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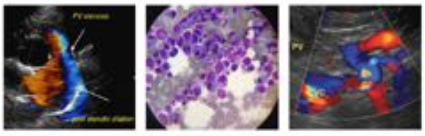

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PATIENT

Roxie Mollon

SPECIES

Canine

BREED

Maltese

SEX

Spayed female

AGE

8 years

WEIGHT

6.25 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VET

Union Lake VH

INVOICE

32044

DATE

7/28/22

PRESENTING CLINICAL SIGNS

History: No clinical signs. Presented for routine exam and lab work.
Abnormal PE/Chem/CBC/UA Results: Please see attached labs.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is adequately 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.

Kidneys

The **left** kidney measures 2.95 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Occasional mineralizations of the diverticulae are present, without signs of nephroliths. Pyelectasia (0.22 cm in the transverse view). The surrounding mesentery is mildly to moderately hyperechoic.

The **right** kidney measures 2.97 cm. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.41 cm at the cranial pole, 0.35 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 0.28 cm at the cranial pole, 0.30 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, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp to mildly rounded. The liver's echotexture is homogeneous and it is within normal limits in echogenicity. Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.

The **gallbladder** (GB) is moderately distended and a small amount of free floating and gravity-dependent echogenic material (sludge) is present, some of which is adhered to the intramural wall. The

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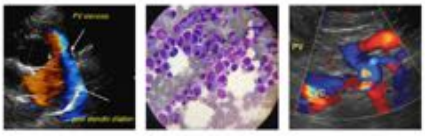

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GB wall is within normal limits in thickness and echogenicity. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction. The parenchyma surrounding the GB is not hyperechoic.

Gastrointestinal

A large amount of gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

Duodenum: Wall thickness is at the high end of normal reference range 0.49 cm. A large amount of gas and fluid are present within the lumen. Stippling and fogging of the mucosa are present. Decreased peristalsis is noted.

Jejunum: Wall thickness is within normal limits and the definition of the wall layers is preserved, however, striations, stippling and fogging of the mucosa are present. The loops of jejunum with striations are located primarily surrounding the body of the pancreas, which is also where the (very small amount of) ascites is located.

The colonic wall is not thickened, but some segments are at the high end of normal (0.19 cm). Although mural detail is conserved, the submucosa and serosa are more prominent than usual in some of the segments. A large amount of gas and semi-formed stools are present within the colon.

Pancreas

The **left limb** is mildly hypoechoic with smooth contours. The surrounding mesentery is severely hyperechoic, i.e. signs are suggestive of active pancreatitis.

The **body** is enlarged and moderately hypoechoic. It has smooth contours and the surrounding mesentery is moderately to severely hyperechoic.

Other

Lymph nodes No abnormalities are observed

Abdominal effusion

A scant amount of anechoic effusion is visualized ventral to a loop of jejunum and between a few loops of jejuni.

ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal (GI) tract**: Abnormalities consistent with diffuse GI inflammation. Striations and ascites are highly suggestive of **lymphangiectasia** or other protein losing enteropathy. However, an underlying chronic enteropathy, e.g., inflammatory bowel disease, food intolerance, dysbiosis, etc.), cannot be excluded. Neoplasia (lymphoma) is considered unlikely. Decreased peristalsis is also present.
- **Pancreas**: Pancreatitis is suspected, however, mild edema may be present due to hypoproteinemia.

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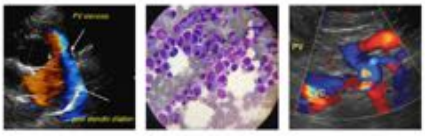

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- **Gallbladder:** Gallbladder sludge is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be indicated.
- **Mesentery:** Diffuse hyperechogenicity suggestive of steatitis.
- **Ascites**: Increased intestinal permeability and hypoalbuminemia are likely causes.
- **Kidneys**: Mineralizations may be diet and breed related, as well as early age related changes. Pyelectasia may be physiological. Other causes (pu/pd, intravenous fluid therapy, and pyelonephritis), are not considered clinically relevant in Roxie's case based on the history provided. Note, *glomerulonephritis or a protein losing nephropathy may accompany protein losing enteropathy's in some patients despite the absence of sonographic abnormalities.*

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Arterial blood pressure and a urine protein: creatinine ratio (exclude protein losing nephropathy)

Deworm, (fenbendazole), even if she receives monthly heartworm prevention.

Diet trial (veterinary prescription brand) *low fat*, and ideally, a hydrolyzed hypoallergenic diet (Purina HA).

