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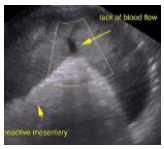
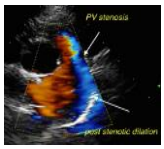
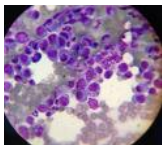
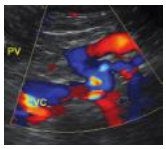

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Shelby Swett

SPECIES
Canine

BREED
Havanese

SEX
FS

AGE
7 yr

WEIGHT
12 lb

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Ebersole

HOSPITAL NAME
Scanvet

REFERRING VET
Dr. McMullin

INVOICE
10805ag

DATE
06/14/2022

PRESENTING CLINICAL SIGNS

History: Presented to PetMedic on 6/10 for vomiting and painful/lethargic behavior. BW and Rads done. T-102.9. Symptoms improved with bland diet. Recheck exam yesterday painful abdomen, focally in area of GB. Hx of struvite crystaluria, on RC Urinary SO. *NPO this am, on IVF in hospital

Abnormal PE/Chem/CBC/UA Results: PE: Depressed, weak. Painful with any pressure on cranial abdomen. BW (6/10) BUN 4, Phos 2.3, ALT 136, Chol 96, Amylase 417. BW (6/13) BUN 15, Glucose 70, Chol 93, Alb. 2.3, T Bili 0.4, Bili (unconj) 0.3, K 2.8. WBC 44.5k, Neut 33k, Monos 6.6k. Hct 45%. Low MCV, MCH and MCHC. cPLI Normal Rads (6/10): gastric material (food vs. other) but no obstructive pattern

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. A trace amount of sand measuring 0.72 cm was observed. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

The kidneys revealed polycystic changes bilaterally with swollen contour and mild hypervascularity. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. An anechoic cyst was noted on the caudal pole of the right kidney. Slight corticomedullary calculi was noted. The left kidney measured – cm in length. The right kidney measured 5.16 cm in length.

Adrenal Glands

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 left adrenal gland measured 2.19 cm in length by 0.4 cm caudal pole width by 0.39 cm cranial pole width. The right adrenal gland measured 2.29 cm in length by 0.52 cm caudal pole width by 1.19 cm cranial pole width.

Spleen

The spleen presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

Liver

The liver presented subnormal in size with slight coarse architecture. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Minor increased portal markings were noted consistent with inflammatory hepatopathy. An extra hepatic portosystemic shunt was noted, the position would suggest splenic vein origin at the connection of the portal vein. The caval aortic ratio was normal at 1:1. The portal vein measured 3 mm post shunt. The vena cava measured 5 mm and the aorta measured 5 mm. The shunt appeared to enter into the azygos at the level of the aortic hiatus.

The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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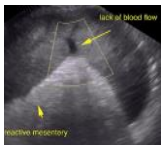

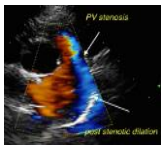

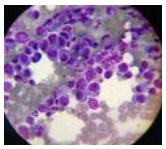
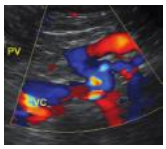

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Gastrointestinal

Examination of the gastrointestinal tract revealed a full stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Some shadowing material was noted in the pylorus yet does not appear obstructive. 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.

Pancreas

The base and limbs of the pancreas were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC FINDINGS

- Extrahepatic portosystemic shunt-splenic azygos shunt suspected
- Bladder sand
- Polycystic kidneys with hypervascularity
- Subnormal liver size with increased portal markings-consistent with inflammatory hepatopathy

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A CT evaluation for further assessment is recommended. A bile acid profile is warranted. The bladder sand can be addressed at surgery. A rescan after 12 hour NPO to assess the pyloric outflow is recommended as some of the minor shadowing material may be a comorbidity of gastric foreign matter that may be complicating the presentation. The comorbidities of inflammatory hepatopathy and GI issues likely sent this patient in to clinical status when running sub clinically for portosystemic shunting in its lifetime. The splenic azygos shunt pattern would explain late onset as this is a common late onset type of extra hepatic shunt.

The following medical management is recommended until surgical correction can occur.

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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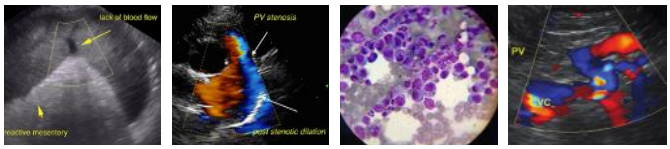

