



## PATIENT

Steeler McHenry

## SPECIES

Canine

## BREED

Golden Retriever

## SEX

Neutered Male

## AGE

12 Years 8 Months

## WEIGHT

92 lbs

## INTERPRETED BY

R. McKenzie Daniel,  
DVM, DABVP (Canine  
/ Feline Practice)

## IMAGING PERFORMED BY

Dr. Kimberly Morgan

## HOSPITAL NAME

Seven Fields  
Veterinary Hospital

## REFERRING VET

Dr. Kimberly Morgan

## INVOICE

16016

## DATE

05/09/26

## PRESENTING CLINICAL SIGNS

History of elevated liver values and copper storage disease; intermittent chronic diarrhea

Abnormal PE/Chem/CBC/UA Results: USG 1.021 UPC 0.7 ALP 488

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic change were noted.

Normal size and margination was present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 6.4 cm in length. The right kidney measured 6.4 cm in length.

### Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.64 cm width at the caudal pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.60 cm width at the caudal pole.

### Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Several to multiple mildly irregular noncapsule deforming hyperechoic nodules were present with an example measuring 1.1 cm in diameter. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory or neoplastic changes were not noted. The hyperechoic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

### Liver & Gallbladder

The liver was subjectively mildly enlarged in size. Mild to variable parenchymal remodeling and nonhomogenous parenchyma echotexture with indistinct portal vascular borders. Intermittent variably echogenic yet noncapsule deforming intraparenchymal nodular changes with mild nonhomogenous hypoechoic nodule measuring approximately 3.0 cm in diameter with hyperechoic nodule measuring approximately 1.4 cm in diameter.

The gallbladder was non distended in size with moderate nonorganized nondependent biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation.

### Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with mild lumen gas and no signs of ileus, obstruction or foreign material.



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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

Normal visible colon wall layers were present with current formed fecal matter in lumen.

## Pancreas

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

## Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

## ULTRASONOGRAPHIC FINDINGS

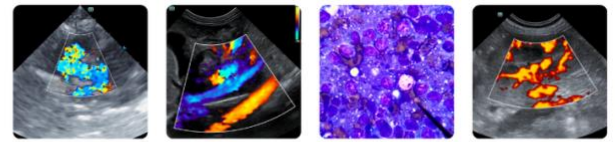
- Mildly enlarged nonhomogenous liver exhibiting lobar intraparenchymal variably echogenic nodules.
- Nonorganized gallbladder debris (non-mucocele).
- Mild age-related renal changes.
- Normal adrenal glands.
- Mild irregular hyperechoic splenic nodules- probable benign criteria such as irregular myelolipomas.
- Normal gastrointestinal tract with current formed fecal matter.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is suggestive of benign hepatopathy with considerations including previous diagnosis of hepatotoxicosis, i.e. copper storage disease, alternative non-specific chronic hepatitis, areas of nodular hyperplasia, lipogranulomas, fibrosis, or lobar fibrosis, vacuolar/cholestatic hepatopathy or combination are all potentials. Emerging hepatic neoplasia is thought less likely yet not technically excluded.

If no recent hepatic sampling, hepatic parenchyma and accessible non-homogenous hepatic nodule could be considered for further clarification. Hepatosupportive medications, empirical therapy for copper storage, hepatopathy, if clinically indicated with clinical and as needed sonographic monitoring would be more conservative. As needed gastrointestinal support which may include dietary therapy and high colony count probiotic may prove beneficial.





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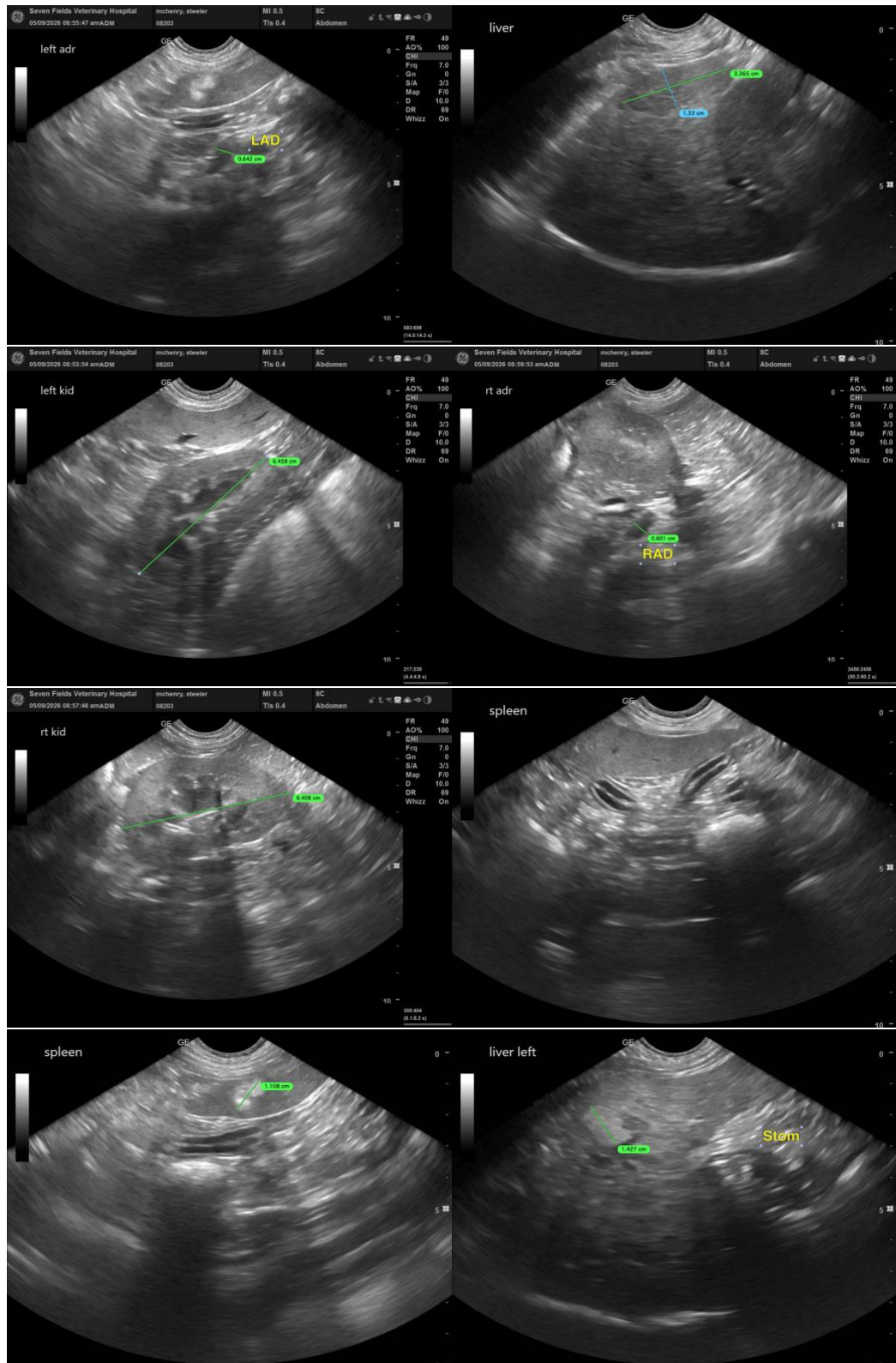
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

[info@SonoPath.com](mailto:info@SonoPath.com)