

**PATIENT PRESENTING CLINICAL SIGNS**

History: Mild elevation of liver enzymes suspect cholangitis  
 Abnormal PE/Chem/CBC/UA Results: Mild elevation of liver enzymes

**SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Canine

**Urinary System**

**BREED**

Shep Lab Mix

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra 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

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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilatation was present. The left kidney measured 6.7 cm in length. The right kidney measured 6.5 cm in length.

**AGE**

10

The area of the aortic trifurcation was free of pathology.

**Adrenal Glands**

**WEIGHT**

32.6 kg

The left adrenal gland exhibited mild subjective subnormal size and normal contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.33 cm width at the caudal pole and 0.30 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.52 cm width at the caudal pole.

**INTERPRETED BY**

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

**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.

**IMAGING PERFORMED BY**

Dr. Belan

**Liver**

**HOSPITAL NAME**

Resolution Veterinary  
Ultrasound

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective minor parenchymal remodeling. Mild increased prominence of porto vascular borders.

**REFERRING VET**

Dr. Nadbrezezna

The gallbladder was non distended in size with echogenic, nonmineralized, nondependent biliary sludge. The biliary sludge was non organized with a hypoechoic to anechoic, irregular to interrupted rim visible between the nondependent sludge and inner wall. No signs of peripheral inflammation.

**Gastrointestinal**

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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.

**DATE**

06/07/2022

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.



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

Zoey Issak **Pancreas**

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

Canine **Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**BREED**

Shep Lab Mix

### ULTRASONOGRAPHIC FINDINGS

- SEX**
- Moderate congealed to nondependent yet nonorganized gallbladder debris with suspect areas of entrapped hypoechoic mucus-partial mucocele pattern
- FS**
- Low grade to benign hepatopathy
  - Mild chronic renal changes
- AGE**
- Minor pancreatic remodeling-likely age related changes and considered incidental. Potential for low grade pancreatitis or remodeling owing to previous inflammation
- 10**
- Subnormal left adrenal gland

### INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

**WEIGHT**

32.6 kg

Overall the appearance of the liver was nonspecific yet may indicate cholangitis/cholangiohepatitis pattern given the partial GB mucocele. A hepatic FNA assuming normal clotting status could be considered for screening cytology primarily to assess for and identify inflammatory cell type. Some or all of the following may be considered empirically with serial monitoring for evidence of cranial abdominal or subxiphoid discomfort on palpation and persistent/progressive hepatic enzyme elevations or evidence of cholestasis.

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**Enrofloxacin** 5 mg/kg SID PO & **Metronidazole** (10-20 mg/kg po bid) over 3 weeks, **Ursodiol** (10-15 mg/kg p.o. q24h) over 8 weeks and recheck sonogram. Monitor rapid rise in ALT, SAP, Bilirubin, bilirubinuria, leukocytosis, focal cranial abdominal subxiphoid discomfort or progressive anorexia. More information regarding clinical emerging mucocele issues may be found with our article and research at <http://sonopath.com/resources/articles>, *Defining a GB Mucocele* and *Clinical Parameters in Dogs with Sonographically Diagnosed Surgical Biliary Disease* from ECVIM 2009.

