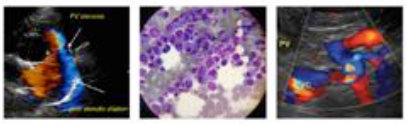


PATIENT

Molly Sheldon

SPECIES

Canine

BREED

Labrador

SEX

Intact female

AGE

19 weeks

WEIGHT

14.4 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Hahn

INVOICE

30718

DATE

5/24/22

PRESENTING CLINICAL SIGNS

Cardiac murmur auscultated in the early puppy visits, becoming more intense. The puppy also has juvenile type 1 diabetes that we have started treating with insulin. She is underweight and rate of growth is slow with multiple congenital abnormalities. PU/PD
Abnormal PE/Chem/CBC/UA Results: Cardiac murmur, most intense on the Right side, but can auscultate on both sides.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is very well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass. Ureteral papillae do not show any abnormalities. Filling of the urinary bladder was observed – no abnormalities observed. A very small amount of anechoic effusion is observed ventral to the urinary bladder at the end of the study.

Kidneys

The **left** kidney measures 7.01 cm (renomegaly). The capsule is smooth. The cortex is mildly hyperechoic (i.e., it is isoechoic to the spleen) and thicker than usual. The definition of the cortico-medullary junction is preserved. There is no evidence of nephroliths or pyelectasia. Renal blood flow is within normal limits to mildly increased. The surrounding mesentery is not hyperechoic. A scant amount of anechoic effusion is visualized caudal to the left kidney.

The **right** kidney measures 7.56 cm (renomegaly). Findings are similar to the left kidney, including the small amount of ascites dorsal to the kidney.

Aortic bifurcation/trifurcation

No abnormalities observed.

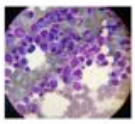
Adrenal Glands

The **left** adrenal gland measures 0.31 cm at the cranial pole, 0.34 cm at the caudal pole and 1.31 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.41 cm at the cranial pole, 0.47 cm at the caudal pole and 3.32 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.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Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. It is homogeneous, but diffusely hyperechoic; i.e., the liver is mildly hyperechoic to the spleen. The hepatic veins are not congested or smaller than usual. Although an obvious shunt is not visualized, a large amount of gas is present in the gastrointestinal tract and it is difficult to follow the vessels. Numerous findings are present that support a diagnosis of a shunt, therefore, a re-evaluation is suggested.

The gallbladder (GB) is moderately distended. A significant amount of echogenic material is present in for a puppy of Molly's age. The sludge is free floating, gravity dependent and inspissated, some of which is adhered to the wall circumferentially. Choleliths are present based on the acoustic shadowing. The GB wall is within normal limits in thickness and echogenicity. Signs of edema or inflammation are evident based on the thin anechoic "halo" surrounding the GB. A trivial amount of anechoic fluid is present ventral to the GB. The cystic and common bile ducts could not be followed due to the large amount of gas in the gastrointestinal tract. There are no signs of an obstruction.

Gastrointestinal

Ingesta is present in the lumen of the stomach. It is assumed that Molly was not fasted due to her diabetes. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

Gas, fluid and ingesta are present within the lumen of the small intestines. Wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Peristalsis appears to be normal. Abnormally dilated loops of bowel are not observed.

A large amount of gas is present in the transverse colon.

The colonic wall is not thickened and mural detail is considered normal. Soft stools are present within the colon.

Pancreas

No overt abnormalities are observed with the echogenicity or echotexture of the either limb. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

Other

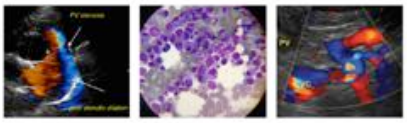
Lymph nodes (LNs)

Iliac LNs visualized; WNL for a young puppy.

A splenic lymph node is prominent, but WNL in shape, echogenicity and echotexture.

Mesenteric lymph nodes do not show any abnormalities.

