

PATIENT

Daisy Loken

SPECIES

Canine

BREED

Maltese Mix

SEX

Spayed Female

AGE

14 Years

WEIGHT

14.2 Pounds

INTERPRETED BY

Eric Lindquist, DMV,
DABVP, Cert. IVUSS

HOSPITAL NAME

Amazon Park AH

REFERRING VET

Dr. Jones

INVOICE NUMBER

21261

DATE

2/24/23

PRESENTING CLINICAL SIGNS

History: This is a follow up US from 1/13/2023 to re-assess the adrenal glands as the right adrenal was of an unusual size/shape. Primary Question/Differential to Be Answered in This Exam Has the right adrenal gland changed in size/shape?

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 largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some mild to moderate 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 right kidney measured 5.12 cm. An occasional anechoic cyst was noted in the left kidney. The left kidney measured 4.64 cm.

Adrenal Glands

The **left adrenal gland** has increased in size and contour, measuring 1.97 cm x 0.82 cm at the cranial pole and 0.65 cm at the caudal pole. Capsular expansion was noted without capsular escape. A newly developed nodule was noted at the cranial pole measured 0.94 cm x 0.69 cm.

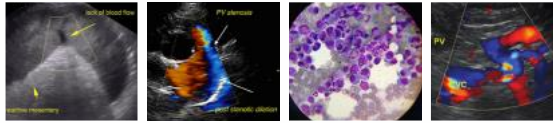
The **right adrenal gland** appears to be more progressively nodular and irregular. The right adrenal gland measured 3.02 cm x 1.17 cm at the mid body and 0.77 cm at the cranial pole. Nodular changes with a hypoechoic occupation of the initial aspect of the right phrenicoabdominal vein was noted. This is a common site for vascular invasion in the right adrenal gland. I'm concerned for potential invasion or thrombus formation in this structure.

Spleen

The **spleen** was normal size and relatively normal contour with multifocal hyperechoic areas of mineralization. This is a benign change; however, can be related to Cushing's disease or other endocrinopathies.

Liver

Exam of the cranial abdomen demonstrated excessive **liver** size, swollen contour, with conserved uniform architecture. Parenchymal echogenicity was diffusely isoechoic to the spleen and falciform fat. Minor remodeling was noted. This type of liver presentation typically is associated with slow and gradual SAP elevations with low-grade ALT rise. USG-FNA sampling is encouraged if more aggressive LE profiles are present such as ALT > 200 or rapid rise in SAP. These presentations are usually reactive hepatopathies owing to other disease processes either endocrine (Diabetes, Hypothyroidism, Cushing's disease), "antigen surveillance" from the gut/pancreas, or idiopathic breed predisposed progressions. Nodular



PATIENT hyperplasia pattern was noted. Minor striating bile was noted without overdistention of the gallbladder. The gallbladder wall was echogenic. The common bile duct was unremarkable.
Daisy Loken The vena cava was free of evident pathology.

SPECIES

Canine *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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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.

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ULTRASONOGRAPHIC FINDINGS

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- Progressively heterogenous nodular and expansive right adrenal gland with possible phrenic vein invasion or associated thrombosis. Newly developed nodular hyperplasia pattern of the left adrenal with increased size.

WEIGHT

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- Mineralized spleen, likely owing to underlying endocrinopathy
- Hepatopathy with nodular hyperplasia pattern

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- Striating bile without overdistention of the gallbladder, echogenic gallbladder wall
- Age-related renal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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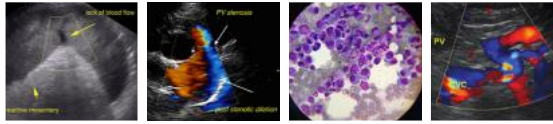
Full adrenal panel is warranted, as well as blood pressures. If systolic pressure is >160, urine catecholamine is warranted to assess for pheochromocytoma of the right adrenal gland. Right adrenal differentials include pronounced hyperplasia with phrenic vein thrombus or early invasion, pheochromocytoma, adenocarcinoma, pronounced adenoma are all possible. This appears resectable. No caval invasion is noted. Left adrenal differentials include adenoma with hyperplasia. If urine specific gravity is <1.020, then full adrenal work up for Cushings is indicated. Proactive right adrenalectomy may be the best option in this patient. There is no evidence of metastatic disease.

