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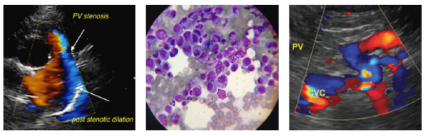

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PATIENT
Leone Merrilat

SPECIES
Canine

BREED
Rottweiler X

SEX
Neutered Male

AGE
10 Years

WEIGHT
70 Pounds

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Amy Mayhew, LVT

HOSPITAL NAME
SVS Imaging MI

REFERRING VET
Vet Select of Dearborn

INVOICE
36956

DATE
4/15/22

PRESENTING CLINICAL SIGNS

Patient presented for ongoing diarrhea and lack of appetite. Based on lab work, a presumptive diagnosis of Inflammatory Bowel Disease was made, but he has not responded to steroids and other medications. He is having continued diarrhea, weight loss, and muscle wasting.
Abnormal PE/Chem/CBC/UA Results: See attached. X-ray showed a possible suspicious area in the caudal abdomen that might indicate a tumor.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone, and there is no evidence of sediment, cystoliths, polyps or a mass. An evaluation of the urethra is prevented by gas and stool within the colon.

A small portion of the prostate is observed. It is homogenous and within normal limits for a neutered male.

The left kidney measures 6.29 cm. The capsule is smooth. Its overall architecture is well preserved. The cortex is mildly hyperechoic. A very mild loss of the normal definition of the cortico-medullary junction is present, which is not uncommon for a dog of Leone's age. A very small amount of mineralization of the pelvis is observed, without signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

The right kidney measures 6.90 cm. Findings are similar to the left kidney.

Aortic bifurcation/trifurcation: No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.61 cm at the cranial pole and 0.58 cm at the caudal pole. 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 0.69 cm at the cranial pole and 0.65 cm at the caudal pole. 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 or echogenicity. The capsule is smooth. Multiple pinpoint hyperechoic foci are observed scattered throughout the parenchyma, which are likely due to mineralization. There are no overt signs of neoplasia. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

A well circumscribed, hypoechoic nodule is noted at the tail. It measures 0.43 cm (in diameter) x 0.62 cm (in length). The nodule does not disrupt the integrity of the capsule. Its appearance is suggestive of a benign process, such as nodular or lymphoid hyperplasia and extramedullary hematopoiesis. Neoplasia is considered unlikely.

Liver

There are no obvious signs of hepatomegaly. Its borders are smooth, but mildly rounded. The liver is diffusely hyperechoic; it is mildly hyperechoic to both the falciform fat and right kidney. It is homogeneous, other than a slightly ill-defined hyperechoic region dorsal to the gall bladder. No abnormalities are observed with the hepatic vessels visualized.

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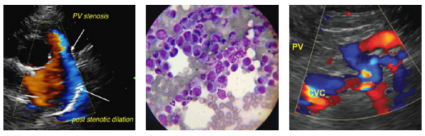

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The gallbladder wall is within normal limits in thickness and echogenicity. A trivial amount of free floating echogenic material is observed within the GB. There are no signs of an obstruction based on the appearance of the biliary tree.

Gastrointestinal

A moderate amount of ingesta and moderate to marked amount of gas are present within the lumen. Although the gastric wall is within normal limits in thickness and the wall layers are well defined, subjectively, the muscularis is more prominent. No obvious abnormalities are observed with its peristalsis.

Mild fogging of the duodenum is present. Moderate to marked amount of ingesta are present within the lumen of the intestinal tract, in addition to a moderate amount of fluid.

The small intestinal wall thickness, including the duodenum, is within normal limits, however, fogging and stippling of the mucosa is present, in addition to fogging of the muscularis. The mesentery surrounding the small intestines is hyperechoic. "Ineffective" peristalsis is noted throughout the small and large intestines, i.e., a "to and fro" motion is observed, consistent with a moderate to severe ileus.