+/- Supplementation with psyllium

Obtain history regarding signs of GERD from the client. Treatment with an anti-acid or proton pump inhibitor may be indicated.

If signs of GERD, 10-14 day trial with famotidine or omeprazole (0.7-1 mg/kg PO q12h)

Serum cobalamin, folate, +/- spec cPL, to exclude malabsorptive diseases and dysbiosis.

+/- Supplementation with cobalamin

Endoscopy and biopsies of the upper and lower GI tract diet, if no response to deworming, diet trials and other suggestions, above.

May require immunosuppressive agents if lymphangiectasia is diagnosed and cannot be controlled with diet alone.

clopidogrel may be necessary to decrease the risk of thromboembolic disease.

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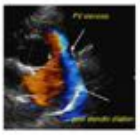
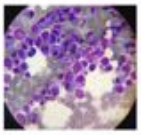
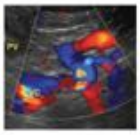

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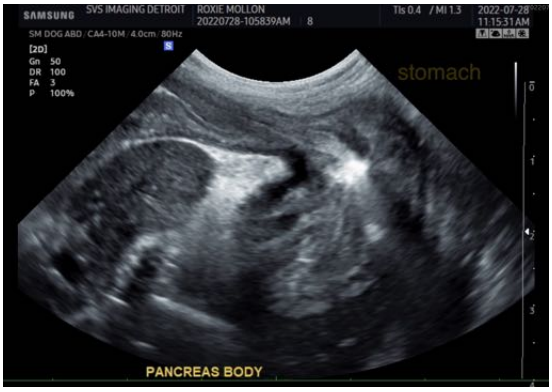