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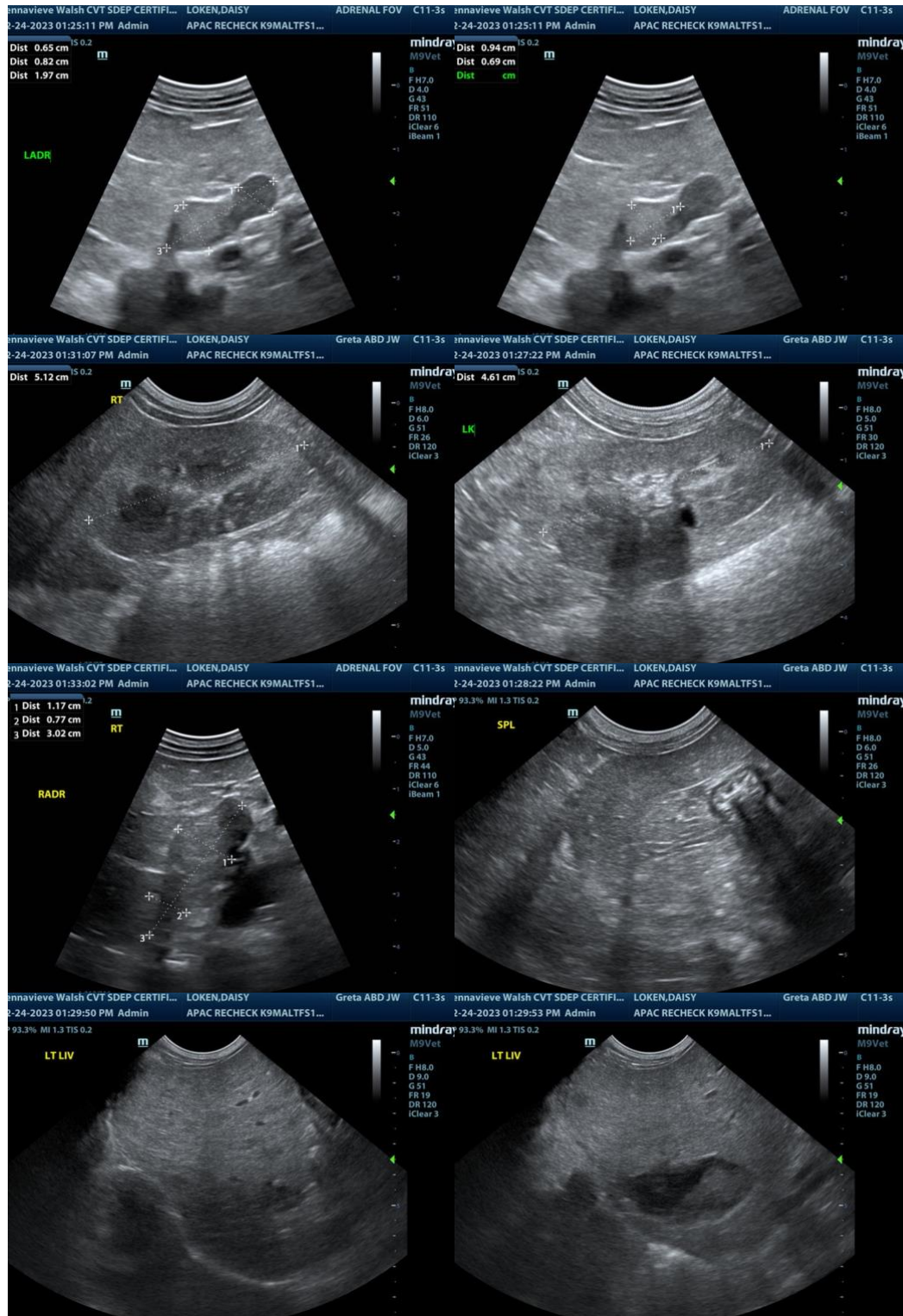
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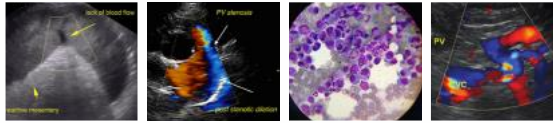
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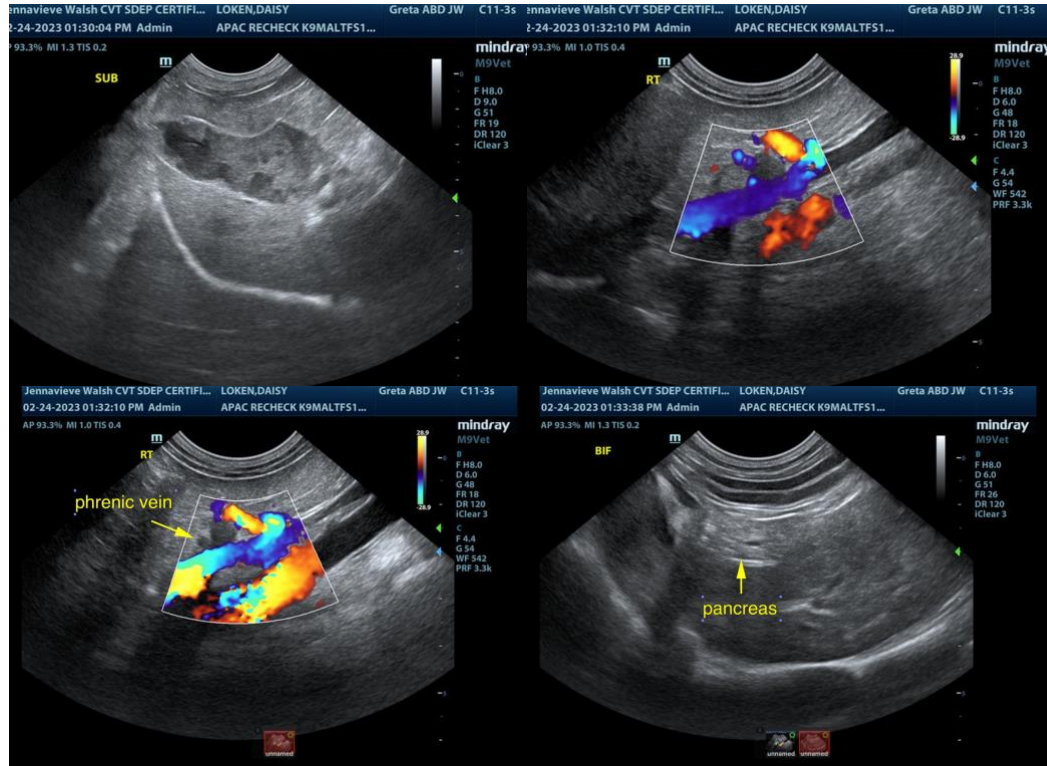
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

INTERPRETED BY

Eric Lindquist, DMV,
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 Eric.Lindquist@SonoPath.com

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