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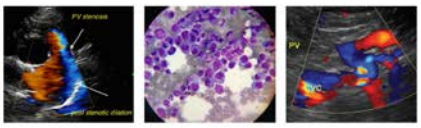


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Chloe Allen

SPECIES

Canine

BREED

Maltese

SEX

Spayed Female

AGE

16 Years

WEIGHT

5 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Sara Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Grace Zhang

INVOICE

43950

DATE

1/4/23

PRESENTING CLINICAL SIGNS

chronic waxing & waning inappetence and GI upset (diarrhea +/- vomiting). Owner thinks borborygmi and GI disturbances are worse recently (e.g. won't eat when has more borborygmi, then will not have bowel movement before bedtime but then will defecate several times through night that progressively becomes liquid/bloody) Hx of bladder stones and cystotomy

Abnormal PE/Chem/CBC/UA Results: 11/21/2022 CBC = NSF. BUN = 35mg/dL (Creatinine = 0.6mg/dl) Physical exam normal.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.47 cm). Mucosa is hyperechoic and irregular. No masses observed. A 0.27 cm cystolith is present. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

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 pyelectasia, mineral or infarcts observed. The right kidney measures 3.51 cm. The left kidney measures 3.31 cm. Small cortical cysts noted bilaterally.

Adrenal Glands

The right adrenal gland is normal in size (0.80 cm at the cranial pole and 0.52 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (1.38 cm long x 0.30 cm at the cranial pole and 0.49 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

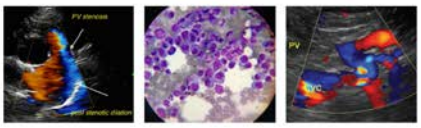
Spleen

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). A 1.0 cm x 1.4 cm, primarily homogeneous, iso- to hypoechoic nodule is noted causing a splenic bulge near the head of the spleen. 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. A 3.5 cm x 3.8 cm primarily homogeneous, hyperechoic mass is noted in the deep mid liver. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as moderate 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.



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Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) 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 (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). 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 colon is diffusely thick with normal layering present, measuring 0.41 cm thick. In the mid abdomen, the colon is surrounded by hyperechoic enhanced mesentery. Contents are consistent with normal formed feces and gas.

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

The mesenteric 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

- **Homogeneous, hyperechoic liver mass** – Concerning for infiltrative neoplasia such as a primary hepatocellular carcinoma versus other (i.e., infiltrative round cell neoplasia). However, a benign hepatoma/adenoma, marked nodular hyperplasia, etc. can mimic neoplastic nodules and cannot be differentiated without tissue sampling.
- **Iso- to hypoechoic splenic nodule** – This may represent a benign lesion such as nodular hyperplasia, extramedullary hematopoiesis, etc. However, infiltrative neoplasia, including round cell neoplasia can mimic benign lesions and cannot be ruled out without tissue sampling.
- **Diffusely thick colon** – Consistent with a colitis resulting in this patient's reported hemorrhagic diarrhea. Differentials include parasitic or infectious disease versus infiltrative benign inflammatory disease or even infiltrative neoplasia.
- **Reactive mesenteric lymph nodes –** infiltrative neoplastic disease cannot be ruled out but is considered less likely.

SECONDARY FINDINGS

- Age related kidneys with small cortical cyst bilaterally
- **Chronic Cystitis with small cystoliths noted -** Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- **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

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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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given this patient's historical gastrointestinal signs including hematochezia, recommendations include:

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 exam is recommended if not recently evaluated. A fecal enteropathogen PCR panel to Texas A&M GI Laboratory could be considered for further evaluation of possible infectious disease.

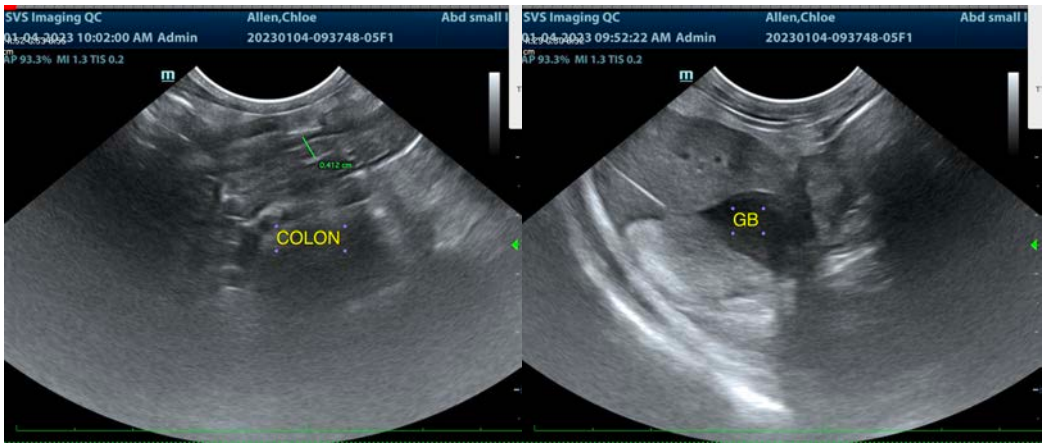
Additionally, A baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

Ultimately, biopsies of the GI tract, especially colonoscopy for colon biopsies may be necessary to definitively diagnose and therefore adequately manage the suspected infiltrative disease.

