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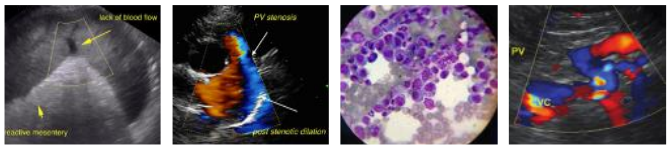

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Jackson Tudor

SPECIES

Canine

BREED

Puggle

SEX

Neutered Male

AGE

12 Years

WEIGHT

30.9 Pounds

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Ebersole

HOSPITAL NAME

Scanvet

REFERRING VET

Dr. Maloney/WAH

INVOICE

16869

DATE

8/15/22

PRESENTING CLINICAL SIGNS

History: Dx with Cushing's disease 8/2021 via LDDST and clinical signs. AUS done at specialty clinic 10/2/2021, report attached. Started on Vetoryl 30mg SID and Denamarin. At recheck in May, LE had increased, and OR extreme PU/PD. Increased Vetoryl to 35mg SID.

Abnormal PE/Chem/CBC/UA Results: PE: Grade 3/6 systolic heart murmur, potbelly appearance, thin truncal haircoat, and decreased muscle mass in rear legs. BW (5/2022): ALP 1,551, ALT 359, GGT 34, Chol 499. UA: SG 1.012

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 residual prostate was uniform, measuring 1.12 cm.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some minor 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. The left kidney measured 5.74 cm. The right kidney measured 5.5 cm. Slight mineralization was noted in both kidneys.

Adrenal Glands

The **left adrenal gland** has grown in size compared to the prior sonogram, measuring 3.45 cm x 2.14 cm at the cranial pole and 1.06 cm at the caudal pole. Capsular expansion without capsular escape was noted. Heterogeneous parenchymal changes were noted with mild disruption of architecture. The phrenic vein appeared occupied, while the vena cava was clear of any invasion- this was best visualized from the right approach to the left adrenal gland through the vena cava. The phrenic vein occupation may be related to early proliferative neoplasia of the left adrenal or phrenic vein thrombus.

The **right adrenal gland** was normal in size and contour, measuring 2.61 cm x 1.34 cm at the cranial pole and 0.84 cm at the caudal pole. The cranial pole of the right adrenal gland was hyperechoic and created adenomatous type nodule at the cranial pole, measuring 1.0 cm.

Spleen

The **spleen** was normal in size and contour, however, multifocal hyperechoic areas of mineralization were noted. This is a common finding with Cushingoid patients and likely related to underlying endocrinopathy.

Liver

The **liver** was hyperechoic with an attenuating sound beam. Multifocal mildly disruptive hypoechoic nodular changes were noted. The gallbladder was mildly overdistended with sand, suspended debris and minor polypoid changes with slightly echogenic and mineralized wall. This is most consistent with steroid hepatopathy.

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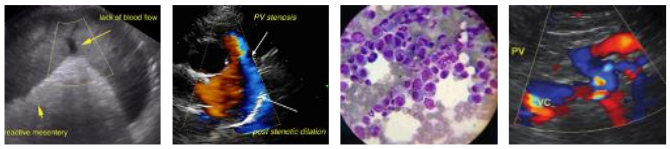

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Gastrointestinal

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

Pancreas

The **pancreas** revealed hyperechoic changes, consistent with remodeling and minor duct dilation. The right limb of the pancreas measured 1.5 cm.

ULTRASONOGRAPHIC FINDINGS

- Bilateral adrenal hypertrophy with more pronounced and irregular left adrenal, progressed from the prior sonogram. Left adrenal differentials include pronounced hyperplasia with phrenic vein thrombus, hyperplastic changes in both adrenals possibly related to Vetoryl therapy and PDH, left adrenal carcinoma with phrenic vein thrombus or early invasion, left adrenal pheochromocytoma unrelated to Cushings all possible. Right adrenal differentials include mild hyperplasia with cranial adenoma.
- Minor age-related renal changes with slight mineralization
- Pronounced nodular hyperplasia endocrine based hepatopathy liver pattern with excessive gallbladder debris and sand with mild overdistention/emerging mucocele
- Mineralized spleen, likely owing to underlying endocrinopathy and dystrophic mineralization
- Pancreatic remodeling

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Bile acid profile warranted to assess for any early hepatic dysfunction given the diffuse hepatic changes. Ursodiol therapy is warranted, as well as potentially liver oriented diet as an adjunctive measure. Reassessment of the Cushingoid status, regarding adrenal dependent versus pituitary dependent. I'm most concerned about a left adrenal dependent Cushings in this patient. Serial blood pressures are warranted. Reassessment of the Cushingoid status +/- abdominal CT should be considered in this patient, as well as FNA of the hepatic nodules. Left adrenalectomy may be the best option in this patient, depending upon further clinical evaluation. If no intervention is to be performed upon the left adrenal gland, I recommended recheck sonogram in 6-8 weeks regarding the gallbladder under therapy of ursodiol, as well as any left adrenal progression. Repeat serial blood pressures warranted, especially if any hypertension is present. Urine catecholamine could also be considered, as there is possibility of pheochromocytoma of the left adrenal, though not suspected.