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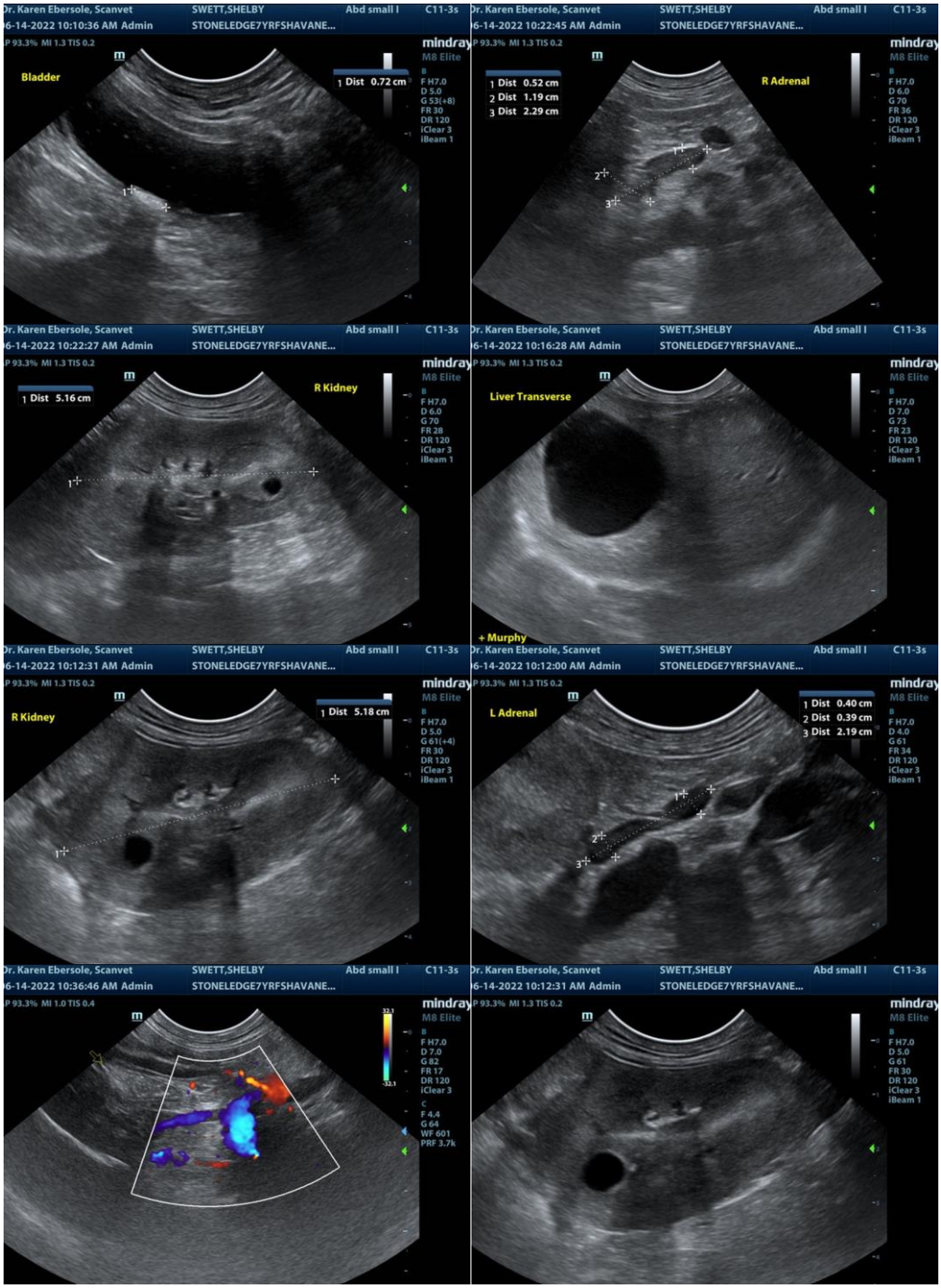

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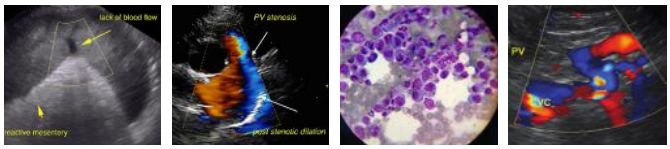

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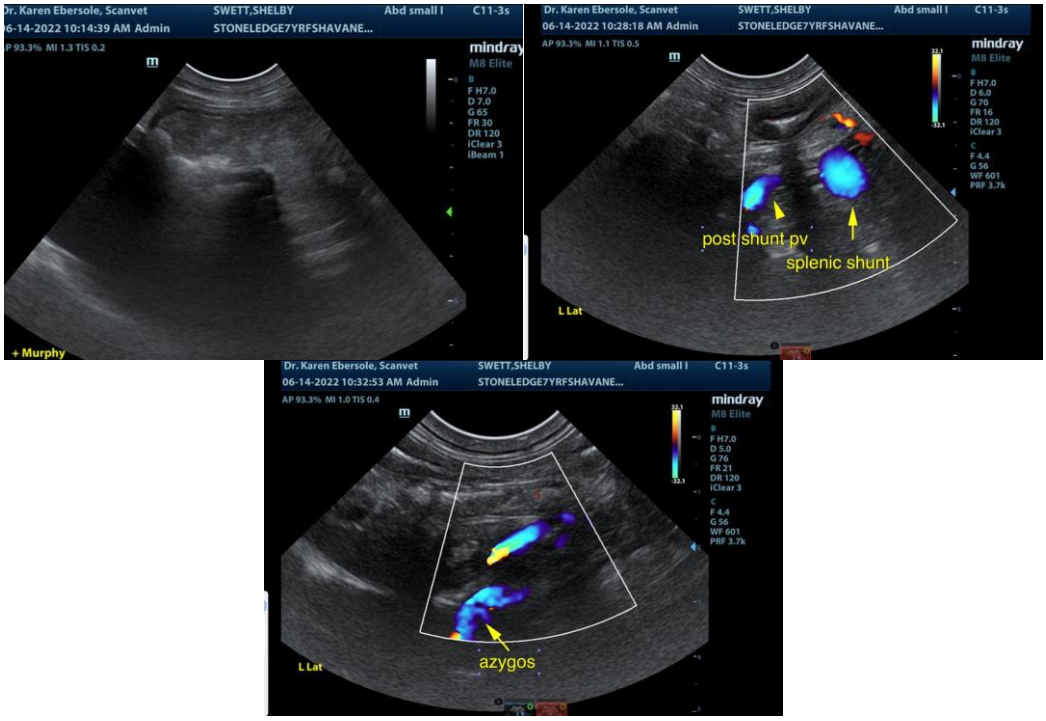

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Eric.Lindquist@SonoPath.com