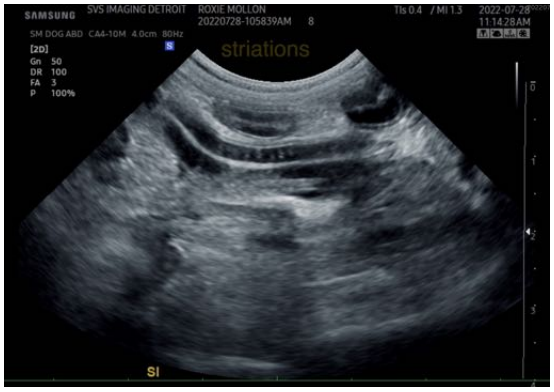

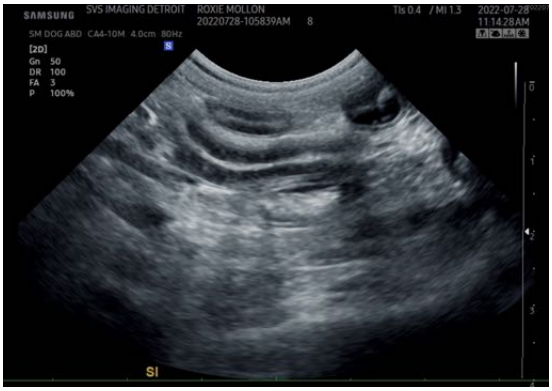

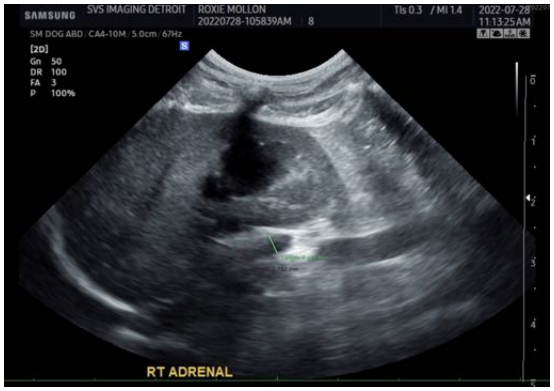

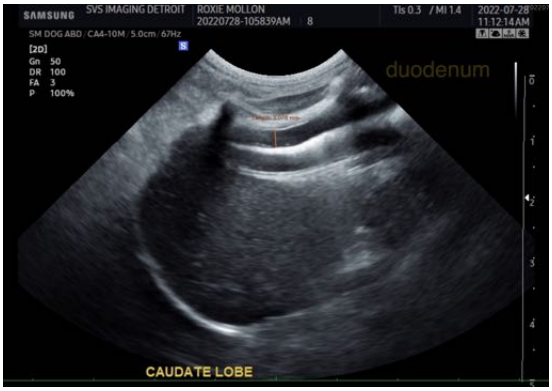

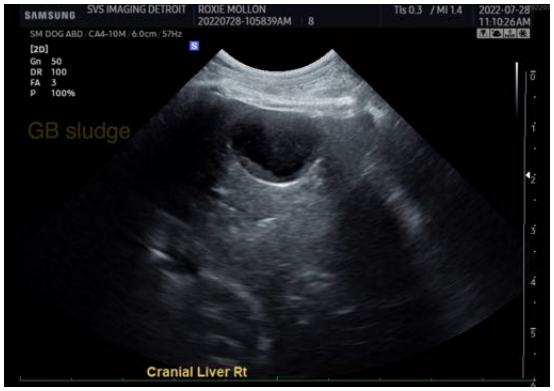

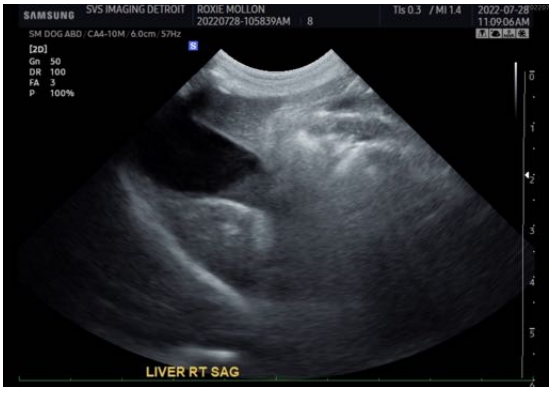

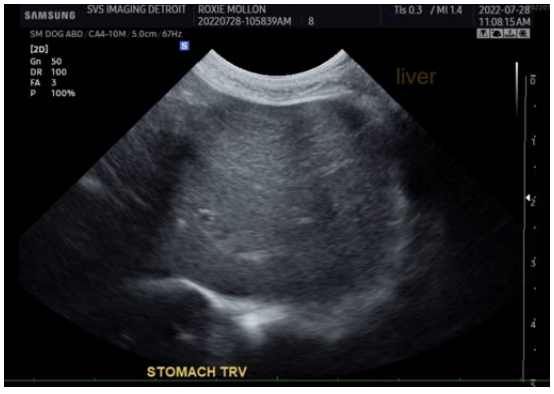

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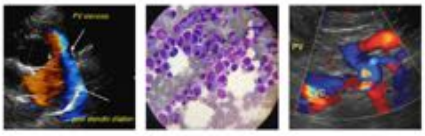

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BREED

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SEX

Spayed female

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WEIGHT

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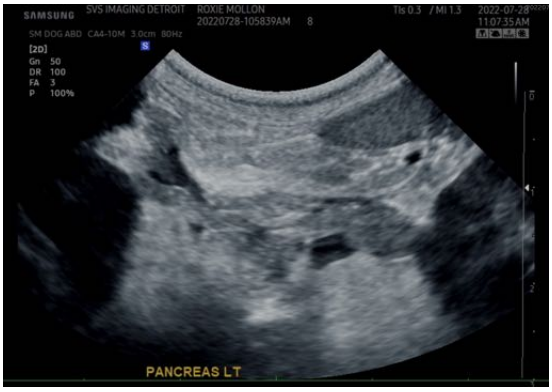

