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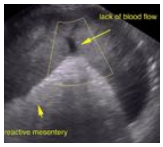

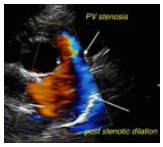

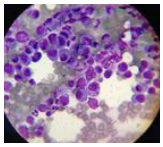
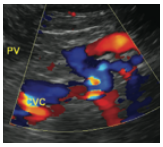

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1-800-838-4268 info@sonopath.com

PATIENT

Cooper Andrews

SPECIES

Canine

BREED

Sheltie

SEX

Neutered male

AGE

11 years

WEIGHT

34 lbs

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Bray

HOSPITAL NAME

Taylorsville VC

REFERRING VET

Dr. Bray

INVOICE

42792

DATE

11/29/22

PRESENTING CLINICAL SIGNS

History: PLN, progressing. Pancreatitis and now elevated ALT. P will not eat. He is drinking, but will not eat. No v/d. On Benazepril, Amlodipine, Cerenia, Entyce, Famotidine, SQF
Abnormal PE/Chem/CBC/UA Results: Discomfort in cranial abdomen, multiple lipomas and grade 3 dental disease. P appears <5% dehydrated.

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. A minor amount of sand was noted. The sand was non-obstructive. 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. Polycystic cortical changes were noted in both kidneys with mineralization. The right kidney measured 4.0 cm.

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 0.5 cm. The right adrenal gland measured 0.8 cm at the cranial pole and 0.4 cm at the caudal pole.

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. Hyperechoic, lipogranulomatous nodules were noted on the spleen and were not pathological. 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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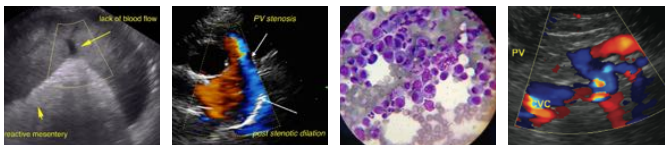

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Gastrointestinal

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. The iliac lymph nodes revealed a cyst that measured 2.0 cm.

Pancreas

The **pancreas** revealed heterogenous parenchymal changes and irregular contour, primarily in the right limb. This is consistent with chronic active inflammation.

ULTRASONOGRAPHIC FINDINGS

Low-grade, chronic active pancreatitis pattern.

Emerging gallbladder mucocele.

Age related renal changes with polycystic cortices and mineralization.

Minor bladder sand.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Right subxiphoid palpation is recommended to assess for pain. Ursodiol therapy. Ursodiol therapy is recommended over the next 6 weeks. FNA of the liver is recommended given the ALT elevation, yet this is likely reactive hepatopathy. Diet change to a geriatric, hydrolyzed diet may be in the patient's best interest. 10-days of Metronidazole and probiotics may also prove fruitful.

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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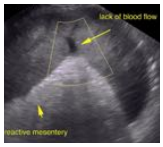
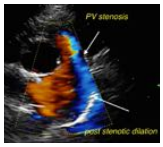
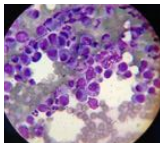
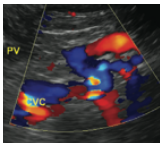

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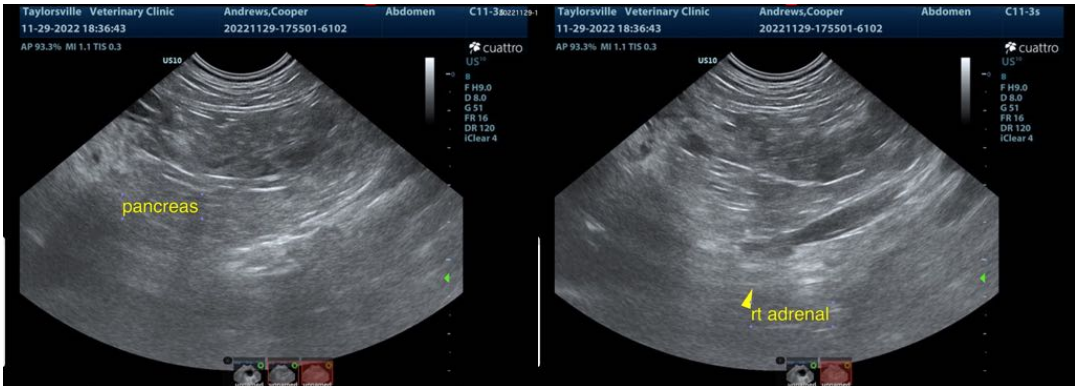