For an additional charge, internal medicine consult can be utilized through Sonopath.com. You can select the internal medicine drop down at http://spa.sonopath.com/.

One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services

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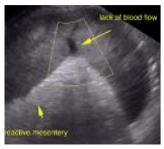
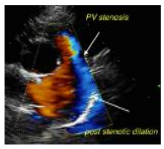
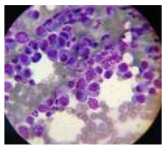
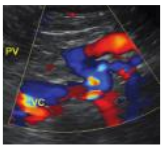

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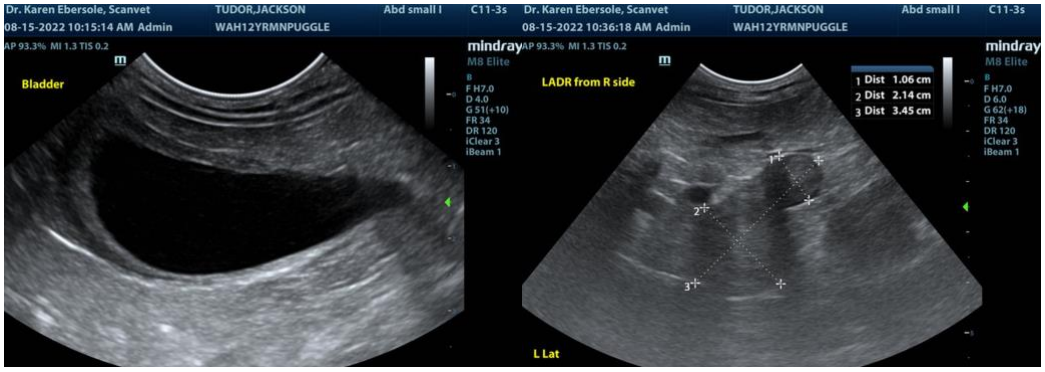

