



**PATIENT PRESENTING CLINICAL SIGNS**

Lucie Blum

History: Hx of chronic liver dz- has been worked up and seen internist- all but biopsies have been done. Pet has been managed on low fat diet and denamarin. Last ultrasound at referral in Aug 2022 showed gallbladder debris attached to wall but no gallbladder obstruction and heterogenous hepatomegaly. Her ALT and ALP are always elevated but T bili has not been higher than 0.8 in the past. Abnormal PE/Chem/CBC/UA Results: ALP 1857, ALT 1907, AMy 1479, T bili 5.0 PE- more weight loss- 2lb in the last like 4 months

**SPECIES**

Canine

**BREED**

Miniature Poodle

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**SEX**

Female

The **bladder** in this patient was mildly thickened with slight echogenic mural changes. A moderate amount of repletion was noted. No calculi or masses were noted. Slight micropolypoid changes were noted. This is a frequent finding in older animals and may be linked to a history of chronic urinary tract infection or active urinary tract infection. Urinalysis would be recommended with culture if any evidence of inflammatory sediment is present. The region of the trigone and visible pelvic urethra were normal.

**AGE**

15 years

**WEIGHT**

8.4 lbs

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The left kidney measured 5.5 cm. The right kidney measured 4.6 cm.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**Adrenal Glands**

**IMAGING PERFORMED BY**

Dr. Scott

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 0.6 cm at the cranial pole and 0.54 cm at the caudal pole.

**HOSPITAL NAME**

HoHoKus VH

**Spleen**

**REFERRING VET**

Dr. Scott

The **spleen** was largely smooth with subtle heterogeneous parenchymal changes while maintaining normal echogenic relationship to the liver and kidney. These changes are consistent with normal age-related alteration. The capsule was smooth without noticeable impingement from within the spleen or from pathology in the adjacent abdomen. The splenic vasculature demonstrated normal volume without signs of congestion or significant contraction. No evidence of active acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**INVOICE**

44699

**DATE**

6/13/23



**PATIENT**

**Liver**

Lucie Blum

The **liver** in this patient presented polypoid gallbladder thickening with suspended debris and thickened, echogenic wall. The liver revealed mild, irregular swelling. Increased portal markings were noted along with coarse architecture. This is consistent with fibrosis and chronic cholangitis.

**SPECIES**

Canine

**Gastrointestinal**

**BREED**

Miniature Poodle

There was some residual chyme and gas was noted in the **stomach**, yet not pathological. This is consistent with end post prandial presentation. Minor gastric hypertrophy was noted. Transit of chyme into the small intestine was normal. Curvilinear patterns were maintained throughout the GI tract. No evidence of pathology. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

**SEX**

Female

**AGE**

15 years

**Pancreas**

The **pancreas** presented heterogenous parenchymal changes with mixed hyperechoic and hypoechoic parenchyma in the right limb enveloping the common bile duct, which was mildly congested. There is a potential for neoplasia. This is likely reactivation from a chronic inflammatory hepatopathy/fibrosing hepatopathy pattern with significant biliary tree component.

**WEIGHT**

8.4 lbs

**ULTRASONOGRAPHIC FINDINGS**

**INTERPRETED BY**

Hepatic fibrosis pattern with chronic cholangitis.

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

Heterogenous pancreas with hyperechoic and hypoechoic parenchyma. Right limb enveloped the common bile duct.

**IMAGING PERFORMED BY**

Dr. Scott

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**HOSPITAL NAME**

HoHoKus VH

Cor biopsy is necessary of the liver for further definition. I cannot completely ruled out the potential for underlying neoplasia. The gallbladder appears to be chronically thickened and enlarged. This is not to the typical mucocele level; however, it may be playing a more acute role in this patient. Leptospirosis titers are warranted. FNA or cor liver biopsy is warranted. A direct cholecystectomy and liver biopsy with common bile duct lavage can be considered as an option. However, I do not believe that the gallbladder is the primary issue, reactivation of chronic inflammation is a potential. The common bile duct was somewhat obscured by remodeling; however, it appeared to be mildly enlarged at 0.5 cm. Some level of post hepatic obstruction may be playing a role.

**REFERRING VET**

Dr. Scott

This is a mixed presentation of both chronic pancreatic and hepatic inflammation with likely a post hepatic component with chronic common bile duct debris and chronic cholangitis. Personally surgical intervention could be curative or at least enhance the management as well as obtaining surgical biopsies of the liver to define the underlying parenchymal disease. Liberation of the common bile duct may be possible; however, this would be somewhat precarious surgical intervention. Aggressive medical management over the next 72 hours with IV Ampicillin, nutraceuticals, Ursodiol, fluid support and broad spectrum antibiotics such as Enrofloxacin and Metronidazole combination could also be considered with a recheck sonogram after 3-5 days with focus on the biliary tree and right pancreatic limb. Guarded prognosis depending upon response to therapy and potential surgical outcome.

