



**PATIENT PRESENTING CLINICAL SIGNS**

Mr. Magoo Syphers

loss of appetite, lethargic, Jaundiced  
Abnormal PE/Chem/CBC/UA Results: pending. but had similar issue on 2/25/22 and hospitalized at Emergency Vet Hospital. very high T. Bili, ALT, Alk Phos. Improved greatly with meds. but seeming to have relapse now. They had planned to do follow up ultrasound soon, but now symptoms returning and more urgent Current Medications Denamarin and Ursodiol Radiographic Findings ultrasound done at Emergency 2/25/22. Some mineralization noted. Gall Bladder not blocked. No clear, definitive findings (will try to send report separately) Full US report returned. Available in second MRE. Excerpt below.

**SPECIES**

Canine

**BREED**

Chihuahua X

**SEX**

Neutered Male

**AGE**

6 Years

**WEIGHT**

11.3 Pounds

Conclusions: The significance of the hepatic mineralization is unclear. On radiographs, there are faint branching mineralized structures that are most likely mineralization of the bile ducts; this is generally an incidental finding in dogs. In addition, there are larger rounded irregular mineralized foci. It is unclear if these are within the bile ducts or represent hepatic mineralization which can be an incidental finding or be associated with chronic hepatitis, parasitic infection or granulomatous disease (or neoplasia- less likely). On ultrasound, the gallbladder wall is mildly thickened and cholecystitis is possible. The material in the gallbladder appears mobile and gravity dependent and is not typical of mucocele. There is some mild dilation of the proximal bile duct and evidence of regional mineralization but definitive evidence of bile duct obstruction is not demonstrated. Mild diffuse hepatic parenchymal changes. Changes are non-specific. Considerations may include hepatotoxicity, diffuse inflammatory disease (acute cholangiohepatitis, acute exacerbation of chronic hepatitis, granulomatous hepatitis, other), or Leptospirosis. Neoplasia is considered unlikely. Gastric distention with fluid is most likely due to gastroparesis associated with gastritis secondary to hepatitis/hepatic failure. Mild small intestinal distention with fluid and evidence of echogenic fluid in the colon supports concurrent enteritis.

Recommendations: Considerations may include hepatotoxicity, hepatic necrosis, diffuse inflammatory disease (acute cholangiohepatitis, acute exacerbation of chronic hepatitis, other), or Leptospirosis. Although there is mineralization of the liver (suspect both biliary and hepatic), there is not definitive evidence of bile duct obstruction due to cholelithiasis based on this exam. Based on the size of the mineralized structures on radiographs, I would expect significant bile duct dilation on ultrasound and this is not demonstrated. The possibility of hepatotoxicity may be based on history of potential exposure to hepatotoxic substances. Evaluation for Leptospirosis is indicated if prevalent in your area. Coagulation parameters are recommended as well as manual platelet count. Symptomatic and supportive care for acute hepatitis/hepatic failure is recommended. Liver biopsies are needed for definitive diagnosis. Monitor liver enzymes and total bilirubin. Abdominal exploratory may be indicated if bilirubin elevation is progressive to further evaluate the biliary tract and obtain liver biopsies. Please contact me if you have questions regarding this exam. Sincerely, Stephanie Lisciandro, DVM, Diplomate ACVIM (SAIM)

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Saran Hansen

**HOSPITAL NAME**

Q Street AH

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

*Urinary System*

**REFERRING VET**

Dr. Bretschneider

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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.

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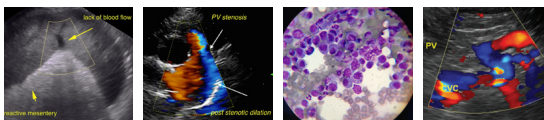
No evidence of pathology in the area of the residual prostate.

The area of the aortic trifurcation was free of pathology.

**DATE**

3/28/22

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or



**PATIENT**

Mr. Magoo Syphers

slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 4.6 cm. The right kidney measured 5.1 cm.

**SPECIES**

Canine

**Adrenal Glands**

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.1 cm length x 0.43 cm at the caudal pole. The right adrenal gland measured 1.9 cm length x 0.47 cm at the caudal pole.