A large amount of gas is present in the transverse colon. The colonic wall is not thickened and mural detail is preserved, however, it is abnormally dilated. The fecal matter within the colon has a granular echotexture and is liquid. A severe ileus is present.

Pancreas

The pancreas has a moderately coarse echotexture, with smooth contours. These changes are most likely due to nodular hyperplasia and areas of fibrosis, which are considered secondary to age.

Other

Lymph nodes

Lymphadenomegaly. Complete obliteration of the normal architecture of multiple lymph nodes is observed in the mid to caudal abdomen, including the mesenteric root.

One of the lymph nodes in the mid to caudal abdomen is severely hypoechoic with echogenic areas and irregular contours. It measures 4.98 cm in diameter x 9.12 cm in length.

Another lymph node in the mid abdomen, measuring 45.5 cm in diameter x 3.5 cm in length is also severely hypoechoic with a "lacey" echotexture.

Lymphadenomegaly of one of the chains of mesenteric lymph nodes.

The mesentery surrounding the lymph nodes are severely hyperechoic.

One of the medial iliac lymph nodes is mildly to moderately enlarged and hypoechoic, measuring 8.6 mm.

Abdominal effusion

A scant amount is visualized ventral to the apex of the urinary bladder

ULTRASONOGRAPHIC FINDINGS

- Diffuse ileus, which is most severe in the colon. Liquid stools are present within the colon
- A cobalamin deficiency has been confirmed based on Leone's blood work and signs are present on his CBC (MCV at high end of normal reference range, MCHC at low end). Folic deficiency is also possible due to the chronicity of Leone's clinical signs.

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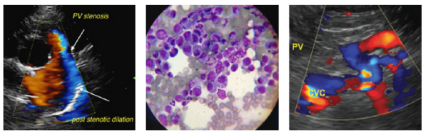

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- Diffuse lymphadenomegaly. The appearance of the lymph nodes is most consistent with infiltrative, lymphoproliferative disease, such as a round cell tumour, such as lymphoma, mast cell or histiocytic sarcoma. However, an aggressive inflammatory process, such as severe inflammatory bowel disease, as well as an infection with attaching and effacing *E. coli* and secondary lymphadenitis, cannot be excluded. A diagnosis cannot be excluded without performing fine needle aspirates with cytology of the affected nodes.
- Very mild degenerative changes of both kidneys, which are suggestive of age related degeneration.
- The splenic nodule is suggestive of a benign process, such as nodular or lymphoid hyperplasia and extramedullary hematopoiesis. Neoplasia is considered unlikely.
- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which may occur due to stress (chronic illness), as well as the administration of glucocorticoids.
- The pancreas' coarse, mildly heterogeneous echotexture are most likely due to nodular hyperplasia and areas of fibrosis, which are considered secondary to age.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Performing fine needle aspirates with cytology of the affected nodes is strongly recommended, +/- culture and sensitivity, depending on the prevalence of infectious diseases in your area of practice.
- If FNAs are not diagnostic endoscopy and biopsies of the upper and lower GI tract are recommended. If these are not pursued, the following may be pursued,
- Supplementation with cobalamin at 1000 ug/injection is recommended; once a week for 6 weeks, then every 2 weeks for 6 weeks, and then once a month thereafter.
- Supplementation with folic acid may also be required.
- Treatment with enrofloxacin at 5-7.5 mg/kg PO once a day may be considered depending on the FNA results to exclude attaching and effacing *E. coli*. Ideally, diagnosis would be made by performing FISH tests on colonic biopsies. If a response is observed, a total of 8-12 weeks of treatment is often required.
- If not already tried, supplementation with *psyllium* fibre is strongly recommended, as some of dogs may fibre responsive. A gradual introduction is recommended to avoid gas and bloating.
- Depending on Leone's history, deworming with a broad spectrum dewormer, such as fenbendazole, is suggested.
- If Leone is currently receiving a hydrolyzed diet, fibre should be supplemented as these diets are low in fibre.
- A diet, such as Hill's Gastrointestinal Biome, if available, may also be tried.
- A baseline (random) cortisol is not necessary at this time based on the findings of lymphadenomegaly.
- The administration of a hypoallergenic source of protein (protein powder, for example), may be

