

**PATIENT PRESENTING CLINICAL SIGNS**

Emma Doyle History: Elevated Alkph  
Labs: ALP 1440, ALT 126, GGT 14, Calcium 11.9, Platelets 590

**SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Canine **Urinary System**

**BREED** 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** The area of the aortic trifurcation was free of pathology.

Spayed Female 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 4.5 cm in length. The right kidney measured 4.9 cm in length.

**AGE**  
2008 **Adrenal Glands**

**WEIGHT** Both adrenal glands were mildly prominent in size based on caudal pole width measurement in light of body weight. Subtle areas of asymmetrical capsule contour noted. Maintained primarily homogenous adrenal parenchyma noted. Mild to discreet notch, potentially indicative of focal parenchymal expansion in the area of the proximal right phrenicoabdominal vein. The left adrenal gland measured 1.7 cm in length x 0.64 cm at the caudal pole in width. The right adrenal gland measured 2.5 cm in length x 0.63 cm at the caudal pole in width.

**INTERPRETED BY**

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

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**IMAGING PERFORMED BY**

Rebekah Jakum, CVT  
ARDMS/RVT

**Liver**

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.

**HOSPITAL NAME**

New Britain VC

**REFERRING VET**

Dr. Bandekar

The gallbladder was mildly distended in size with moderate nondependent mildly organized echogenic debris occupying the majority of the gallbladder lumen with concurrent mild anechoic content. Suspect areas of entrapped mucus noted. No evidence of gallbladder or peripheral gallbladder inflammatory criteria. The cystic and common bile ducts were normal.

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**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.

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**PATIENT**

Emma Doyle

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.

**SPECIES**

Canine

***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.

**BREED**

Shih Tzu Mix

***Free Abdomen***

No overt lymphadenopathy or peritoneal effusion was present.

**SEX**

Spayed Female

**ULTRASONOGRAPHIC FINDINGS**

- Benign hepatopathy- vacuolar hepatopathy, cholestasis, inflammatory hepatopathy or other hepatopathy is possible. Neoplastic criteria is considered unlikely.

**AGE**

2008

- Early to immature gallbladder mucocele

- Mild chronic renal changes

**WEIGHT**

19 Pounds

- Bilateral mildly prominent to irregular adrenal glands- possible, although not definitive, early right phrenicoabdominal vein invasion, potential for small phrenicoabdominal vein thrombus is possible.

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- Heterogenous pancreas- suspect age-related pancreatic changes and considered incidental

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Given the lack of reported clinical signs, which may suggest Cushings syndrome, i.e., PU/PD, polyphagia, etc., the presentation of the liver and bilateral adrenal glands is of unclear clinical significance. Full adrenal work up with LDDST is suggested if clinical suspicion of Cushings syndrome. Potential for emerging right adrenal neoplastic criteria given suspicion for potentially early phrenicoabdominal vein invasion with possible thrombosis of this vessel also being a differential cannot be definitively excluded.

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Screening blood pressure to assess for evidence of hypertension, which may allude to emerging right adrenal pheochromocytoma is recommended. Ideally, if possible, CT assessment of the right adrenal gland is recommended. Otherwise, sonographic monitoring of the right adrenal gland for evidence of progressive enlargement or potential phrenicoabdominal vein invasion with initial recheck in 4 weeks would be reasonable.

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Screening hepatic FNA cytology could be considered for further assessment if clinically indicated. Hepatosupportive medications, including Denamarin and Ursodiol may prove beneficial.

