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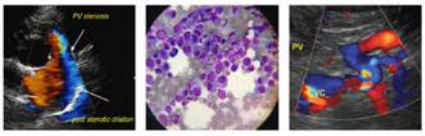

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PATIENT

Sophie Lia

SPECIES

Canine

BREED

Cavalier King Charles Spaniel

SEX

Spayed Female

AGE

8 Years 9 Months

WEIGHT

25.2 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Union Lake VH

INVOICE

41063

DATE

9/6/22

PRESENTING CLINICAL SIGNS

Hx of heart disease (mitral valve) and cough/gag for the past 3 weeks. Elevated ALP (2,528), abnormalities on x-ray.

Abnormal PE/Chem/CBC/UA Results: Exam findings and abnormal lab values: 8/25/22- whole body rads (lat and V/D)-possible mineralizations in area of liver/GB?- Dr. Marti had to images sent to specialist at OVRS to review. Review stated: The mineralization superimposed over the hepatic silhouette is compatible with biliary tract mineralization, often secondary to chronic biliary tract inflammation, as with cholangitis and/or cholecystitis. Correlate to the biochemistry and consider abdominal ultrasound.

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 (5.44 cm) with pinpoint non-obstructive nephroliths. 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.57 cm) with pinpoint non-obstructive nephroliths. 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.61 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.69 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, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a small, very subtle, irregular, hypoechoic lesion within the splenic parenchyma measuring 0.59 cm.

Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. In the region near the gallbladder and bile duct, there are numerous pinpoint hyperechoic foci, consistent with small mineralizations within the intrahepatic bile ducts. 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. There is a moderate amount of non-organized echogenic debris. The bile duct appears dilated and somewhat tortuous proximally, as it is visualized at the level of the duodenal

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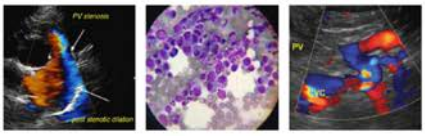

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papillae and appears normal at 0.23 cm. Intrahepatic biliary stones are visualized near the gallbladder and bile duct.

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 uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Duodenum wall measures 0.61 cm. Jejunum wall measured 0.48 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. 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 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

- Small, ill-defined, hypoechoic lesion within the spleen – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This lesion is very subtle. Consider continued monitoring.

- Large, 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.

- Moderate gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

- Small pinpoint mineralizations visualized within the intrahepatic bile ducts – This can be an incidental finding or associated with cholangiohepatitis and biliary disease.

- Subjectively thickened small intestine – The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease).

- Pinpoint non-obstructive nephroliths visualized in both kidneys – The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

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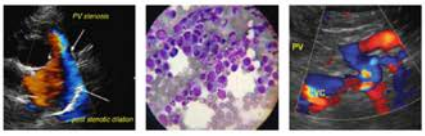

