

**PATIENT PRESENTING CLINICAL SIGNS**

Appleton Montesi  
 Elevated liver values c/d, Denamarin  
 ALT 352, AST 79, TBILI 0.6, Unremarkable CBC

**SPECIES**

Feline

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**BREED**

DSH

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 4.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Moderate, non-dependent, particulate sediment was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

**SEX**

MN

The area of the aortic trifurcation was free of pathology.

**AGE**

2009

Normal renal size with asymmetrical margination were present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. No evidence of pyelectasia was noted. The left kidney measured 4.2 cm in length. The right kidney measured 4.2 cm in length.

**WEIGHT**

15.7

**Adrenal Glands**

**INTERPRETED BY**

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

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.37 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.42 cm width.

**Spleen**

**IMAGING PERFORMED BY**  
 Rebekah Jakum, CVT  
 ARDMS/RVT

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. The spleen measured 0.88 cm width at the level of the hilus.

**HOSPITAL NAME**

Community VP

**Liver/ Gallbladder**

**REFERRING VET**

Carpenter

The liver exhibited potential for mild generalized enlargement yet maintained symmetrical capsule contour and uniform hepatic parenchyma exhibiting primarily mild coarse echotexture. Focal mild areas of nonobstructive biliary tree mineralization were present subjectively in the mid to right liver. A solitary nondisruptive cystic-appearing intraparenchymal nodule was present in the deep mid ventral liver measuring approximately 1.8 cm in diameter. The gallbladder was non-distended in size containing primarily anechoic content. Focal area of congealed mildly hyperechoic debris with potential for polyp was present in the mid ventral gallbladder lumen. Nonobstructive cholelith was present in the area of the gallbladder neck and cystic biliary duct measuring approximately 0.46 cm in diameter. The proximal common bile duct was mildly dilated and tortuous without overt post hepatic

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obstruction. The common bile duct measured 0.363 cm width without evidence of common bile duct calculi, mucus, or post hepatic obstruction.

**Gastrointestinal**

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Feline

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.

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.

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

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**Pancreas**

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

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**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

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**ULTRASONOGRAPHIC FINDINGS**

- Hepatopathy exhibiting multifocal small areas of biliary tree mineral and solitary cystic-appearing intraparenchymal nodule
- Nonobstructive cholelithiasis to focal congealed mucus, potential for luminal polyp
- Mild nonobstructive proximal common bile duct dilation - age-related common bile duct changes, potential for cholangitis
- Bilateral chronic interstitial nephrosis renal pattern
- Moderate urinary bladder sediment

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The urinary bladder sediment may suggest cellular / crystalline debris or mucus. Cystocentesis for UA +/- C/S if evidence of inflammatory cells is recommended.

The overall liver was nonspecific yet is suggestive of cholangitis / cholangiohepatitis given the combined ALT/AST elevation along with the presence of biliary tree mineral which may be associated with inflammatory hepatobiliary disease, as well as mild cholelithiasis and congealed gallbladder mucus. Correlation with hepatic cytology is recommended.

The cystic appearing intraparenchymal nodule is suggestive of benign cystic biliary adenoma or complex Intraparenchymal cyst and not overtly suggestive of neoplastic criteria. Continued hepatosupportive medications +/- empirical therapy for cholangiohepatitis pending hepatic cytology could be considered.