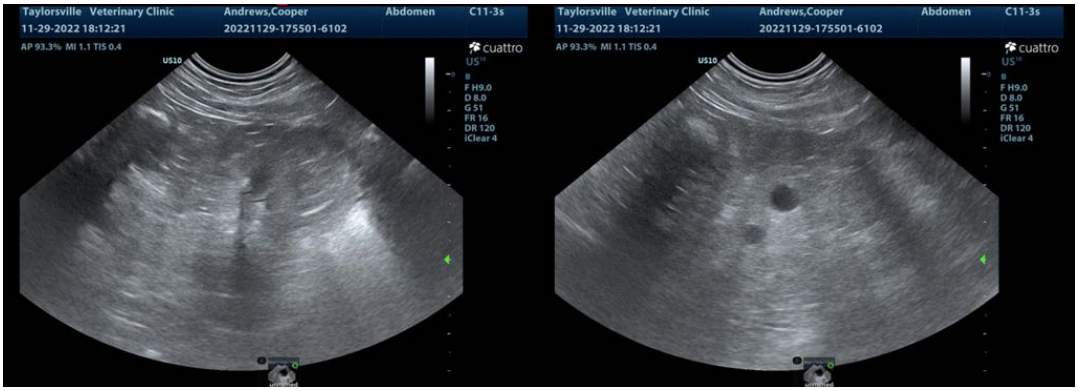

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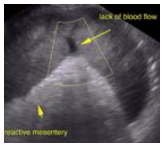
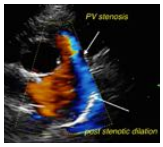
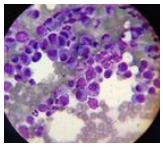
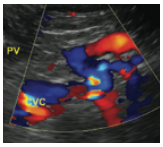

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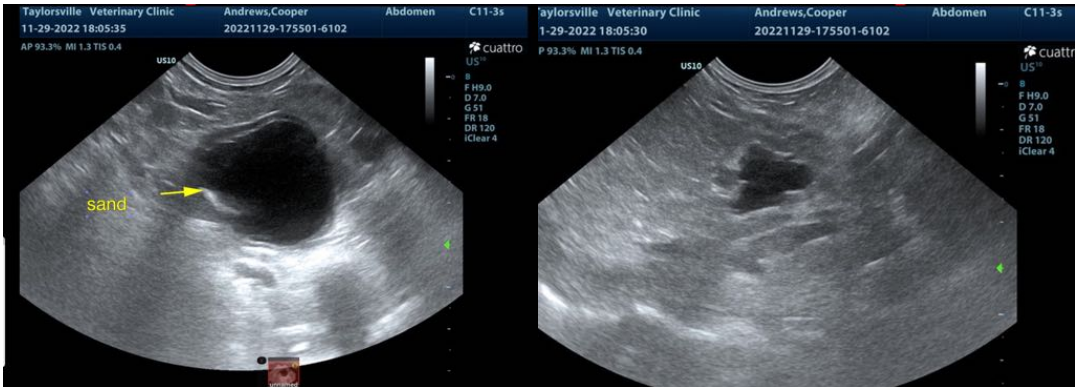

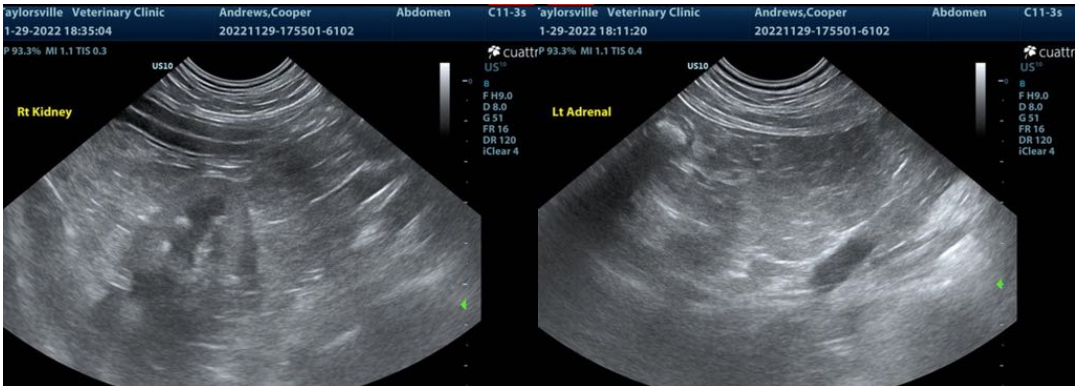

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
info@SonoPath.com