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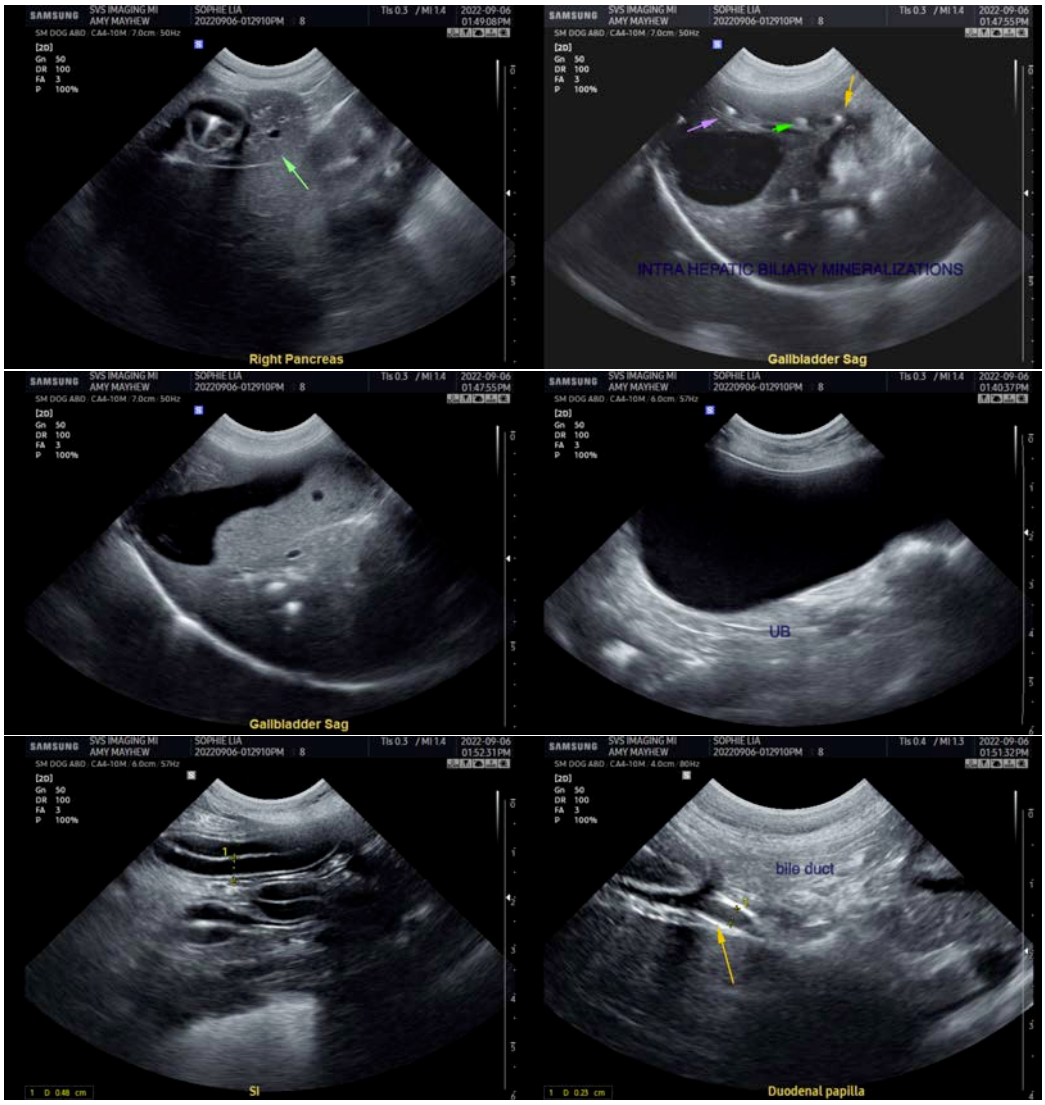
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is large and heterogeneous, and the gallbladder has a large amount of debris. There is no evidence of a biliary obstruction, but there are small mineralizations visualized within the intrahepatic biliary ducts. This can be an incidental finding but it can also be seen with chronic biliary disease or cholangiohepatitis and progress. At this time, the majority of the mineralizations are seen near the portal hepatis and the caudal liver. I would recommend chronic (lifelong) Ursodiol therapy as well as Denamarin and potential monitoring for an ALT spike or an indicator that there is a secondary infection. The liver is large and heterogeneous as well, so there could be a primary vacuolar hepatopathy present contributing to the elevation in ALP seen. You could consider a liver function test and a fine needle aspirate of the liver to try and confirm this.

There is a very small subtle lesion visualized within the spleen. Recommend continued monitoring +/- fine needle aspirate.

The small intestine appears subjectively thickened for this size of a dog. If chronic GI signs are present, you could consider a novel protein/hydrolyzed protein prescription diet and further workup for primary GI disease.



