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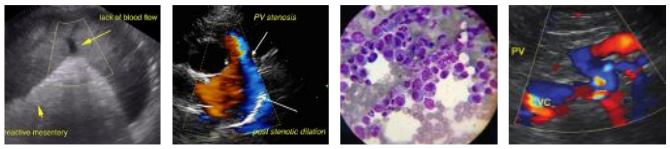
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Thomas Sedgewick

SPECIES

Canine

BREED

German Shepherd

SEX

MN

AGE

4

WEIGHT

34.6kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Westcott

HOSPITAL NAME

Dr. Westcott

REFERRING VET

Dr. Westcott

INVOICE

13381ag

DATE

04/03/2023

PRESENTING CLINICAL SIGNS

Presurgical blood work run at the referring veterinarian suggested liver dysfunction based on repeated very high fasting and postprandial bile acids. Additionally there was a mild elevation in ALT He has been placed on SAMe antioxidant and ursodiol. He was hospitalized for xylitol toxicity over a year ago and it is thought that this may have caused some permanent yet stable liver damage.

Abnormal PE/Chem/CBC/UA Results: Mild elevation in ALT, very high pre-prandial bile acids. Some amorphous crystals noted in the urine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with focal areas of mild dependent mineral to small calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

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 slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. Bilateral pinpoint medullary mineral was present. The left kidney measured 8.6 cm in length. The right kidney measured 8.2 cm in length.

The area of the aortic trifurcation was free of pathology.

The area of the residual prostate appeared normal and free of pathology.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.34 cm width at the caudal pole and 2.9 cm length. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.37 cm width at the caudal pole and 4.0 cm length.

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.

Liver/Gallbladder

The liver exhibited subjective subnormal size with symmetrical contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. Subjective adequate vascular volume with borderline increased yet indistinct portal vascular borders was present. No masses or nodules noted. The gallbladder was distended in size with prominent isoechoic walls. The gallbladder contained primarily anechoic luminal content with moderate congealed hyperechoic non-organized debris and non-organized non-dependent sediment. The cystic and common bile ducts were normal.

Gastrointestinal

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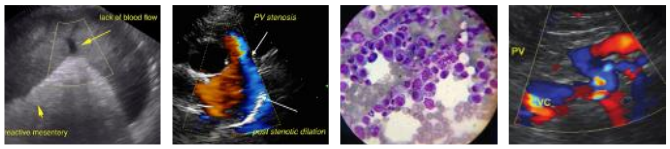

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The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained minor retained anechoic pyloric fluid with no signs of ileus, obstruction or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Intermittent non-specific minor hyperechoic duodenojejunal mucosal speckling was present. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

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

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 was evident.

Free Abdomen

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Mild dependent urinary bladder mineral/small calculi.
- Pinpoint bilateral renal medullary mineral.
- Borderline subnormal liver size exhibiting adequate vascular volume.
- Moderate congealed gallbladder debris/sludge, suspect mild cholecystitis.
- Non-specific minor segmental small bowel mucosal speckling.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Submission of a urine sample for pathology review to further clarification of sediment/mineral as well as C/S is recommended. A definitively visualized extra/intra hepatic shunt was not obvious. Elevated pre-prandial bile acids may be secondary to gallbladder contraction or hypomotility as indicated by degree of congealed gallbladder sludge. If significant persistent pre/post bile acids or clinical concern for non-obvious shunt, advanced imaging such as gold standard CT with contrast may be considered.

Empirically hepatosupportive medications and some or all of the following protocol may prove beneficial.

Royal Canin Hepatic Support diet or Hills L/D, Metronidazole (7.5 mg/kg PO bid) over the next 14 days, Lactulose (Oral: 3.1-3.7 g/5 ml lactulose in a syrup base) long term to target 2-3 soft stools/day, with a high-quality protein supplement of minor amount of yogurt or cheddar cheese. Monitor bile acids, with attention paid to dropping albumin, BUN or cholesterol. SAMe and nutraceuticals as needed. Ursodiol (10-15 mg/kg p.o. q24h) can be considered as hepatoprotectant and to enhance bile flow. Zinc serum level keep between 200—500 ug/dl. If deficient then Tx zinc acetate 1-3 mg/kg/day. Gastrointestinal protectants are recommended if the patient is anorexic.