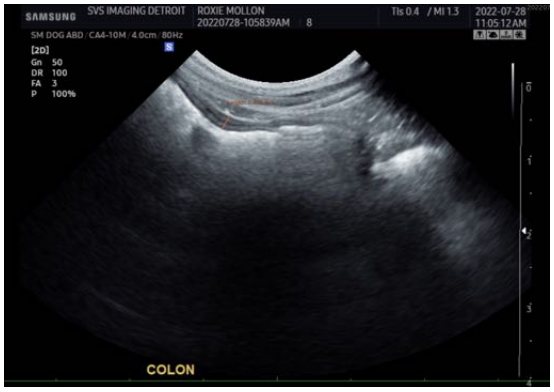

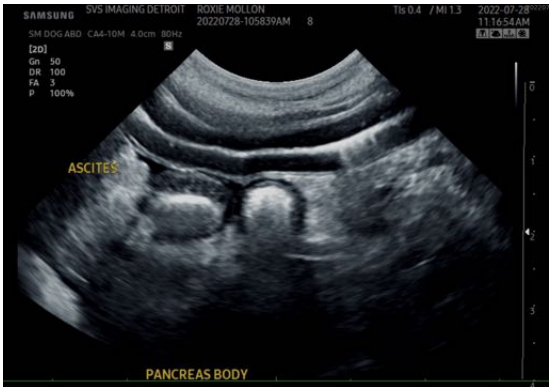

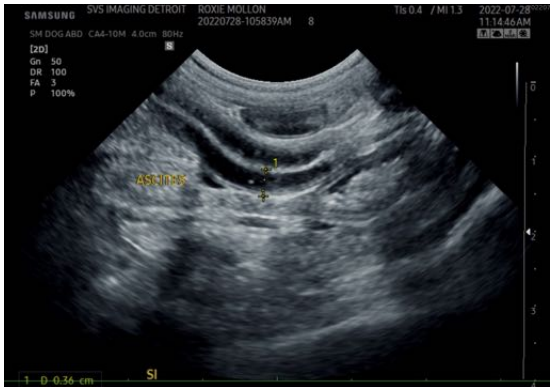

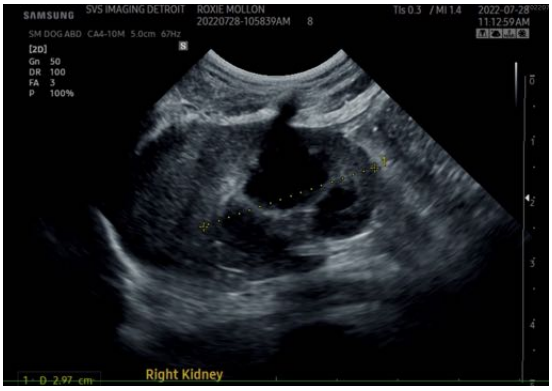

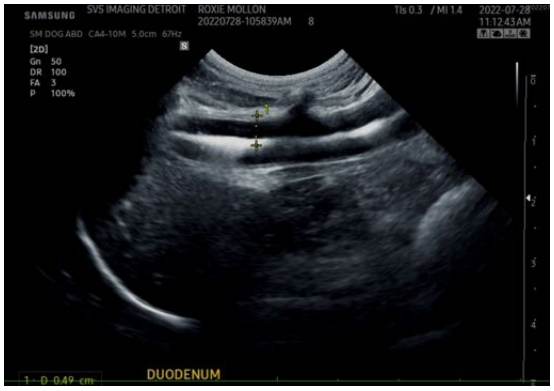

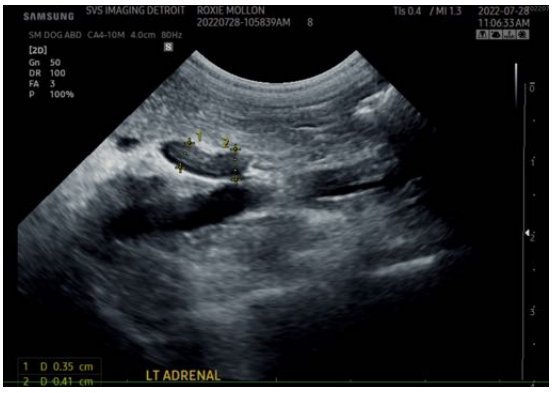

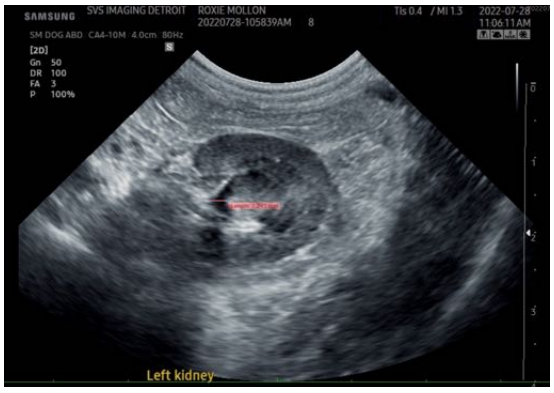

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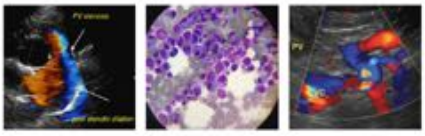

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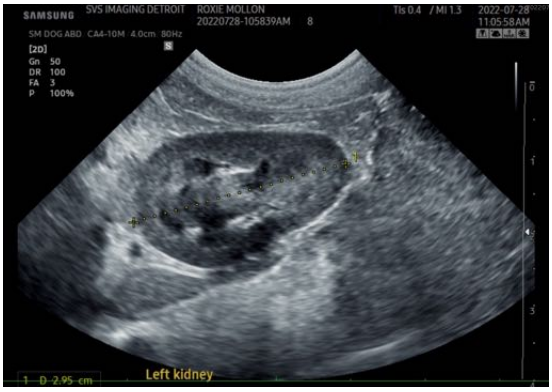

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

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