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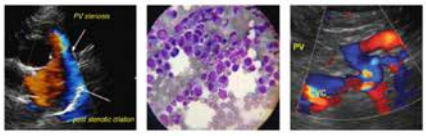

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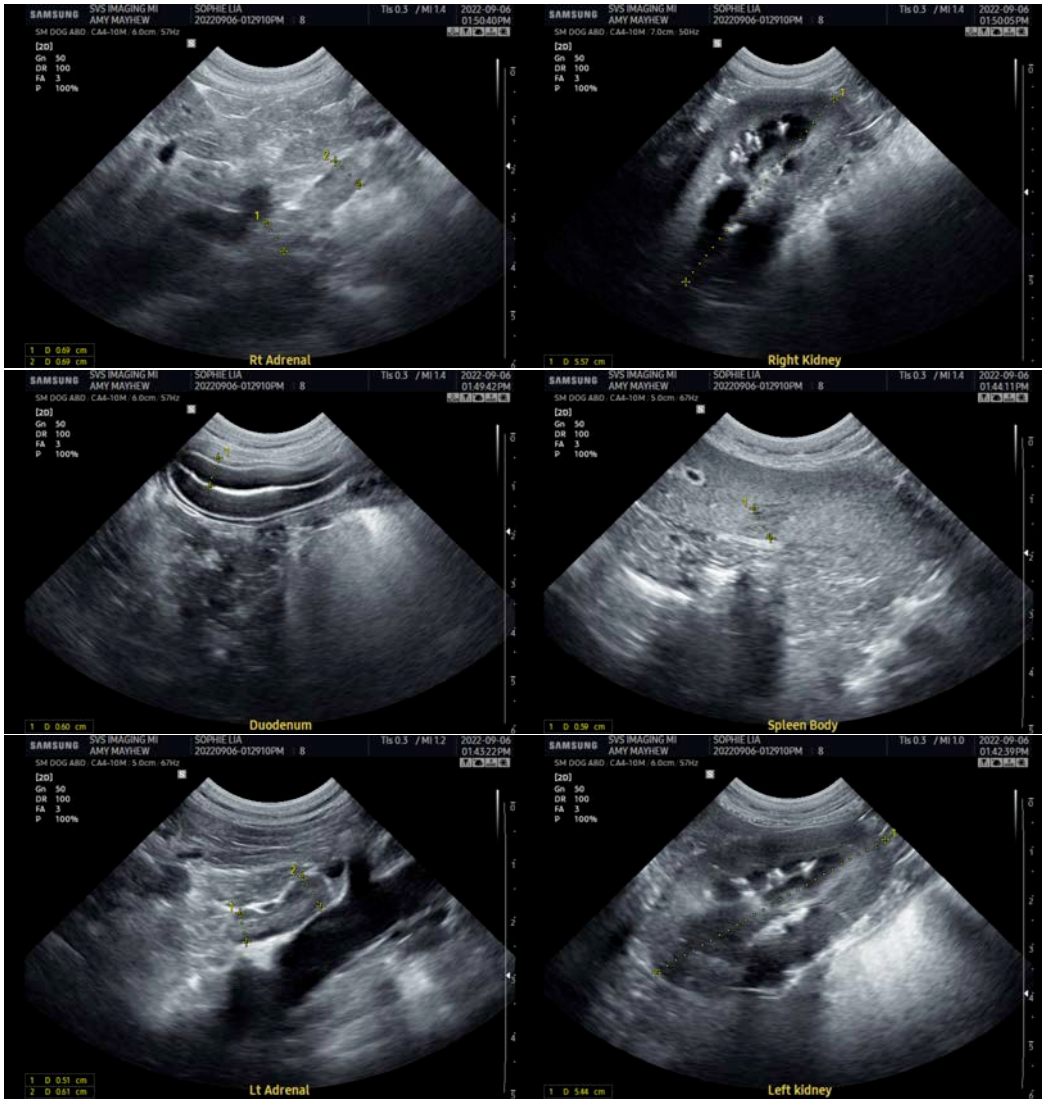

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com