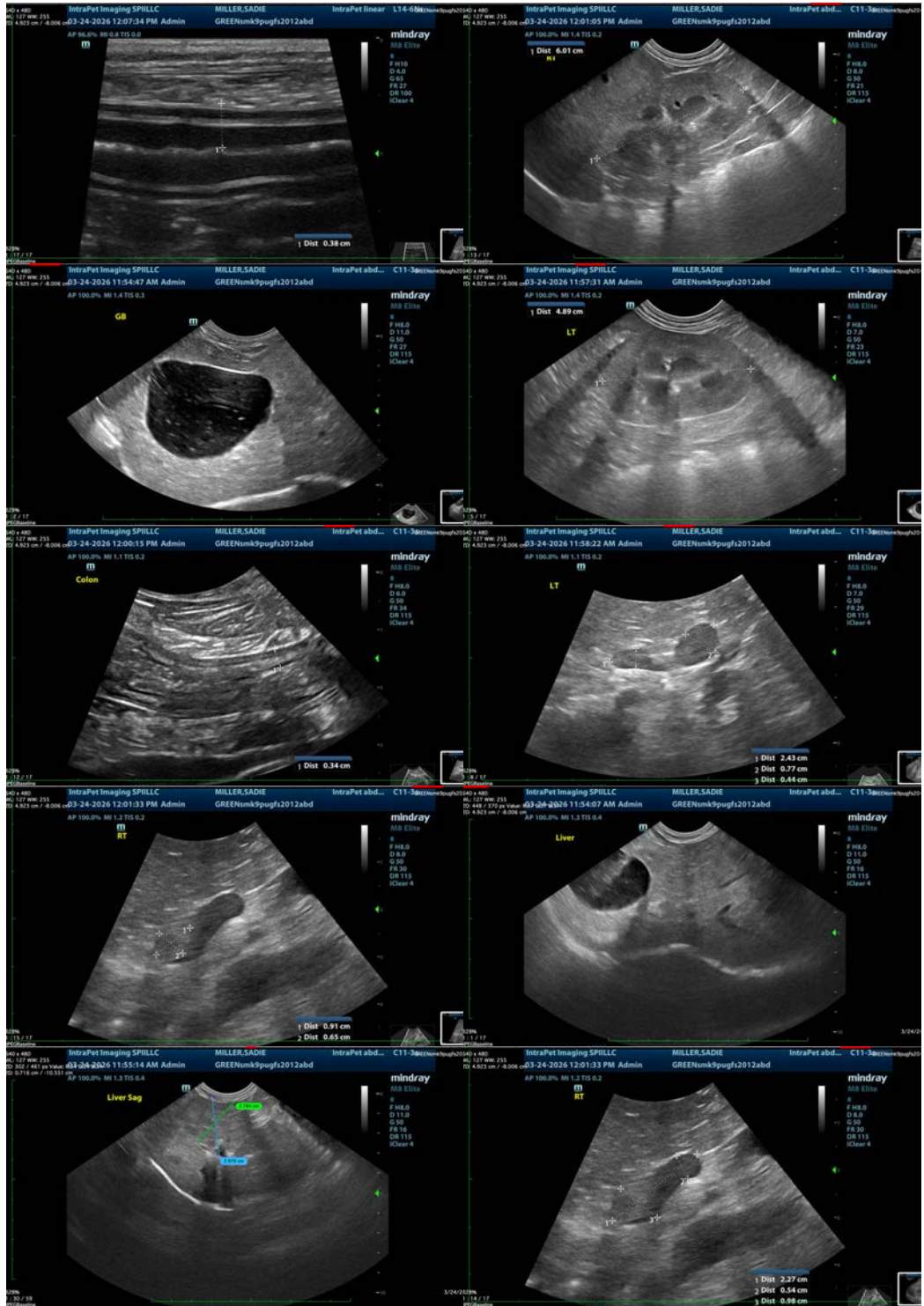
A routine fecal/giardia exam is recommended if not recently evaluated.

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.

Ultimately, sampling of the mildly thick colon via colonoscopy could be considered if a diagnosis is not obtained.

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



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