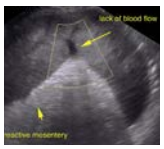
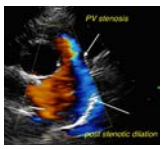
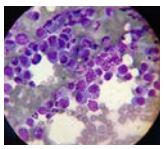
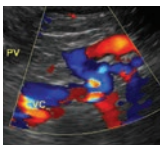
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com
1-800-838-4268 info@sonopath.com

**PATIENT**
Sally Vigil

**SPECIES**
Canine

**BREED**
Cattledog x Sheepdog

**SEX**
Spayed Female

**AGE**
14 Years

**WEIGHT**
27 Pounds

**INTERPRETED BY**
Beth Johnson, DVM DACVIM

**IMAGING PERFORMED BY**
Carter

**HOSPITAL NAME**
Willamette VH

**REFERRING VET**
Dr. Neuhaus

**INVOICE**
46576

**DATE**
4/12/23

## PRESENTING CLINICAL SIGNS

Presented for annual on 3-29-23. Long term history of skin allergies. Based on pre-op labs started on amoxicillin for UTI prior to dental. Dental on 4-5-23. Meds: Apoquel 16mg daily, acetaminophen 400mg/30mg BID, sx meds: carprofen 25mg. Next day anorexia, lethargy, pacing, restless. Treated as outpatient with GI support meds. Presented again 4-8 with bloody diarrhea. Has been hospitalized with iv fluids, metronidazole, pain meds, GI support. Still profuse hemorrhagic diarrhea and not eating. Weight loss.

Abnormal PE/Chem/CBC/UA Results: 3-29-23: ALP 220 IU/L Cholesterol 333 mg/dL Triglyceride 435 mg/dL PSL 201 U/L USG 1.012 WBC 11-20/HPF Rods>100/HPF T4 <0.5 ug/dL 4-8-23: ALT 153

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is moderately 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.

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 left kidney measures 5.78 cm. The right kidney measures 6.6 cm.

### *Adrenal Glands*

The right adrenal gland is unable to be well visualized in these images.

The left adrenal gland is normal in size (0.53 cm at the cranial pole and 0.67 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

### *Spleen*

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). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Splenic vasculature appears normal.

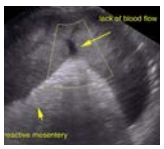
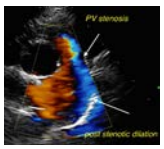
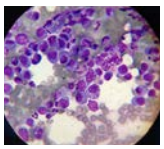
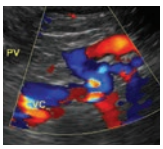
### *Liver*

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

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

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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 visible colon is normal in wall thickness (< 0.2 cm) and layering. 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.

There is no apparent lymphadenopathy noted in these images.

## PRIMARY FINDINGS

- **Heterogenous Liver –** These changes can occur with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease, but given the marked heterogenicity seen here, infiltrative neoplasia including round cell neoplasia or metastatic neoplasia, etc. are also possibilities and can't be ruled out without tissue sampling.

- **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.

## ULTRASONOGRAPHIC FINDINGS

- Age related kidney changes

- **Hyperechoic splenic nodules –** most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely.

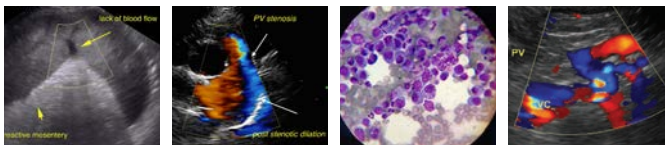
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

If not already evaluated as part of the metabolic health screen, full coagulation panel is recommended to rule out a coagulopathy contributing to the gastrointestinal bleed. Additionally, other diagnostic considerations, given the lack of improvement with supportive care could 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 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.



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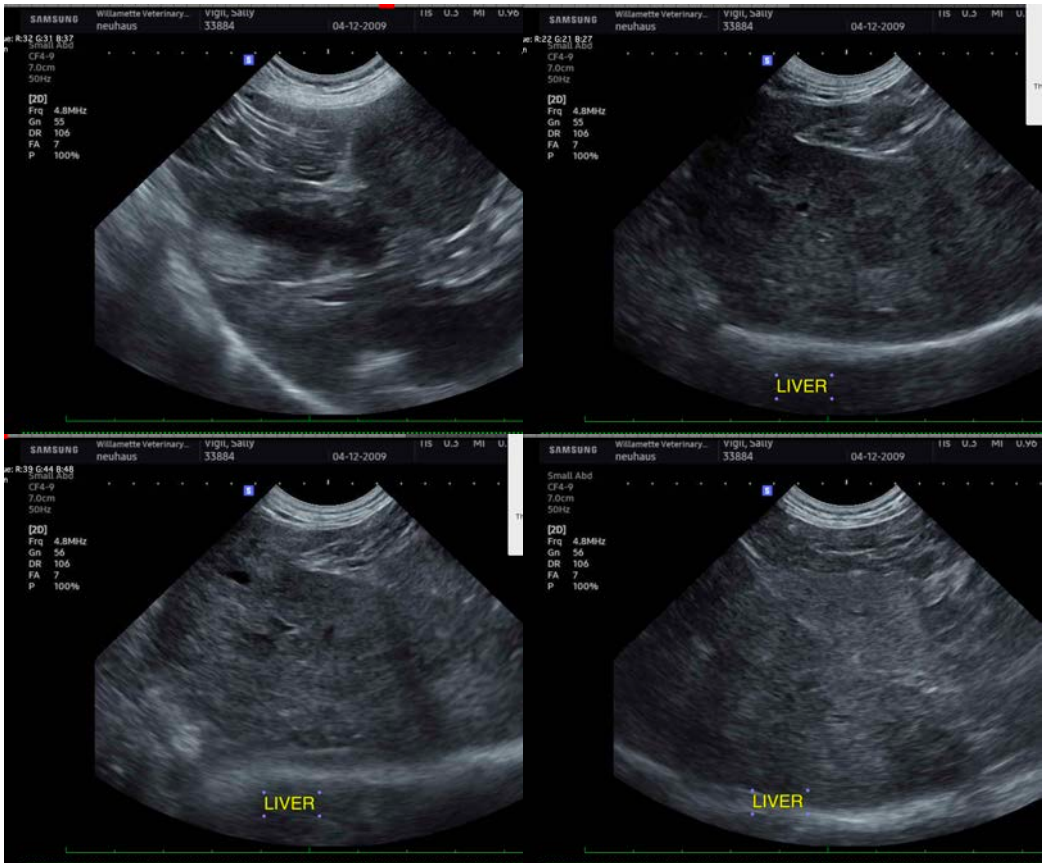
Additionally, a fine needle aspirate of the liver could be considered if patient's coagulation status is appropriate.