In the meantime, empirical deworming with a 5-day course of Panacur is recommended, as is a probiotic such as Visbiome or Proviable +/- an antibiotic such as Metronidazole or Tylosin. Additionally, if tolerated, a transition in diet to a high fiber/colitis diet could be considered.

The splenic and liver lesions described above are likely not related to this patient's diarrhea. However, they should be further evaluated, and recommendations include a fine needle aspirate of both the splenic nodule and the liver mass if patient's coagulation status is appropriate.

Additionally, 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.



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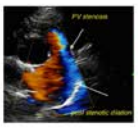
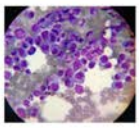
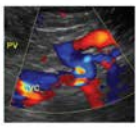

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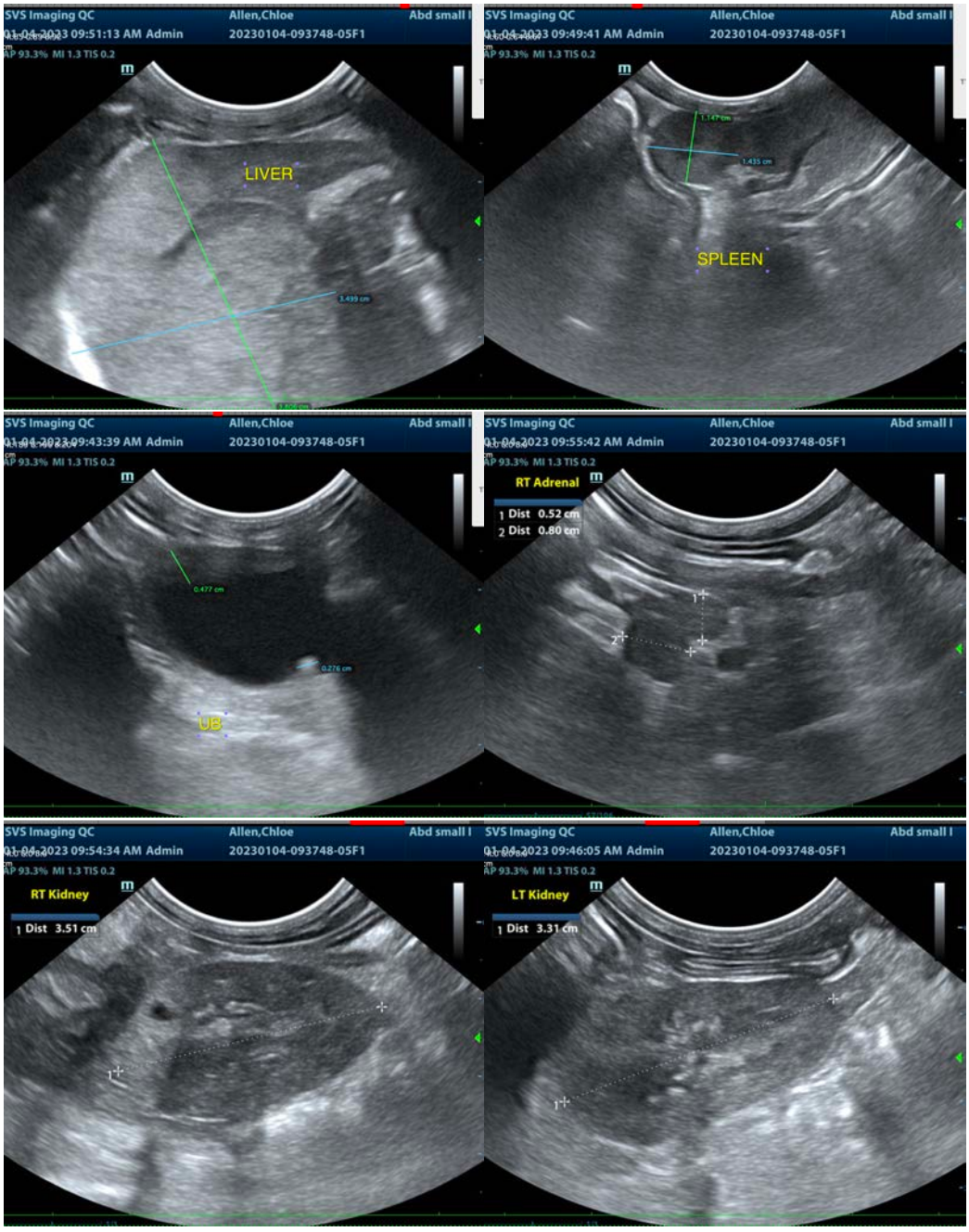

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Beth.Johnson@sonopath.com