**BREED**

Chihuahua X

**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.

**SEX**

Neutered Male

**Liver**

**AGE**

6 Years

The liver exhibited normal to possible mild generalized enlargement. The hepatic parenchyma revealed subtle reduced echogenicity with maintained uniform mildly coarse echotexture. Focal areas of lobar biliary tree mineral noted, primarily adjacent to the gallbladder. Increased portal vein prominence was evident. The capsule of the liver was normal in margination. Distinct masses or nodules were not evident. The hepatic and portal vasculature were normal in appearance.

**WEIGHT**

11.3 Pounds

The gallbladder was mildly distended in size with indistinct to variably thickened gallbladder walls exhibiting isoechoic echogenicity compared to adjacent hepatic parenchyma. Moderate inspissated yet subjectively non-organized to mildly mobile luminal debris present with minimal anechoic content and without evidence of gallbladder mineral. The cystic biliary duct exhibited moderate dilation, containing mild non-shadowing mucus.

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Generalized severe common bile duct dilation noted extending caudally to the approximately level of the duodenal papilla, containing a mixture of anechoic content along with non-shadowing mucus. Solidly shadowing echogenicity consistent with mineral/cholecholelith noted in the distal common bile duct at the approximately level of the duodenal papilla, measuring approximately 1.0 cm in diameter. Subtle evidence of peripheral gallbladder and common bile duct reactivity was present without overt evidence of effusion.

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**Gastrointestinal**

The stomach exhibited sonographically unremarkable wall layering with mild retained, non-shadowing ingesta/chyme.

**REFERRING VET**

Dr. Bretschneider

Duodenum exhibited intact yet subjective mildly prominent wall layering. No evidence of duodenal ileus. The jejunum and ileum to the level of the colon were sonographically unremarkable.

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

**INVOICE**

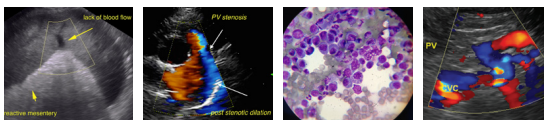
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**Pancreas**

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The left limb, right limb, and base of the pancreas presented hypoechoic to heterogeneous echogenicity compared to adjacent omental fat. Mild asymmetrical capsule margination was present with mild variable parenchymal swelling and mild peripancreatic inflammation. No overt evidence of neoplasia.



**PATIENT** *Free Abdomen*

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A solitary enlarged hepatic lymph node was present adjacent to the portal vein, measuring 1.2 cm x 0.60 cm. The lymph node was homogenous, mildly hypoechoic and smoothly margined. A normal width: length ratio was maintained (<0.5). Evidence of perilymphatic inflammation was evident.

**SPECIES**

Canine

**ULTRASONOGRAPHIC FINDINGS**

**BREED**

Chihuahua X

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11.3 Pounds

- Acute on chronic hepatopathy with focal lobar biliary tree mineral – suspect acute on chronic cholangiohepatitis.
- Moderate to severe cholecystitis pattern with marked inspissated to mildly mobile luminal debris/mucus.
- Generalized severe common bile duct dilation exhibiting marked mucoduct and distal choledocholithiasis and level of the duodenal papilla.
- Focal subjectively benign/reactive hepatic lymphadenopathy – likely reactive hyperplasia or mild lymphadenitis.
- Suspect concurrent mild to low-grade pancreatitis.
- Probable mild gastroduodenitis with mild gastric stasis.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Sonographic findings are consistent with likely generalized hepatobiliary inflammation. Suspect atypical to emerging gallbladder mucocele and concurrent significant cholecystitis, and lastly obstructive choledocholithiasis. Clotting status recommended. If normal clotting status, exploratory laparotomy for gross inspection of the common bile duct and gallbladder with potential for gallbladder flush, redirection technique, cholecystectomy, and hepatic biopsy recommended. Broad-spectrum perioperative antibiotics recommended. Correlation with pending lab work indicated.