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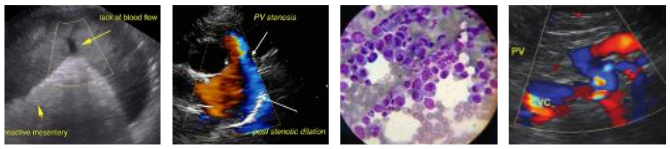

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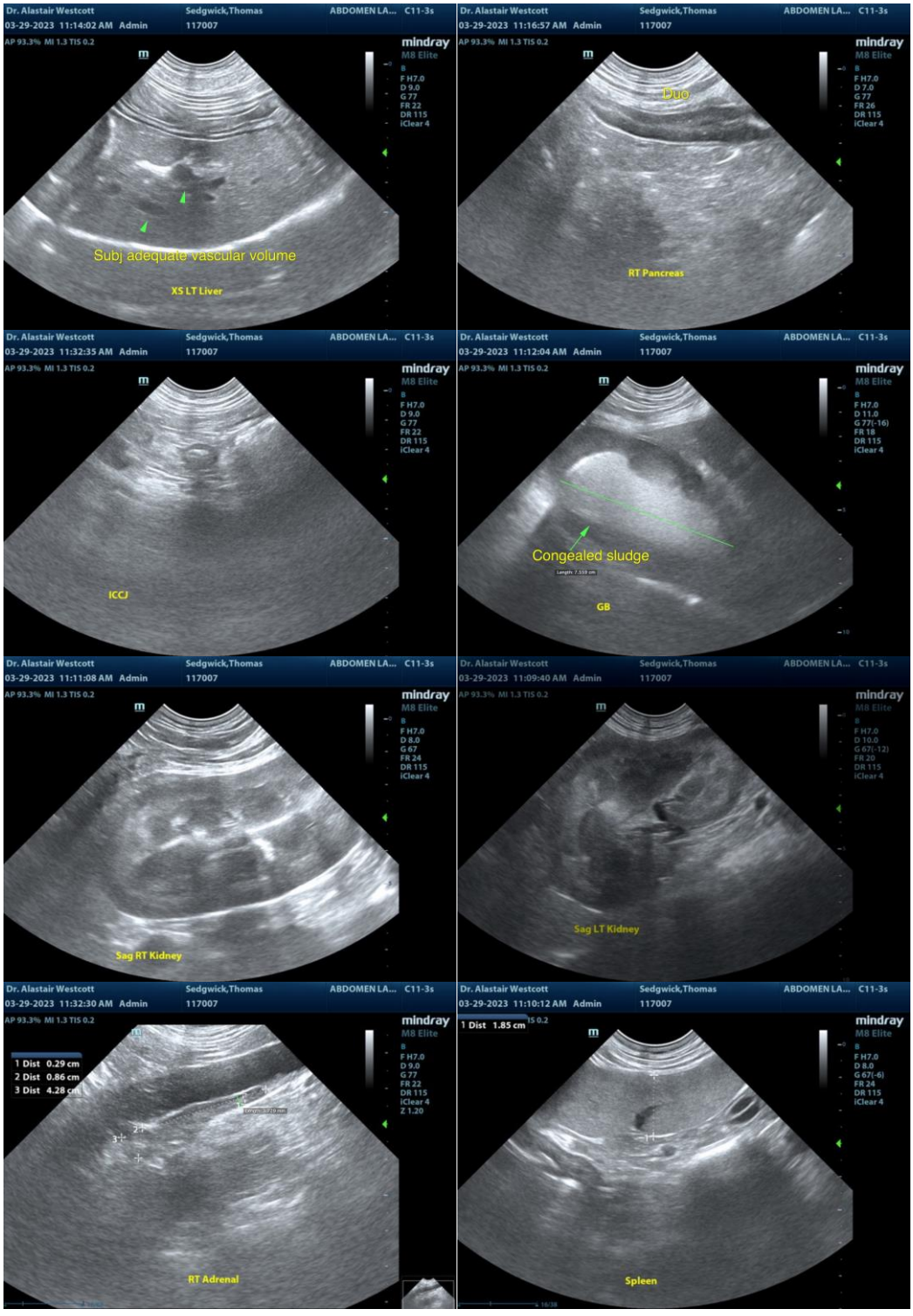

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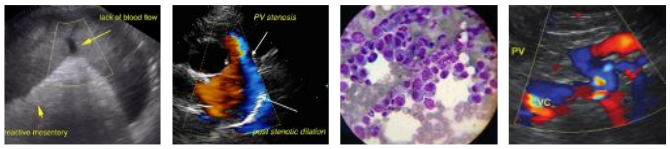

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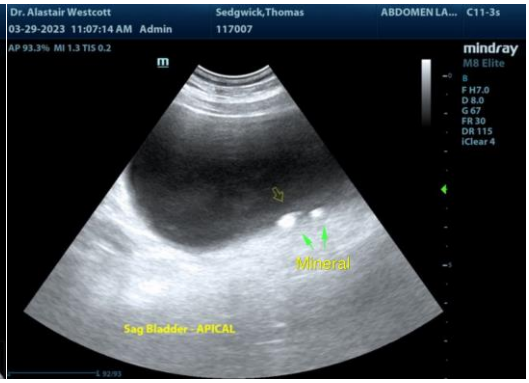

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
mac.daniel@sonopath.com