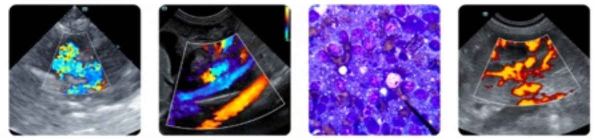


PATIENT
Tucker Rahey

SPECIES
Canine

BREED
Shih Tzu

SEX
Neutered male

AGE
11 years

WEIGHT
8.64 kg

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Trudeau

HOSPITAL NAME
Vetcetera AH

REFERRING VET
Dr. Trudeau

INVOICE
68836

DATE
11/19/25

PRESENTING CLINICAL SIGNS

History of elevated liver values with previous DVM since 2022; no medications; recently he started urinating in the house
CBC- NSF Chem ALP 2055 U/L; ALT 324 U/L, otherwise NSF U/A - USG 1.020 otherwise NSF

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 this age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Pinpoint mineralization was noted in the kidneys. The right kidney measured 3.37 cm.

Adrenal Glands

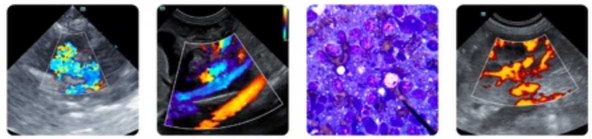
The **left adrenal gland** was uniform and measured 0.47 cm at the caudal pole and 0.45 cm at the cranial pole. The **right adrenal gland** revealed a hyperechoic nodule at the cranial pole measuring 1.3 x 0.9 cm. There was capsular expansion without capsular escape noted. The right adrenal gland was slightly heterogenous at the cranial pole measuring 0.84 cm at the cranial pole and 0.47 cm at the caudal pole.

Spleen

The **spleen** was largely smooth with subtle heterogeneous parenchymal changes while maintaining normal echogenic relationship to the liver and kidney. These changes are consistent with normal age-related alteration. The capsule was smooth without noticeable impingement from within the spleen or from pathology in the adjacent abdomen. The splenic vasculature demonstrated normal volume without signs of congestion or significant contraction. No evidence of active acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

Liver

The **liver** revealed increased portal markings with coarse architecture. A mild to moderate amount of remodeling was noted. The gallbladder presented dependent debris/biliary sand.



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

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxiphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

ULTRASONOGRAPHIC FINDINGS

Right adrenal nodule. Differentials include adenoma (likely), emerging carcinoma or pheochromocytoma possible.

Hepatic remodeling.

Minor excessive gallbladder debris.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Serial blood pressure measurements are recommended in this patient. If hypertension is an issue metanephrine level is recommended. If the patient appears Cushingoid and urine specific gravity is less than 1.020 then work-up for adrenal dependent Cushing's is indicated. Recheck is recommended in 2-3 weeks to assess for any progression of the adrenal gland.

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.

Ursodiol therapy is recommended over the next 6-8 weeks +/- antibiotic trial such as Enroflxoacin and Metronidazole over a 10 day period and reassessment of the clinical status. A recheck sonogram of the gallbladder and right adrenal nodule in 6 weeks.

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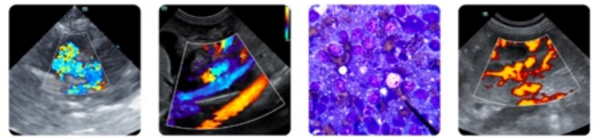

SonoPath.com info@sonopath.com 1.800.838.4268

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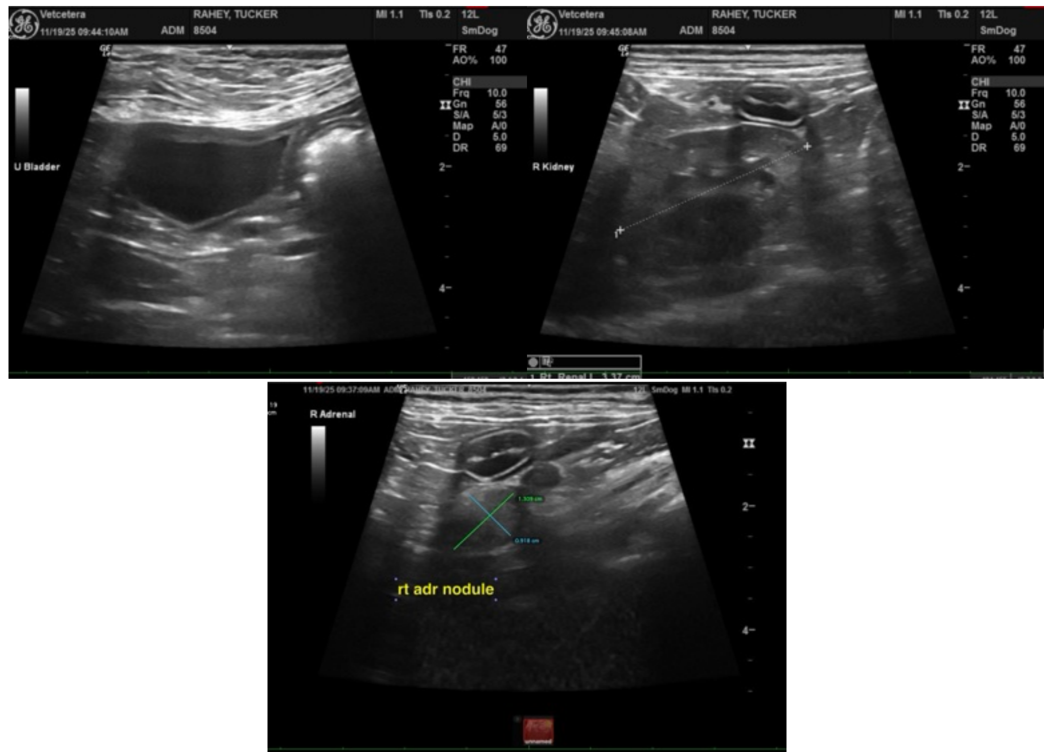

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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 (CFM), Cert. IVUSS, CEO of SonoPath.com

info@SonoPath.com