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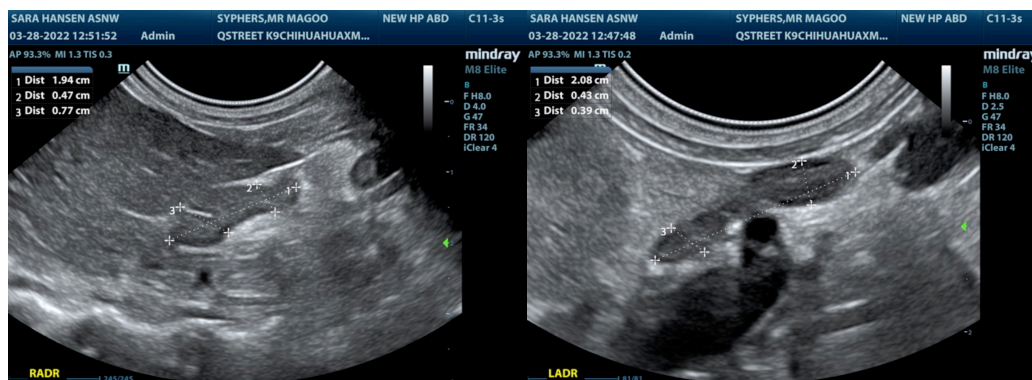
Dr. Bretschneider

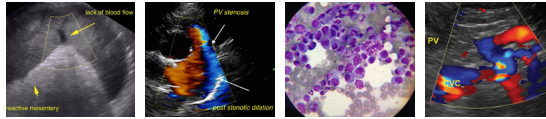
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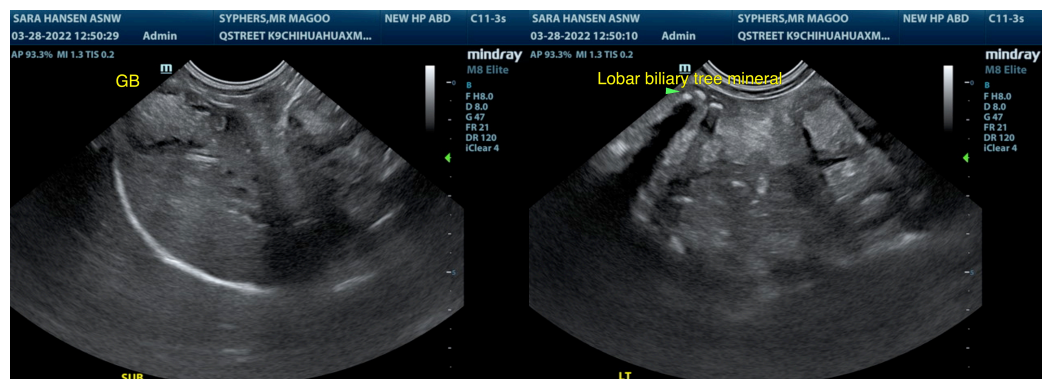
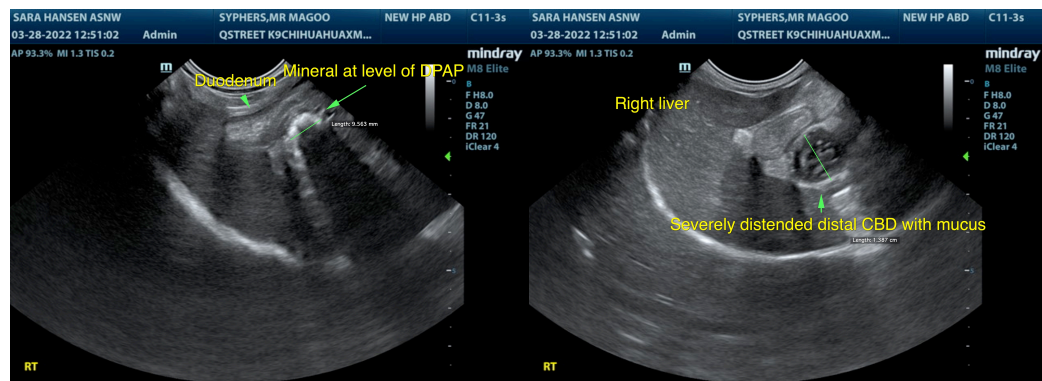
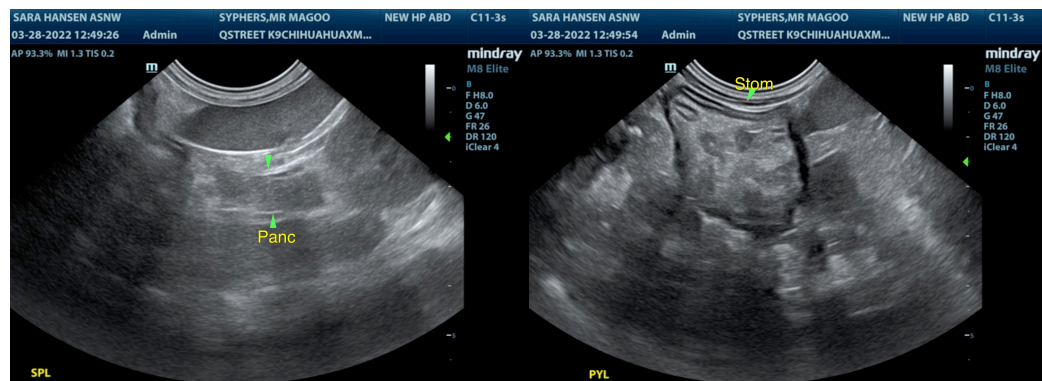
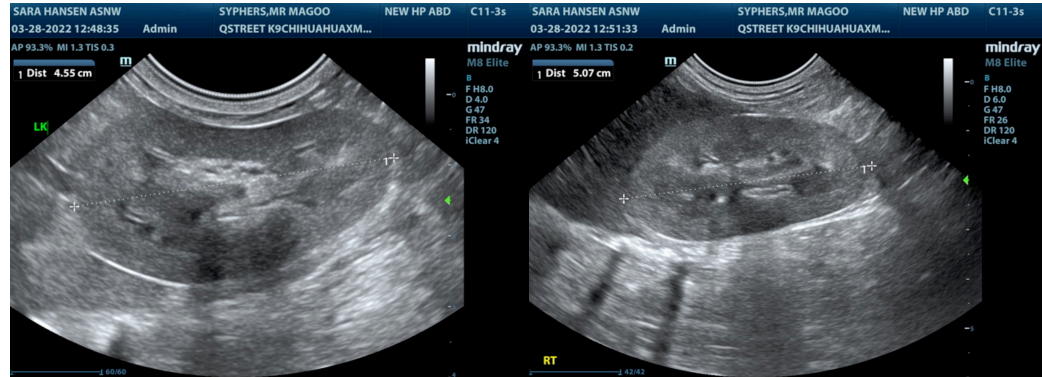
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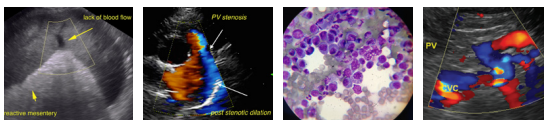
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## SEX