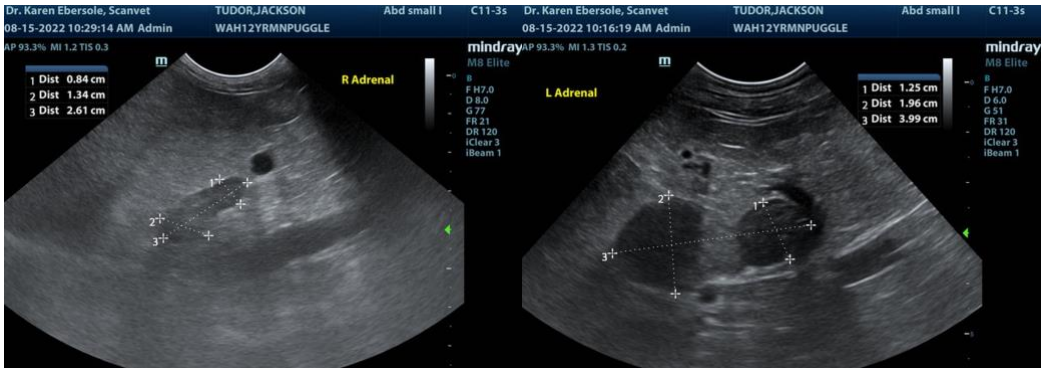

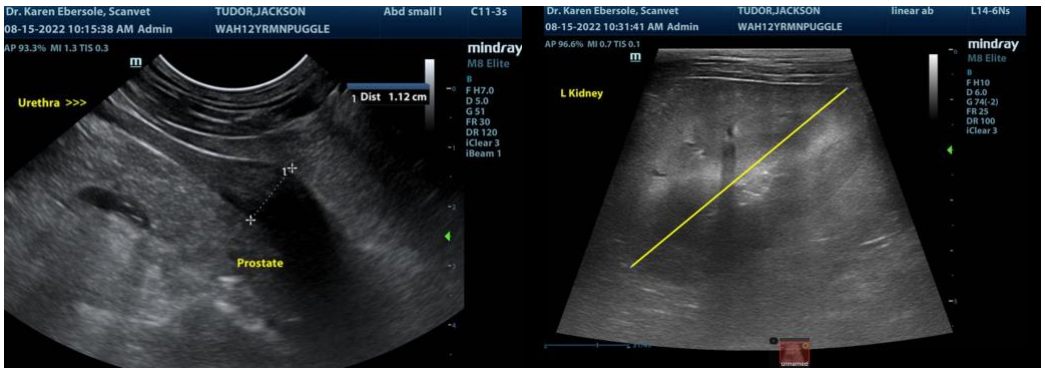

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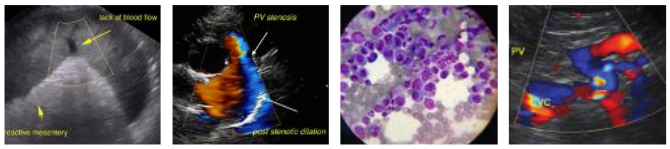

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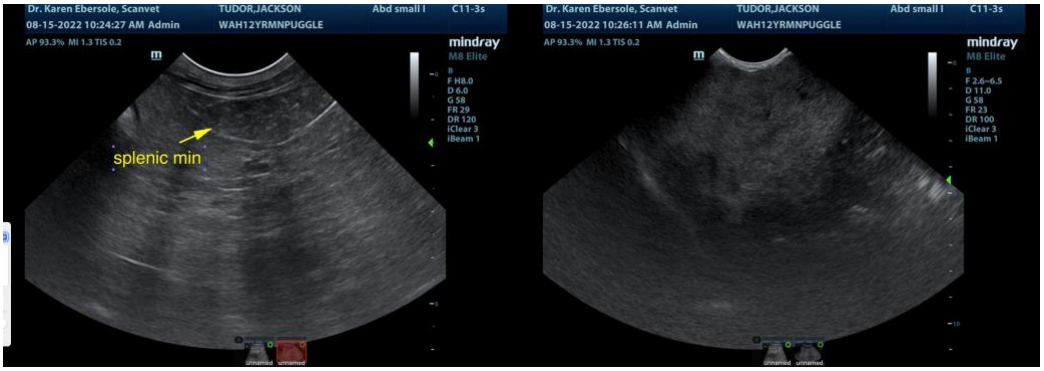

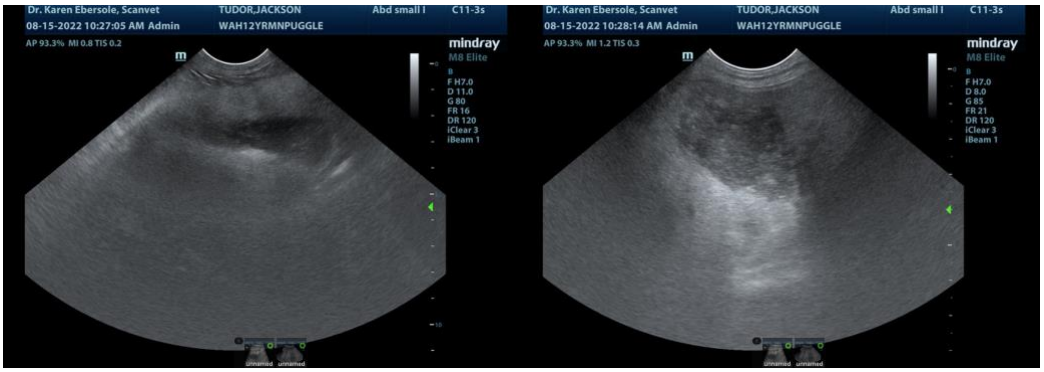

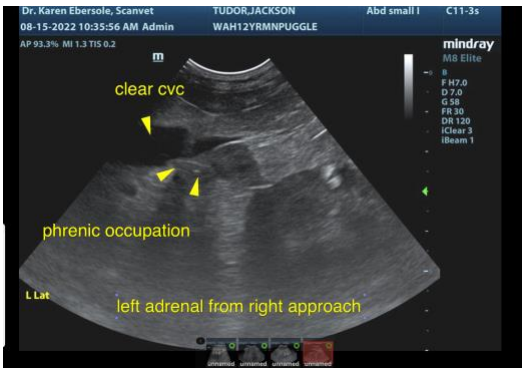

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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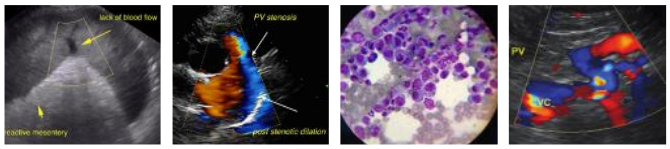

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

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