Findings are consistent with a puppy.



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Abdominal effusion

A scant amount of anechoic effusion is visualized caudal to the left kidney, dorsal to the spleen and ventral to the GB. A very small amount of anechoic effusion is observed ventral to the urinary bladder at the end of the study.

ULTRASONOGRAPHIC FINDINGS

Abdominal Findings

- A few changes are suggestive of a portosystemic shunt, for example, bilateral renomegaly, gallbladder sludge and choleliths. Urinary cystoliths are not evident. A re-evaluation of the vasculature, including the splenic vein is recommended to exclude a portosystemic shunt. It would be ideal if the ultrasound could be performed just prior to Molly's next meal or 6-8 hours following her meal.
- Gallbladder sludge may cause clinical signs of gastroesophageal reflux disease (GERD) in some dogs, therefore, obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on her history.
- Ingesta is present in the lumen of the stomach. It is assumed that Molly was not fasted due to her diabetes. A delay in gastric emptying is possible if she was fasted for 6 to 8 hours.
- The slightly prominent lymph nodes are consistent with Molly's age, and are not considered clinically significant.
- The ascites may be physiological in nature based on the very small amount present.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on Molly's history.

There is one reported case of juvenile diabetes in a young puppy with concurrent pituitary dwarfism. Therefore, further evaluation for hypothyroidism and hypoadrenocorticism is recommended, particularly if Molly has slow or abnormal tooth eruption. A thyroid profile, insulin-like growth factor (as a surrogate for growth hormone concentrations) and a baseline cortisol concentration may be considered/are suggested depending on Molly's clinical signs.

A re-evaluation of the vasculature, including the splenic vein is recommended to exclude a portosystemic shunt. It would be ideal if the ultrasound could be performed just prior to Molly's next meal or 6-8 hours following her meal.

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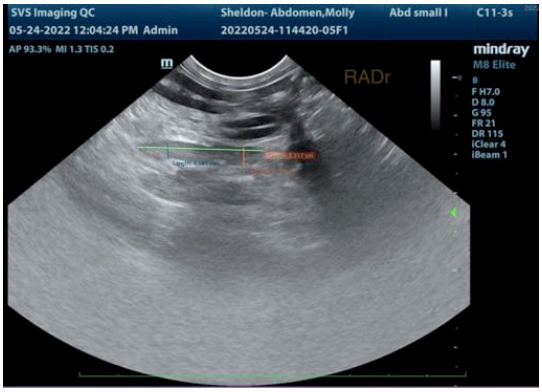