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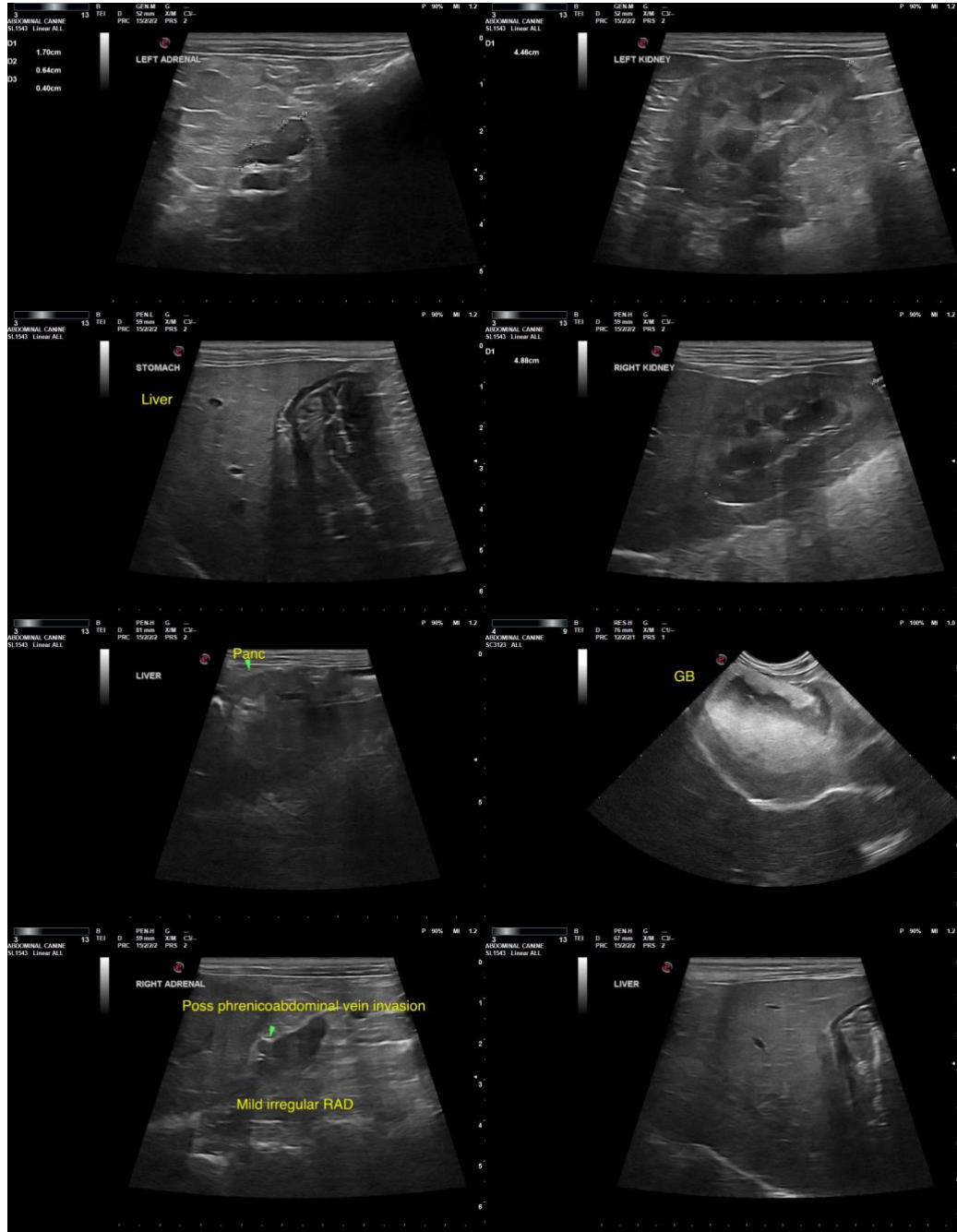
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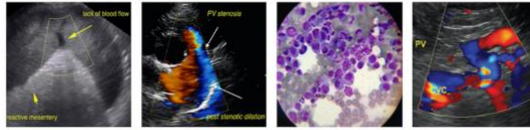
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**R. McKenzie Daniel, DVM, DABVP (Canine/Feline Practice)**



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Canine

**BREED**

Shih Tzu Mix

**SEX**

Spayed Female

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