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 ARDMS/RVT

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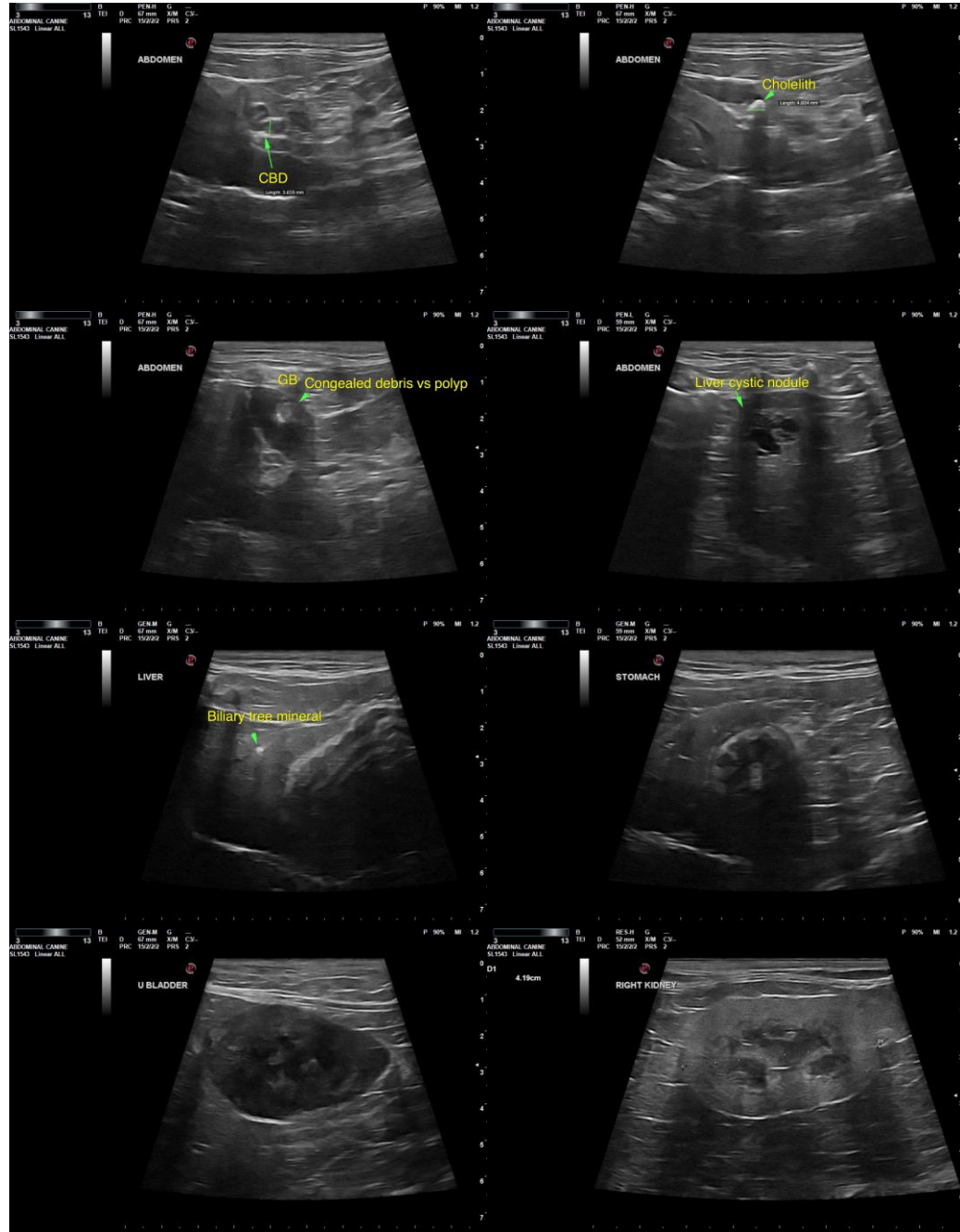
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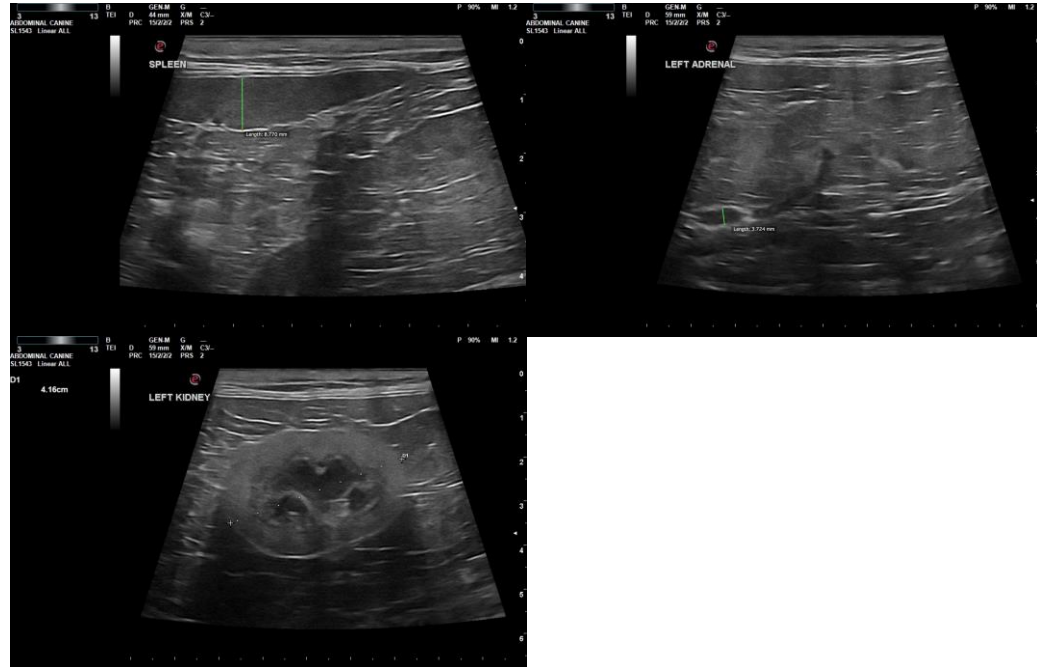
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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

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

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