In the meantime, supportive/symptomatic medical management of clinical signs/possibly HGE is recommended in the form of antiemetics, gastroprotectants including Sucralfate, appetite stimulants, a probiotic such as Visbiome or Proviable, empirical deworming with a 5-day course of Panacur, +/- Metronidazole or Tylosin. Additionally, nonsteroidal therapy should be discontinued if patient's quality of life is appropriate without nonsteroidal therapy.

Ultimately, if clinical signs persist and a diagnosis is not reached, further evaluation of the GI tract via upper and lower endoscopy/colonoscopy for visualization of biopsies may be warranted.



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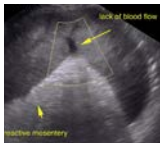
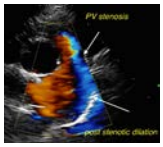
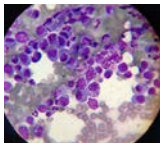
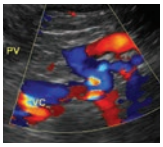

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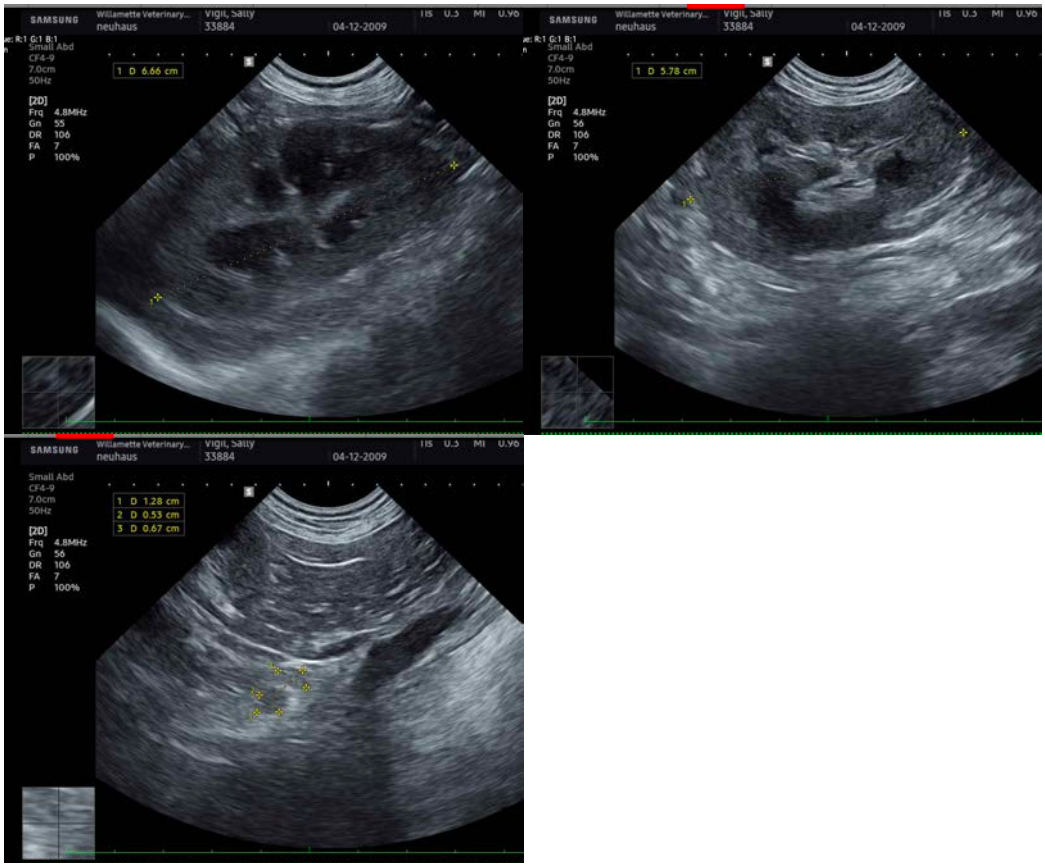


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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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