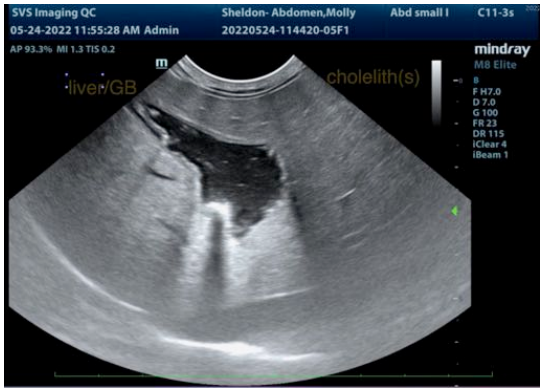

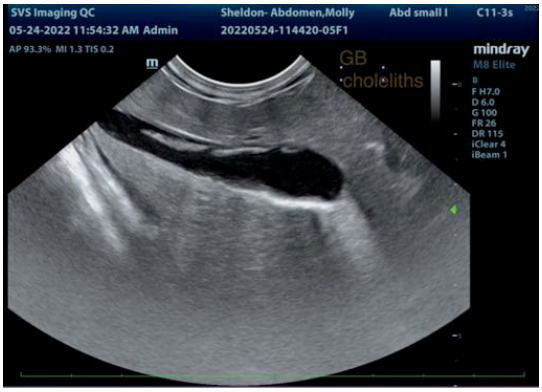

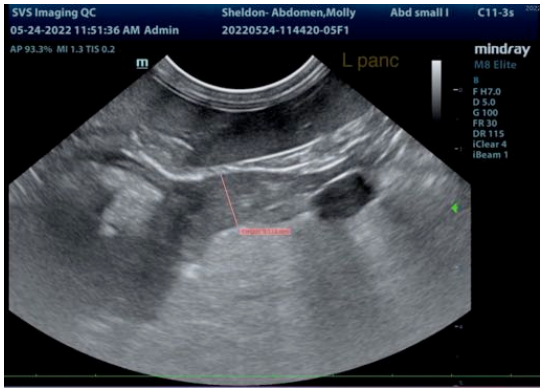

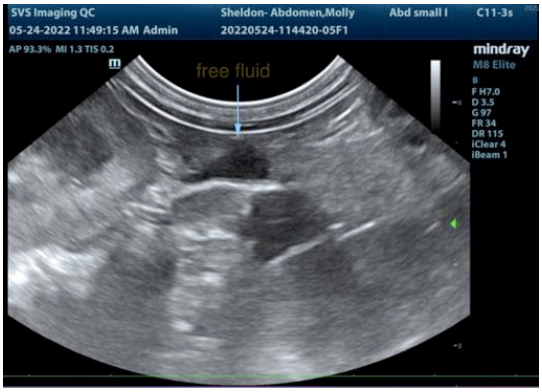

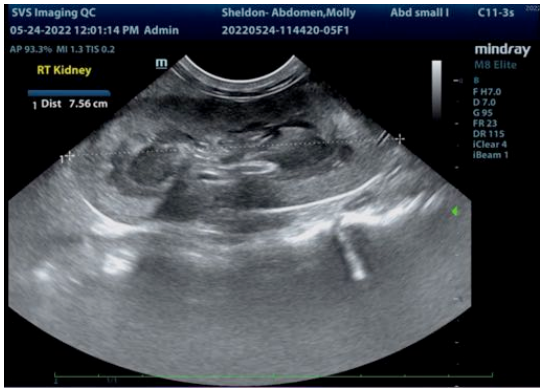

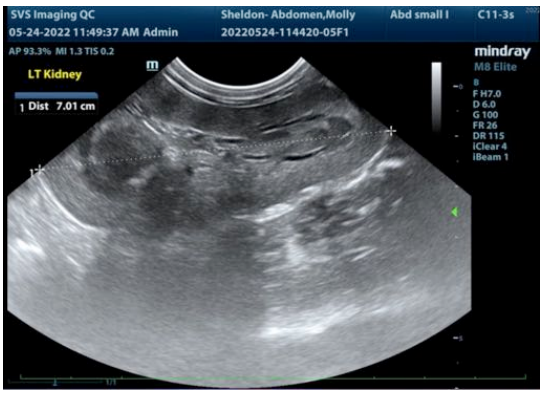

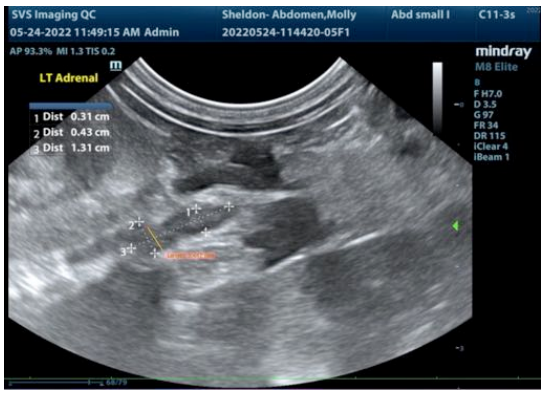

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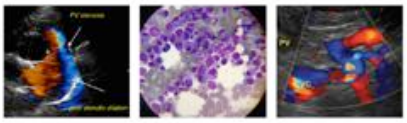

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com