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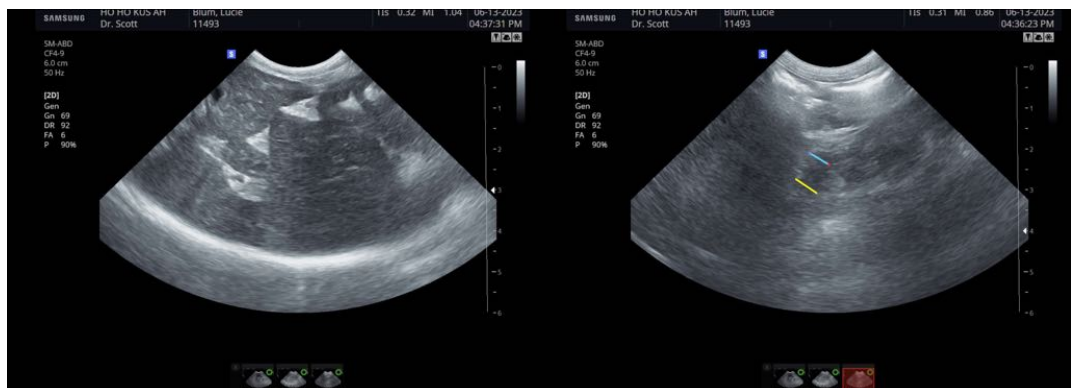
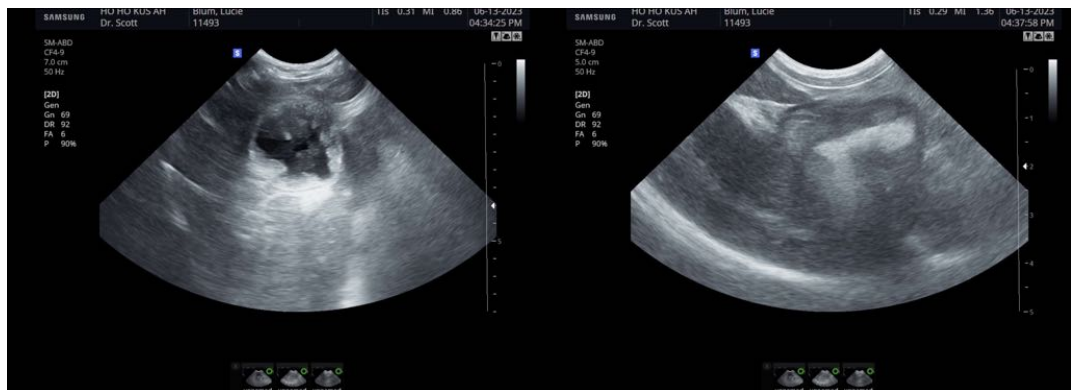
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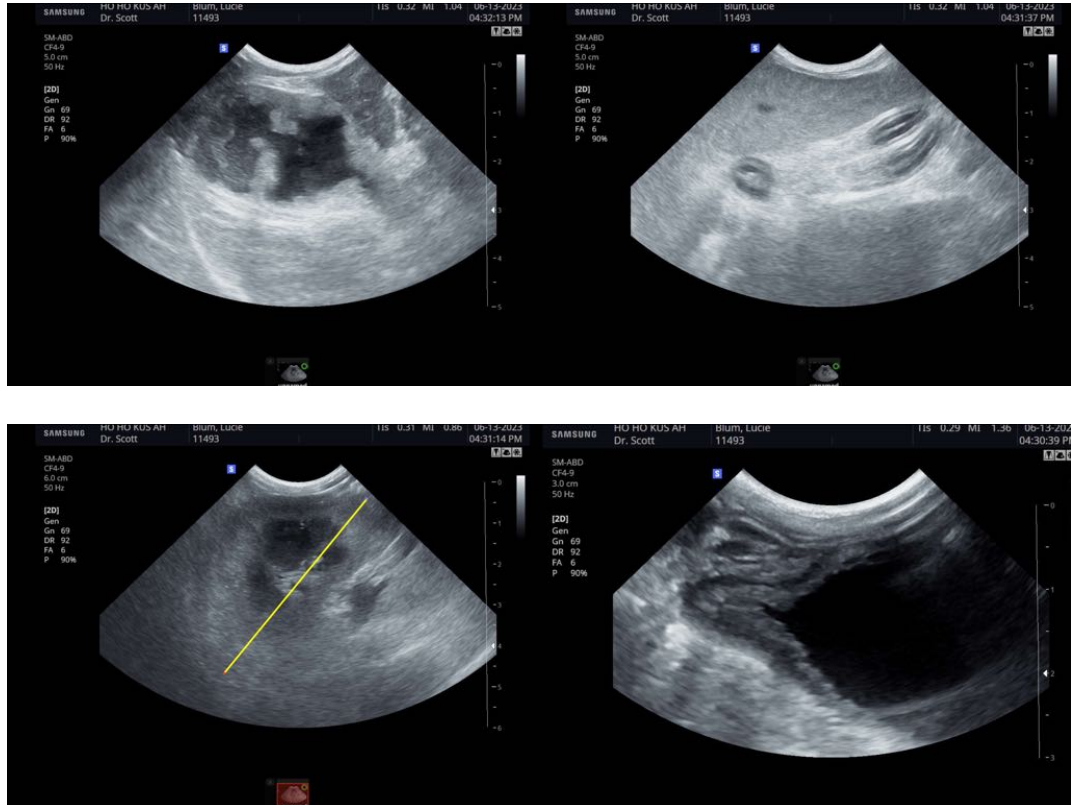
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
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