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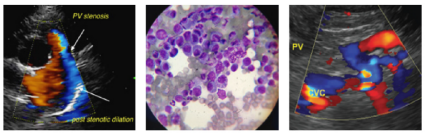

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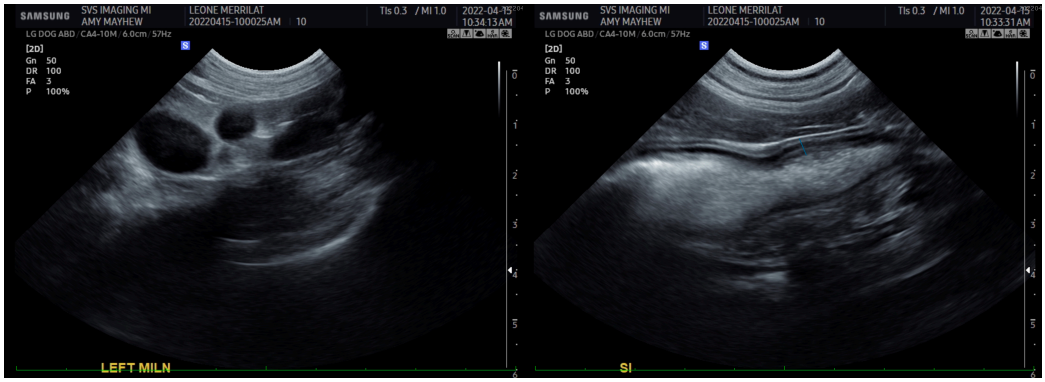
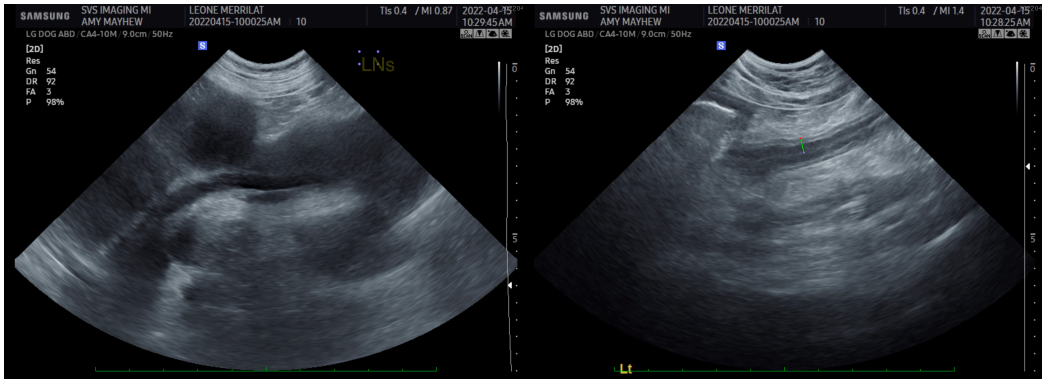
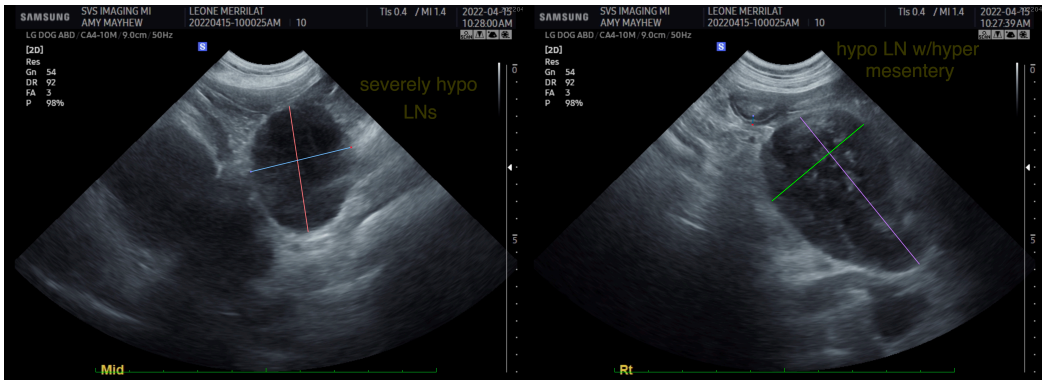
considered in the future to help decrease further sarcopenia.

