



**PATIENT PRESENTING CLINICAL SIGNS**

Annabelle Miller  
History: Not eating, heart murmur, icteric upon ultrasound  
Medication: Gabapentin, Cerenia, Mirtazapine, Fortiflora

**SPECIES**  
Canine  
WBC 19.2 w/ neutrophilia and monocytosis, Globulin 5.0, ALT not read, ALP greater than 2000  
Total bilirubin 5.1, Amylase 371

**BREED ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Jack Russell Mix

*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 were noted.

**SEX**  
FS

No evidence of pathology in the area of the aortic trifurcation.

**AGE**  
13 years  
Normal size and margination was 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. Pinpoint areas of medullary mineralization present in both kidneys. The left kidney measured 4.3 cm in length. The right kidney measured 3.9 cm in length.

**WEIGHT**  
12.8 Pounds

*Adrenal Glands*

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.3 cm length x 1.3 cm width at the cranial pole and 0.52 cm width at the caudal pole. A mildly expansive nodule was present in the mid to cranial left adrenal gland with distortion of the adrenal capsule yet without evidence of parenchymal escape or mineralization. The nodule parenchyma was mildly nonhomogeneous. The nodule measured 1.5 x 1.2 cm.

**INTERPRETED BY**

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

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.2 cm length x 0.47 cm width at the caudal pole.

**IMAGING PERFORMED BY**

Rebekah Jakum, CVT  
ARDMS/RVT

*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.

**HOSPITAL NAME**

Littlestown VH

**REFERRING VET**

Dr. Jennings

*Liver / Gallbladder*

The liver presented mildly enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion.

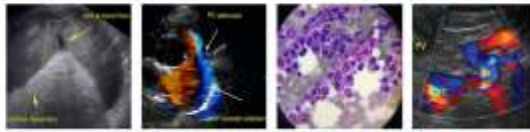
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The gallbladder was mildly distended in size with subtle evidence of gallbladder wall edema. Nondependent echogenic to organized luminal debris exhibiting subtle peripheral striations was present

**DATE**

11.12.2021



**PATIENT**

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within the gallbladder lumen. Subtle evidence of peripheral gallbladder inflammation noted without evidence of concurrent effusion. The cystic and common bile ducts were normal.

***Gastrointestinal***

**SPECIES**

Canine

The stomach presented intact yet subjectively prominent wall layering. The lumen of the stomach contained ingesta without signs of obstruction or foreign material. The gastric body wall measured 0.48 cm width.

**BREED**

Jack Russell Mix

The duodenum exhibited intact yet subjective mild prominent wall layering primarily in the upper duodenum with mild upper duodenal stasis. The mid descending duodenum, jejunum, and ileum were sonographically unremarkable.

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

**SEX**

FS

***Pancreas***

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

**AGE**

13 years

***Free Abdomen***

No overt lymphadenopathy or peritoneal effusion was present.

**WEIGHT**

12.8 Pounds

**ULTRASONOGRAPHIC FINDINGS**

**Primary**

- Nonspecific left adrenal nodule - adenoma, benign hyperplasia, or emerging neoplasia such as adenocarcinoma or pheochromocytoma possible.
- Hepatopathy - subjectively benign.
- Gallbladder mucocele with subtle peripheral inflammation.
- Gastritis/upper duodenitis with probable gastric stasis.
- Mild heterogeneous pancreas - nonspecific, age related/patient variant, remodeling owing to previous inflammation, or low grade to chronic pancreatitis possible.

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**Secondary**

- Mild chronic renal changes.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The patient's clinical signs and labwork abnormalities are likely associated with the gallbladder mucocele. Given the concurrent presence of positive Murphy sign noted during the exam, cholecystectomy with hepatic biopsies as well as gross inspection of the left adrenal gland +/- left adrenalectomy is recommended. Coagulation profile as well as perioperative antibiotic administration indicated. Screening blood pressure is suggested prior to surgery to assess for evidence of hypertension. Gross inspection of the common bile duct also suggested at the time of surgery although evidence of common bile duct dilation was not overtly evident.

