



**PATIENT**

Greta Turkowsky

**SPECIES**

Canine

**BREED**

Puggle

**SEX**

FS

**AGE**

14 years

**WEIGHT**

25.3 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Jessica Miller

**HOSPITAL NAME**

Millburn VH

**REFERRING VET**

Dr. Truowsky

**INVOICE**

13532

**DATE**

3/23/22

**PRESENTING CLINICAL SIGNS**

General geriatric screen, slowing down/ slightly lethargic, recheck liver changes (last AUS 2/17/21) No current meds

Abnormal PE/Chem/CBC/UA Results: WNL (liver values have been slightly elevated)

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.9 cm in length. The right kidney measured 5.5 cm in length.

**Adrenal Glands**

The left adrenal gland was normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.37 cm width in the cranial pole and 0.64 cm width in the caudal pole. No evidence of concurrent left adrenal nodular changes was noted.

A mildly expansive, nonhomogeneous, mildly hyperechoic nodule was present in the cranial right adrenal gland resulting in subtle distortion of the cranial right adrenal capsule, yet without evidence of parenchymal escape. The nodule did not exhibit signs of mineralization or vascular invasion. The nodule measured approximately 1.1 cm x 0.76 cm. The overall right adrenal gland measured 1.3 cm width at the cranial pole and 0.5 cm width at the caudal pole.

**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

**Liver/ Gallbladder**

The liver was subjectively normal in size and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. Intermittent, discrete nondisruptive hypoechoic nodules were present. An



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example of a nodule in the mid liver measured 1.4 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with mild, primarily dependent, nonorganized, nonmineralized gallbladder debris. The gallbladder was otherwise normal. The cystic and common bile ducts were normal.

**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

**Pancreas**

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**ULTRASONOGRAPHIC FINDINGS**

- Mild chronic renal changes
- Chronic hepatopathy exhibiting nonuniform to discretely nodular parenchyma
- Mild gallbladder debris (non-mucocele)
- Cranial right adrenal nodule

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The hepatic presentation appeared to be subjectively and essentially static compared to the previous ultrasound. Low-grade inflammatory hepatopathy if persistent mild ALT elevation with areas of discrete nodular to regenerative hyperplasia, hematopoiesis, or vacuolar hepatic changes are suspected. Neoplastic criteria is considered less likely.

If accessible, and assuming normal clotting status, ultrasound-guided FNA of the liver could be considered for screening cytology and further definition. Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.

The right adrenal nodule is nonspecific with considerations including adenoma, benign hyperplasia, while the possibility of emerging neoplasia such as pheochromocytoma, adenocarcinoma, cannot be excluded. Screening blood pressure is recommended to assess for evidence of hypertension which may allude to possible pheochromocytoma. Sonographic monitoring of this nodule for evidence of progression with initial recheck in 4 weeks would be ideal.



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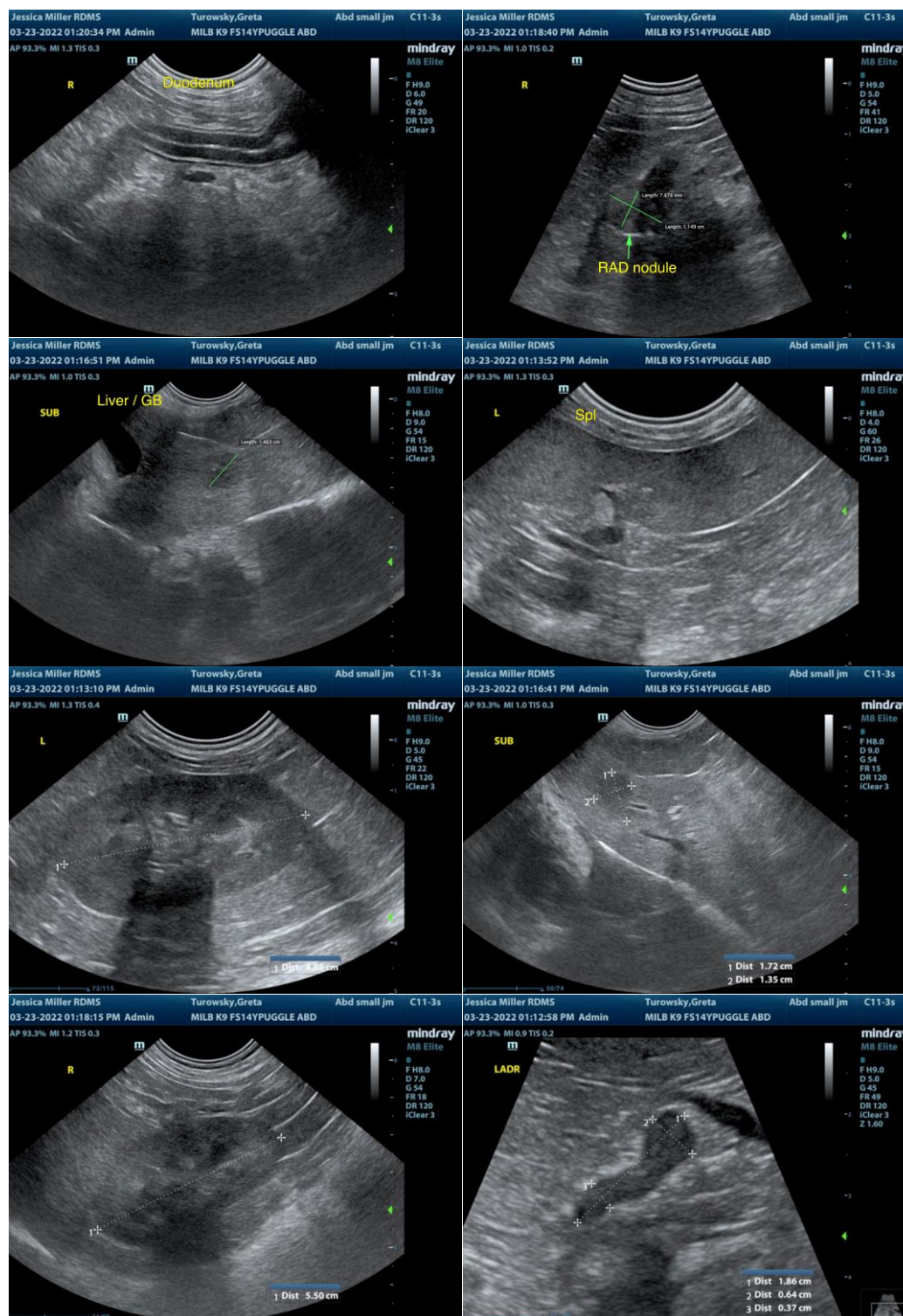
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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.

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**info@SonoPath.com**

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