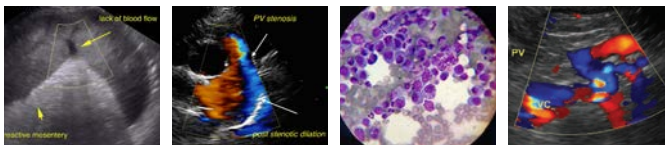
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Sunshine Verderber

SPECIES
Canine

BREED
Shih Tzu

SEX
Spayed Female

AGE
6 Years

WEIGHT
10.8 Pounds

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Arch Gordon

HOSPITAL NAME
Coral Ridge AH

REFERRING VET
Dr. Arch Gordon

INVOICE
42764

DATE
11/11/22

PRESENTING CLINICAL SIGNS

Presented for second opinion on intermittent chronic loose stool and elevated liver enzymes/previous vet placed on Denamarin Patient is clinically normal , no weight loss Radiographs - small mineral opacities seen in liver/GB area

Abnormal PE/Chem/CBC/UA Results: Fecal NOs and ag negative in Sept Sept ALT 252, AST 87, WBC and RBC normal Nov 10 Alt risen to 514 (18-121 u/l) AST 122 (16-55 u/l) Amylase low at 321 (337 - 1469 u/l CK 294- 10-200 u/l T Bil normal WBC and RBC wnl

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 were noted. Ureteral papillae were normal.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The right kidney measured 3.47 cm. The left kidney measured 3.51 cm.

Adrenal Glands

Both **adrenal glands** appear subjectively subnormal in size. Screening for Addison's indicated, given the patient history. The right adrenal gland measured 1.27 cm x 0.37 cm. The left adrenal gland measured 1.33 cm x 0.37 cm at the cranial pole and 0.40 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. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

Liver

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. Minor gallbladder debris noted, not pathological.

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. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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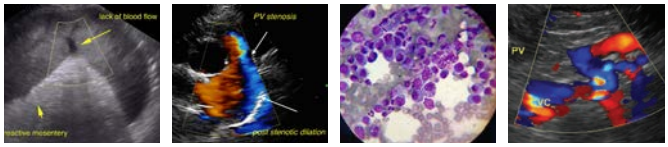

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Pancreas

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.

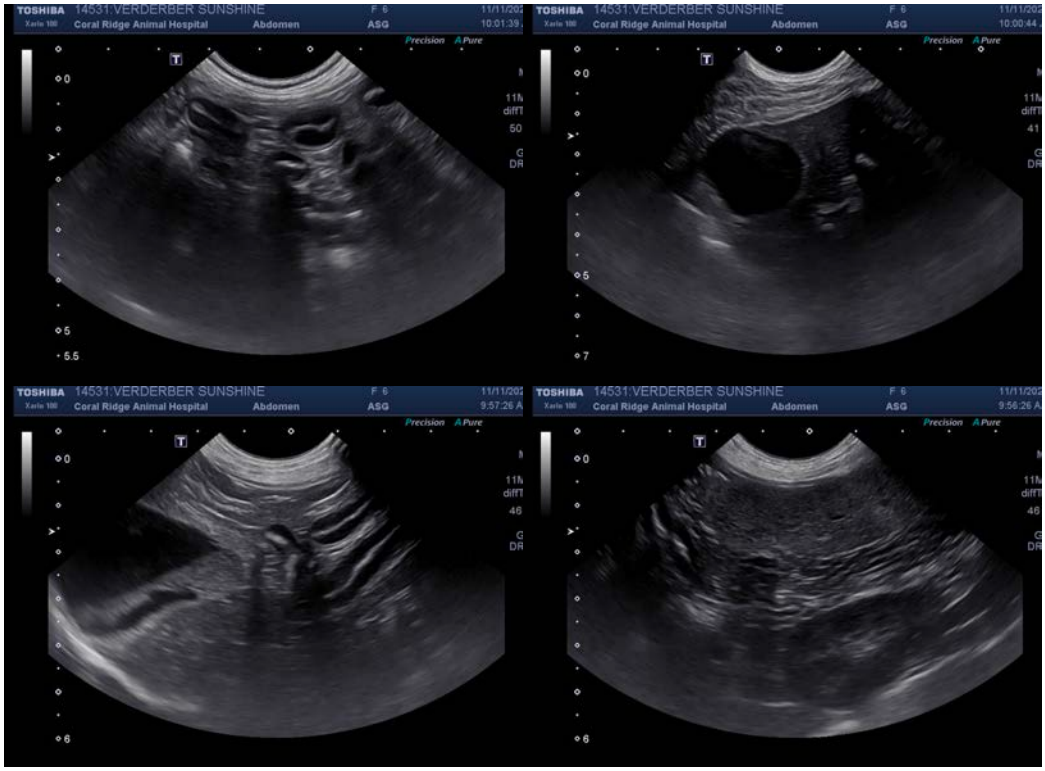
ULTRASONOGRAPHIC FINDINGS

- Structurally unremarkable abdomen

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the liver enzyme history and sonographically unremarkable liver, reactive hepatopathy is likely. Screening for Addison's indicated with baseline cortisol or ACTH stimulation, even though the adrenals appear subjectively normal to slightly subnormal in size. No evidence of significant visceral disease.