- If FNAs are not diagnostic and none of the above therapies are successful, endoscopy and biopsies of the upper and lower GI tract are required.







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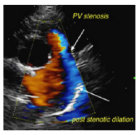

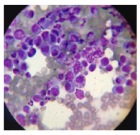

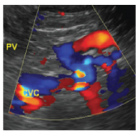

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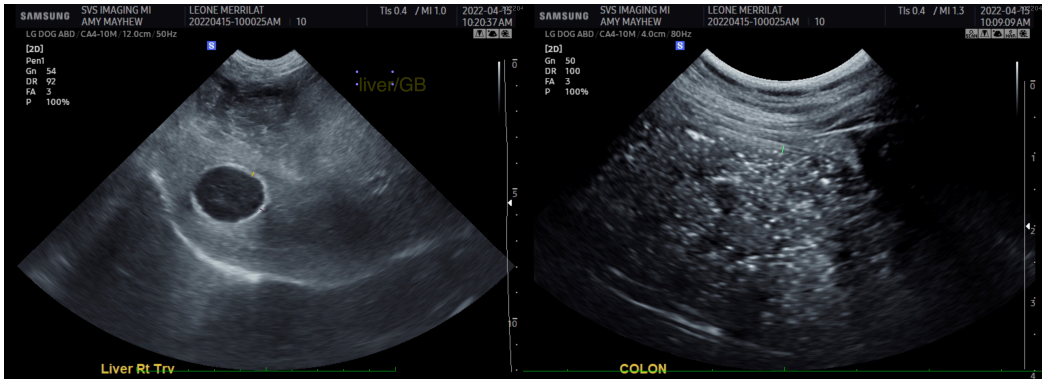