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**PATIENT**

Zoey Issak

**SPECIES**

Canine

**BREED**

Shep Lab Mix

**SEX**

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**AGE**

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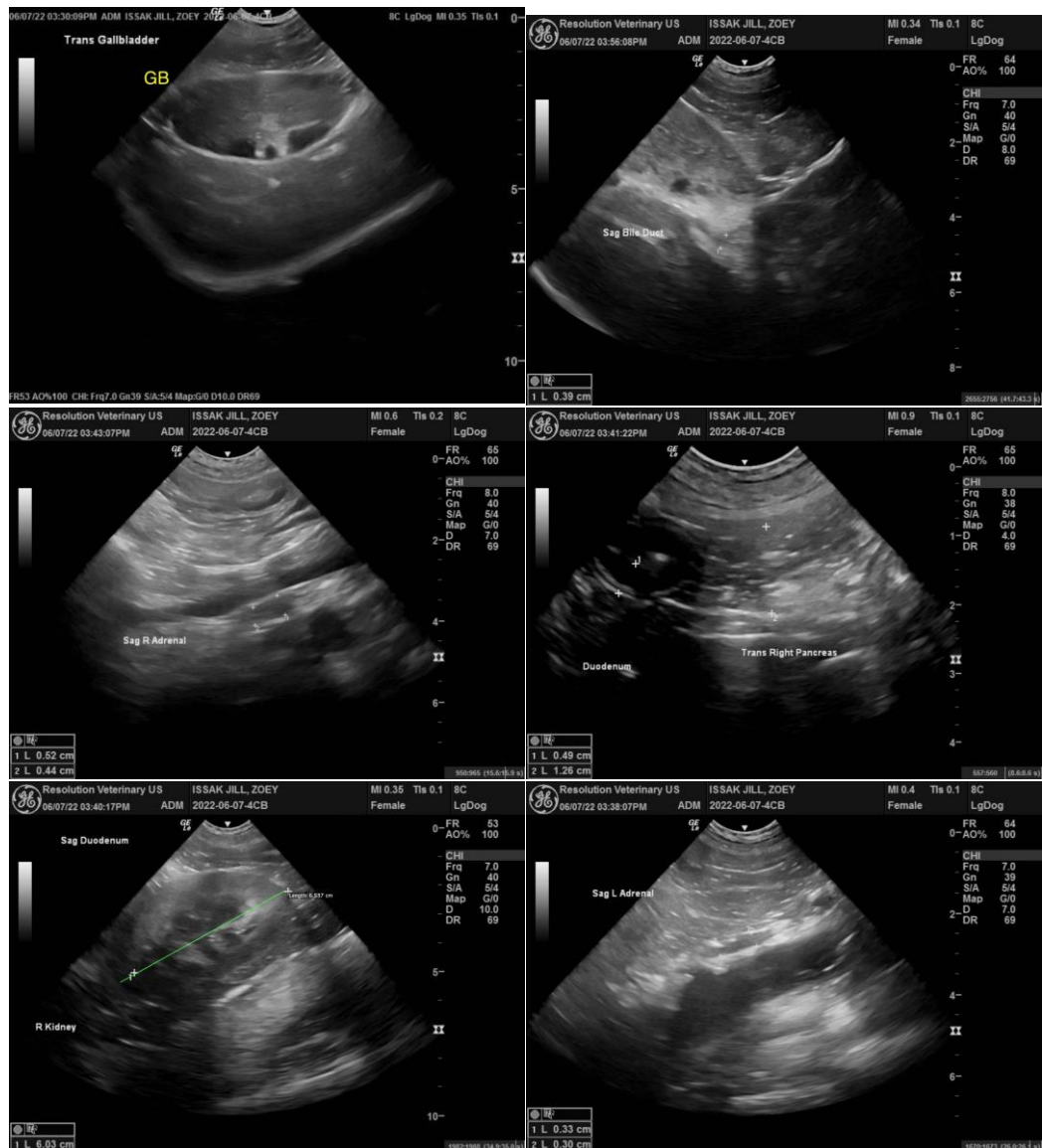
Dr. Nadbrezyna

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## PATIENT

Zoey Issak

## SPECIES

Canine

## BREED

Shep Lab Mix

## SEX

FS

## AGE

10

## WEIGHT

32.6 kg

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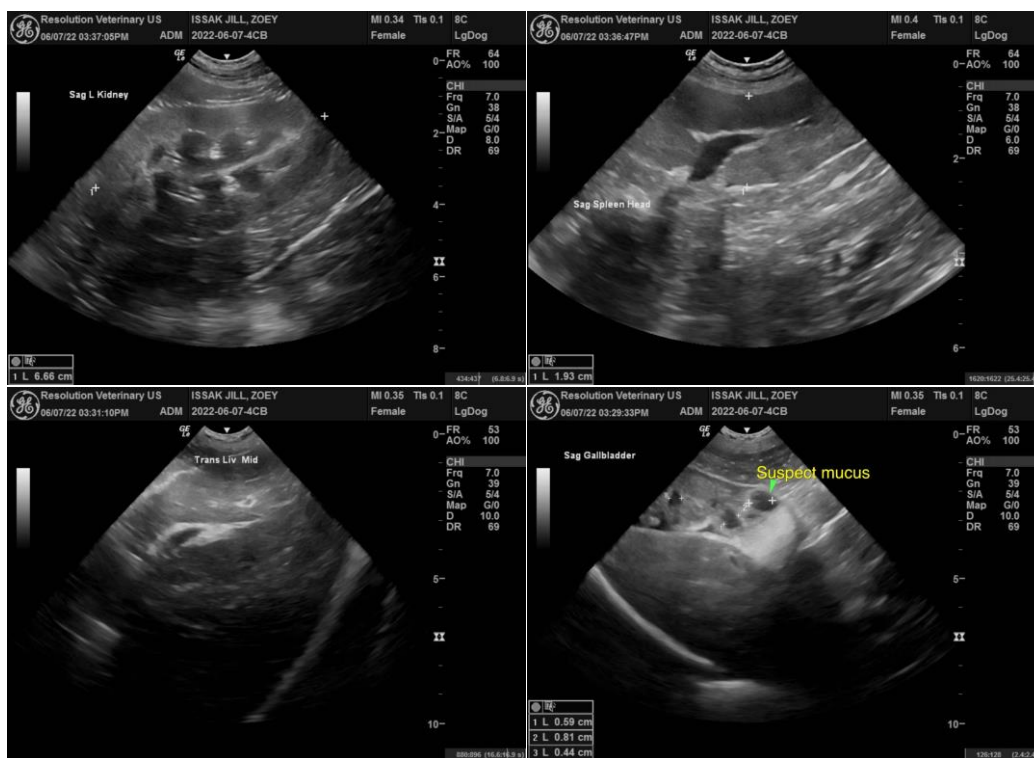
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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