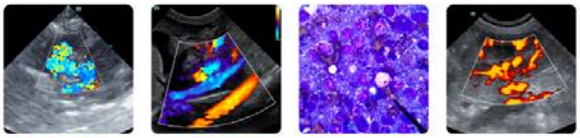

SonoPath www.thefocalzone.com info@thefocalzone.com 289.808.2608

PATIENT

Luna Tribou

SPECIES

Canine

BREED

Collie x Shepherd

SEX

Spayed Female

AGE

11 Years

WEIGHT

26.5 kg

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Amanda Stewart

HOSPITAL NAME

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PRESENTING CLINICAL SIGNS

26.5 kg (~2 kg weight loss has occurred since last year's annual exam). BAR, BCS 5/9, FAS 1-2/5 (nervous, hiding). Mild nuclear sclerosis OU. No evidence of icterus on physical exam. Mobile mass consistent with lipoma (1.5 inches x 1.5 inches) on right body wall. Physical exam otherwise normal

Abnormal PE/Chem/CBC/UA Results: ALT: >1000 U/L (unreadably high) Total Bilirubin: 299 umol/L (normal 0-15) Total Protein: 120 g/L (normal 52-82) Albumin: >60 g/L (normal 22-39) RBC: 9.6 x10^12/L (mildly elevated, likely artifact due to slow draw) Platelets: 96 x10^9/L (low, confirmed to be artifactual due to platelet clumping on slide review) Radiographic Findings Not pursued. Primary Question to Be Answered in This Exam Is there any evidence of liver abnormalities that would explain the hyperbilirubinemia, elevated ALT, hyperproteinemia, and hyperalbuminemia? Any other evidence that would explain the loss of appetite q 3 weeks?

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (5.56 cm) with rare small pinpoint cortical mineralizations. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia , infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (6.16 cm) with occasional pinpoint mineralizations. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The region of left adrenal (Cranial to left renal artery) is unremarkable but the adrenal is not distinctly visualized. No evidence of a mass effect is visualized.

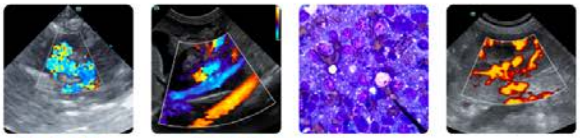
The right adrenal gland is borderline “plump” measuring 1.21 cm at the cranial pole and 0.93 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size (2.37 cm), echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is mildly heterogenous in echotexture with subtle, indistinct focal mottling. The visible



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portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and likely incidental at this time. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid and mild gas. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Jejunum wall measures 0.35 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The area of the pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Mildly heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesions are visualized associated with the liver, although imaging in the cranial abdomen is somewhat challenging in this deep chested patient. Unfortunately there are many causes for an elevation in liver enzymes that cannot be definitively diagnosed by ultrasound alone.

Consider rechecking liver and bilirubin levels on a clean stick sample with a rehydrated patient if there is clinical concern that the elevation in bilirubin is not real (lab error?), icterus not noted on exam.

Consider the following:

- Consider screening for Leptospirosis if clinically appropriate.

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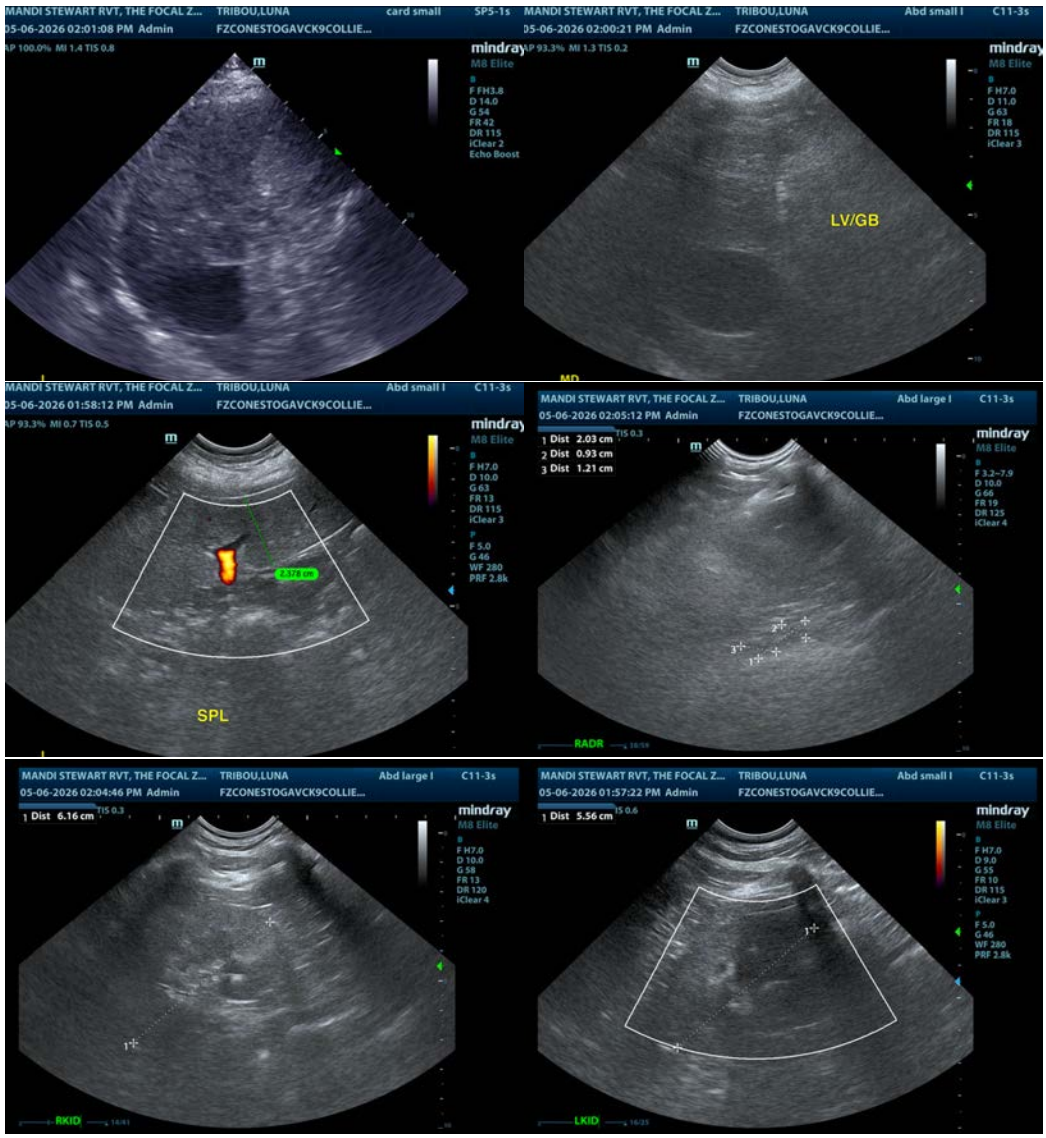
- You could consider liver function testing, but bile acids are likely redundant if the bilirubin is elevated.
- Consider a fine needle aspirate of the liver (provided coagulation parameters are normal).

If liver enzymes are persistently elevated, you could consider empirical treatment for acute liver injury with a course of Ursodiol, Denamarin, and antibiotics. If liver enzymes are persistently elevated, ultimately biopsies of the liver may be warranted with samples for histopathology, culture and copper levels.

Consider sedation for subsequent imaging, as patient size/conformation and motion make imaging of the cranial abdomen challenging. A contrast CT scan could also be considered if this is an option.



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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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

info@sonopath.com