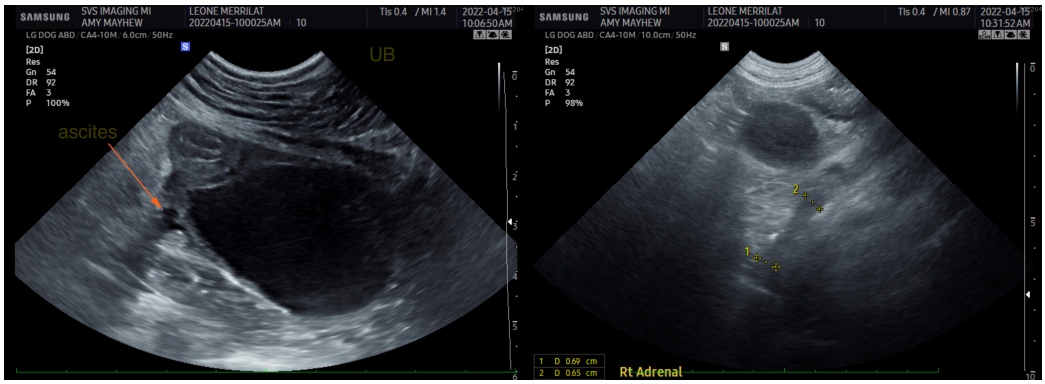

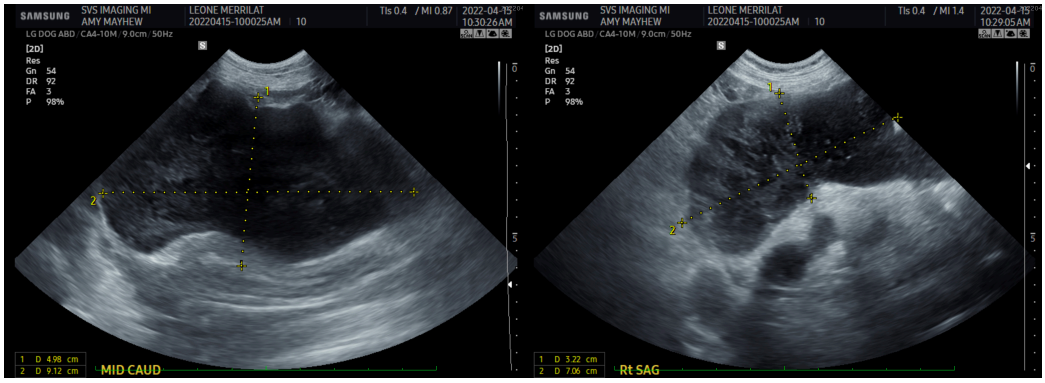

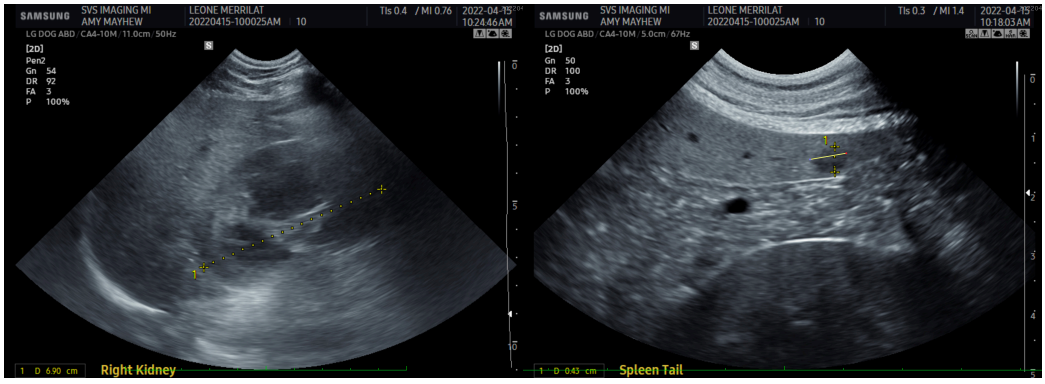

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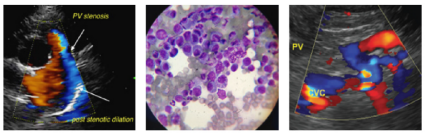

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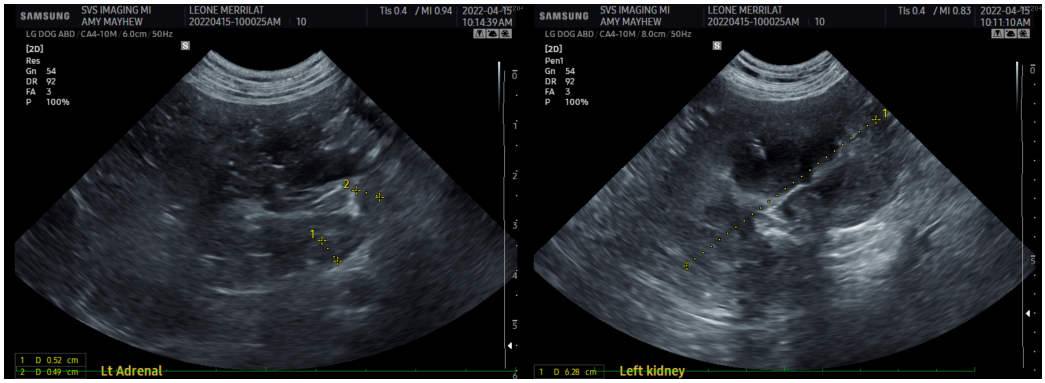

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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