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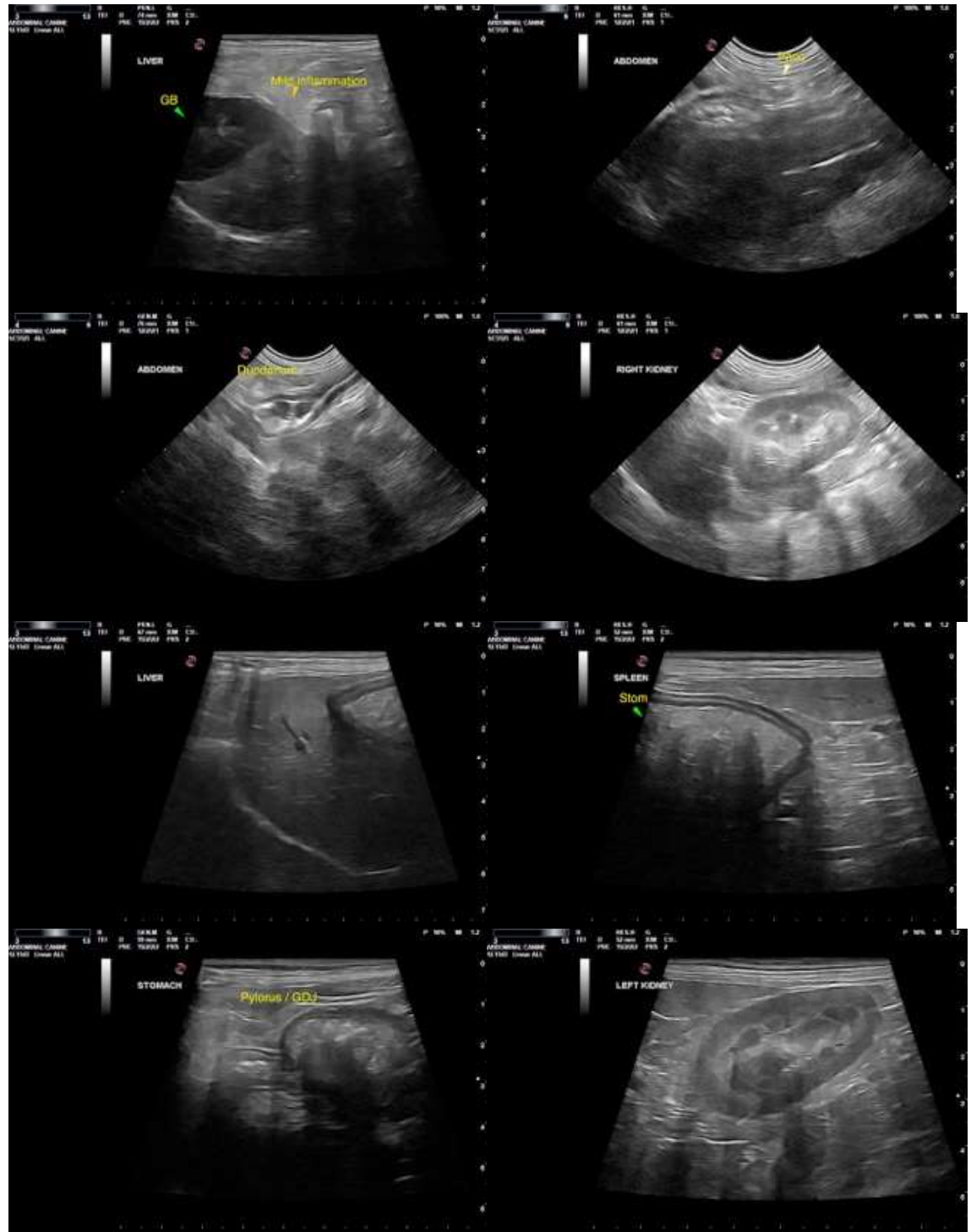
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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