



**PATIENT**

Freckles Sexton

**SPECIES**

Canine

**BREED**

Schnoodle

**SEX**

Spayed female

**AGE**

12 years

**WEIGHT**

15.6 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Boley

**HOSPITAL NAME**

Animal Hospital of  
Colorado Springs

**REFERRING VET**

Dr. Boley

**INVOICE**

39640

**DATE**

9/27/22

**PRESENTING CLINICAL SIGNS**

History: Freckles has a history of elevated liver enzymes. Initially treated with amoxicillin, metronidazole, and Denamarin, and rechecked liver values 30 days later and was still elevated. No hx of PU/PD, etc. Owner has noticed that Freckles has been having off and on diarrhea for about a month. Abnormal PE/Chem/CBC/UA Results: 7-15-22 ALT-157; ALP-812 8-31-22-ALT-505; ALP-1060

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Hyperechoic medullary rim sign was noted with slight mineralization. The left kidney measured 4.7 cm. The right kidney measured 4.05 cm.

**Adrenal Glands**

The left **adrenal gland** was subjectively small and measured 0.33 cm. The right adrenal gland was not visualized.

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**Liver**

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.



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**Gastrointestinal**

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Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

**SEX**

Spayed female

**ULTRASONOGRAPHIC FINDINGS**

Age related renal changes, non-specific.

**AGE**

12 years

Benign hepatopathy. Inflammatory component, possible reactive hepatopathy.

**WEIGHT**

15.6 lbs

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

FNA of the liver could be considered for further definition. Screening for Addison's is warranted given that the left adrenal gland appears subjectively small and the right adrenal gland was not visualized. ACTH stimulation or baseline cortisol is indicated.

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The hepatic clinical sonographic presentation is most consistent with Reactive Hepatopathy which is the most common cause of liver enzyme elevation in dogs and cats. The presumption is that gut and other organ antigen stimuli may be causing a low-grade immune response through portal system with which the liver is reacting to causing low-grade enzyme elevations. US-guided FNA could be performed to assess if low grade lymphoplasmacytic inflammation is present that would support this theory. If FNA is performed, please ask the cytologist to emphasize the primary inflammatory cell type. Empirical treatment measures to address this issue can include diet change to hydrolyzed diet, probiotics, deworming, nutraceuticals (SAME, Actigall...), dental exam and cleaning, and potentially antibiotics such as Clavamox. Metronidazole and Tylosin have traditionally been utilized for this purpose but new studies show that both these antibiotics can disrupt the normal intestinal bacterial flora (intestinal dysbiosis) for weeks and up to 4-6 months. Therefore, Metronidazole and Tylosin should be utilized as a last resort if other efforts have not been effective and sonographic organ appearance remains benign.

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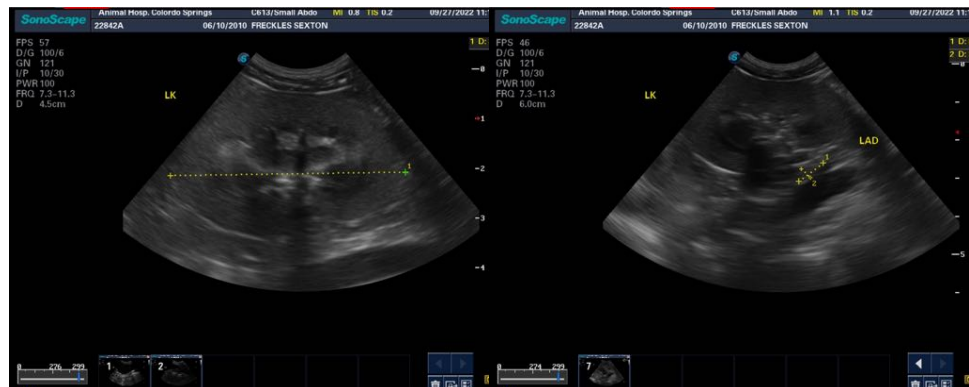
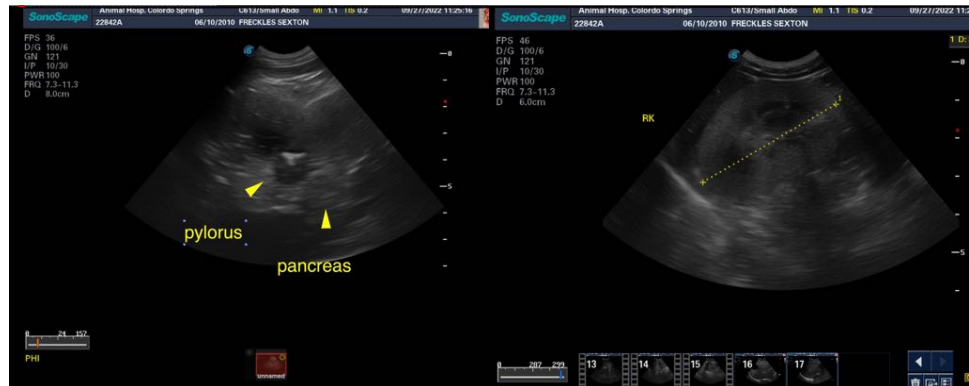
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
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