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, neutraceuticals (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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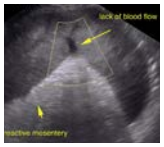
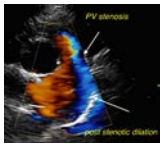
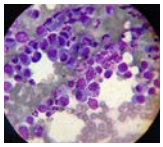
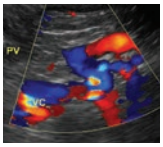

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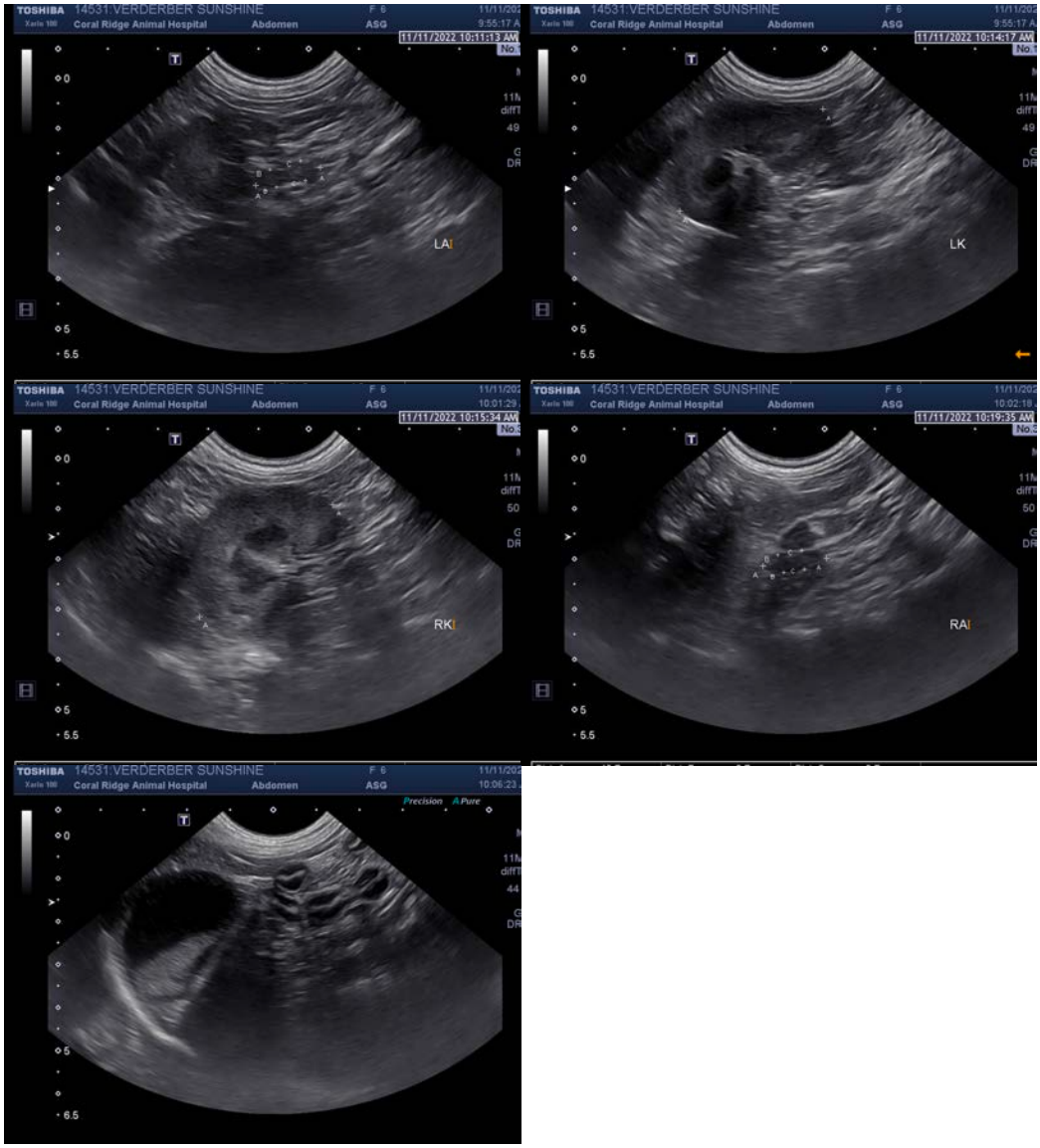

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

info@SonoPath.com