



**PATIENT**

Georgie Girl McCullough

**SPECIES**

Canine

**BREED**

Havanese

**SEX**

Spayed Female

**AGE**

13 years

**WEIGHT**

14.8 lbs

**INTERPRETED BY**

Andrea Nicastro, DVM,  
Diplomate ACVIM (*Small Animal Internal Medicine*)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

West Hills AH

**REFERRING VET**

Dr. Remcho

**DATE**

5/25/22

**INVOICE**

10966

**PRESENTING CLINICAL SIGNS**

**History:** Chronic liver enzyme elevation without clinical signs. In the last 3 mos. values have doubled. P is in need of anesthesia for dental procedure therefore O is ready to move forward with more diagnostics. HX of vasculitis episode (one entire pinna) and SLO but not taking any treatments at this time. Radiographic Findings November 2021, Five radiographs of the thorax and abdomen were reviewed. The cardiac silhouette appears mildly enlarged, however this is not attributed to a particular chamber. The pulmonary vasculature is unremarkable. The pulmonary parenchyma is within normal limits, with no evidence of pulmonary edema, pneumonia, soft tissue nodules or other abnormality. There is also no evidence of thoracic lymphadenopathy or pleural effusion. Abdominal serosal detail is within normal limits. The liver and spleen are of normal size and shape. The kidneys appear symmetric and within normal size limits and the urinary bladder is mildly distended. There is mild fluid and gas filling of the G.I. tract. There are shoulder and elbow degenerative changes noted. **Assessment:** Mild cardiomegaly, most consistent with acquired valvular disease. There is no evidence of cardiac decompensation/pulmonary edema. Otherwise unremarkable thorax. Unremarkable abdomen. Shoulder and elbow degenerative joint disease. **Primary Question/Differential to Be Answered in This Exam overall senior screening with special focus on liver health**

**Abnormal PE/Chem/CBC/UA Results:** ALT 486, AST 51, ALP 224

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The left kidney is normal size (4.33 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild to moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

The right kidney is normal in size (4.40 cm in length) with a normal shape, smooth peripheral margins, and normal internal architecture. There is mild to moderate loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal size (0.40 cm at cranial pole) (0.44 cm at caudal pole) (1.60 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is normal size (1.14 cm at cranial pole) (0.53 cm at caudal pole) (1.48 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are



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unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

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### Spleen

The spleen is normal in size (0.85 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

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### Liver

The liver is subjectively prominent in size with swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely heterogenous in appearance. There is a questionable 3.82 cm irregular, isoechoic, heterogenous mass deep on the right side, adjacent to the diaphragm. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1: 1.

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The gall bladder is of normal contours and contains some dependent echogenic debris. The wall is normal in thickness. No choleliths are observed. The cystic and common bile ducts are normal/not seen.

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### Gastrointestinal

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

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### Pancreas

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated (0.17 cm in diameter). There is no evidence of peripancreatic inflammation or effusion.

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### Free Abdomen

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

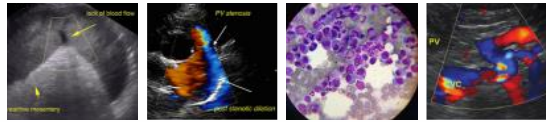
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## ULTRASONOGRAPHIC FINDING



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## Primary Findings

- Questionable right hepatic mass adjacent to the diaphragm. This may represent a tumor or an area of excessive regenerative nodular hyperplasia. The diffuse hepatic parenchymal changes are nonspecific and could be secondary to an inflammatory hepatopathy (i.e., bacterial cholangiohepatitis, chronic active pancreatitis), hepatotoxicosis (i.e., copper), Leptospirosis, or other hepatopathy.
- Gall bladder debris – incidental

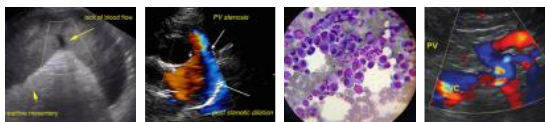
## Secondary Findings

- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Bilateral, chronic age-related renal changes with right dystrophic mineralization

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- If an aggressive approach is desired, consider an abdominal exploratory with assessment of the liver for masses, as well as liver biopsies (aerobic and anaerobic bile cultures) and acquisition of additional hepatic tissue samples for potential copper quantitation.
- Also consider Leptospirosis testing (i.e., blood and urine PCR, serology)
- If a conservative approach is desired, consider empirical treatment for bacterial cholangiohepatitis (amoxicillin-clavulanic acid, +/-metronidazole, Denamarin). If no improvement in the liver values is seen within 7-10 days of initiating therapy, antibiotics should be discontinued, and hepatic tissue sampling reconsidered. If liver values improve, continue therapy for at least 4-6 weeks and 1 week beyond normalization of the liver values. If this approach is taken, a repeat ultrasound is recommended in 3-4 weeks to assess for growth/progression of the suspected hepatic mass.





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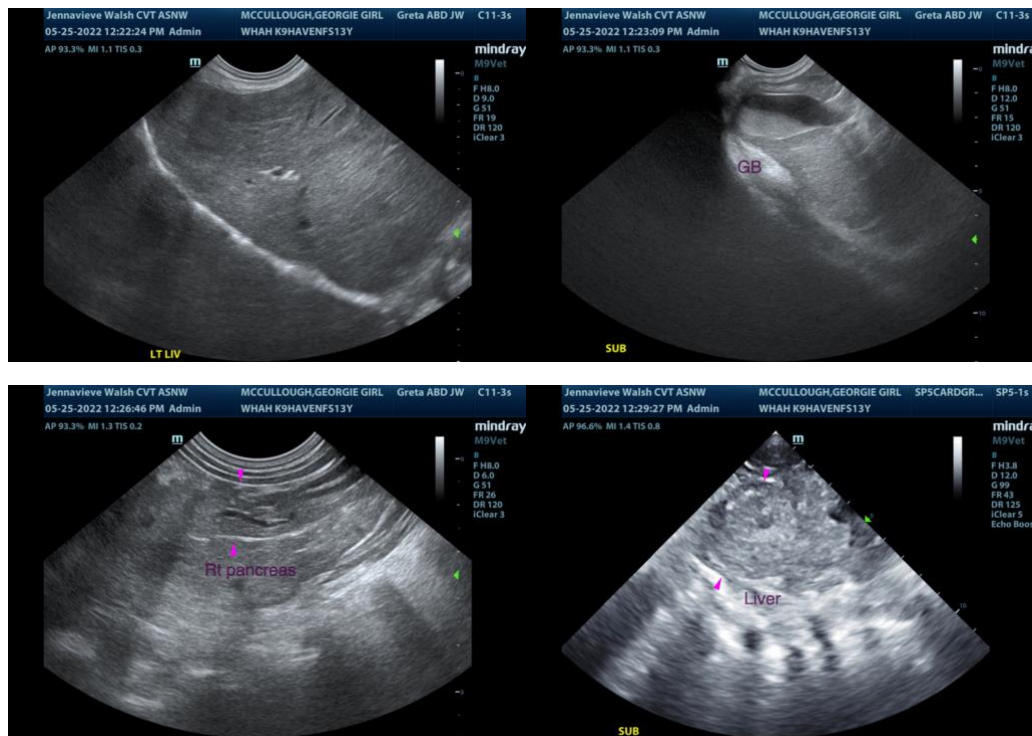
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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