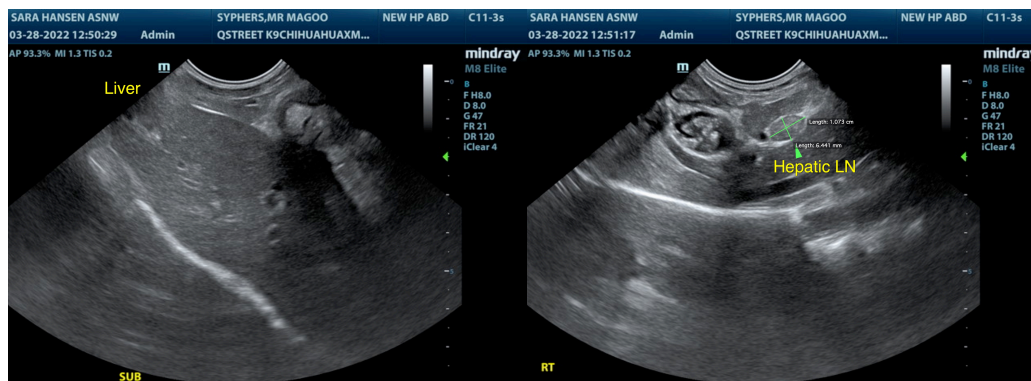
Neutered Male

## AGE

6 Years

## WEIGHT

11.3 Pounds



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)**

info@SonoPath.com

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