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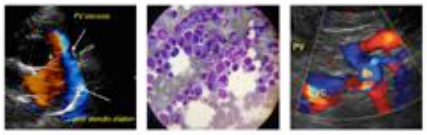

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PATIENT

Oreo Vue

SPECIES

Canine

BREED

Shih Tzu Mix

SEX

Intact Male

AGE

12 years

WEIGHT

5.6 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Amy Mayhew LVT

HOSPITAL NAME

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REFERRING VET

Family Pet Practice

INVOICE

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PRESENTING CLINICAL SIGNS

Current Medications: Pimobendan 1.25mg 1/2 tab PO BID Ursodiol 30mg/ml 1mL PO SID Denamarin small dog 1 tab PO SID Patient History: Recommended echocadiogram, AUS prior to anesthesia for dental (o declined echocardiogram) Hx of liver enzyme elevations- ALT 195 (0-125), ALP WNL-Sept 2021 Previous AUS performed July 2021: hyperechoic parenchyma with hypo echoic irregularity in right measuring 1.67cm x 1.39cm, large consolidated ball of sludge within gall bladder, mineralizations noted within both kidneys, hyperechoic right limb pancreas, adrenals measured (L) 3.8mm x 3.2mm (R) 3.5mm)
Abnormal Examination Findings: Exam Jan 2022 3. Immature cataracts OU 5. Mild tarter and GR- recommend dentals q6months, due to tarter unable to apply sanos. Recommed echo/AUS/bloodwork prior to anesthesia, recommend daily brushing or BID dental wipes, and water additive or oral rinse 6. Grade IV heart murmur, non-clinical- on pimobendan 7. Lungs clear 8. Dry skin- recommend oatmeal colloidal shampoo and fish oils. 9/10. Mildly tense hx of liver enzyme elevations- on ursodiol longterm

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.

Prostate

The prostate is mildly to moderately hyperechoic and very mildly heterogeneous, but no major abnormalities are noted.

Kidneys

The **left** kidney measures 3.04 cm. The capsule is smooth, but the shape of the kidney is slightly rounded. The cortex is mildly hyperechoic and a very mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, with very small nephroliths, i.e. acoustic shadowing is present. There is no evidence of pyelectasia. The surrounding mesentery is not hyperechoic. Note, mostly mineralization in the transverse view, as no to very little acoustic shadowing observed.

The **right** kidney measures 3.22 cm. The capsule is smooth. The cortex is mildly hyperechoic and a very mild loss of the normal definition of the cortico-medullary junction is present. Pinpoint and punctate mineralizations of the diverticulae and pelvis are present with “dirty shadowing”. 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 0.38 cm at the cranial pole, 0.46 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.

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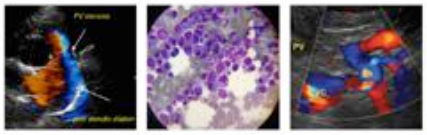

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The **right** adrenal gland measures 0.39 cm at the cranial pole, 0.37 cm at the caudal pole and 1.08 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. Occasional pinpoint hyperechoic foci noted throughout parenchyma, consistent with mineralization. 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 relatively sharp to very mildly rounded. The liver is mildly hyperechoic. A very subtle, diffuse, granular echotexture is observed, which may be due to a reactive hepatopathy. No abnormalities are observed with the hepatic vessels visualized.

A well-defined, hypoechoic nodule is noted on the right sagittal view, measuring 1.49 cm x 1.80 cm

Another hypoechoic nodule, dorsal to the first (described above), is noted. It measures 0.65 cm in diameter x 0.67 cm in length.

Note, as the probe fans the right liver, the hypoechoic nodules appear to coalesce to form a large hypoechoic region that is subcapsular. The region is slightly more heterogeneous and measures 1.57 cm in diameter x 1.35 cm in length.

The gallbladder (GB) is mildly distended with a small amount of inspissated echogenic material, which forms an oblong nodule, measuring 0.5 mm in height x 5.6 mm in length. Strings of mucus appear to be attaching the nodule to the intraluminar wall. The 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 mildly to severely hyperechoic.

Gastrointestinal

Ingesta, gas and fluid are present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. The muscularis appears mildly prominent.

A small amount of ingesta, gas and fluid are present within the lumen of the duodenum. No abnormalities are observed with the duodenum or small intestines.

The colonic wall is not thickened and mural detail is considered normal.

Pancreas

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

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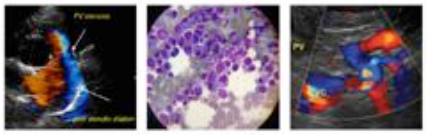

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The right limb has a very mildly coarse echotexture with pinpoint, hyperechoic foci, scattered throughout the parenchyma. The pancreas has smooth contours and is well defined. The surrounding parenchyma is within normal limits in echogenicity. Signs of active pancreatitis or neoplasia are not appreciated.

Other

Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- The diffuse hyperechogenicity of the liver is highly suggestive of a vacuolar hepatopathy, which may occur due to stress and chronic illness. There are no signs of hyperadrenocorticism as an underlying cause. Other causes of a diffusely hyperechoic liver and hepatomegaly, such as, hepatitis, cholestasis and cholangitis/cholangiohepatitis, are considered unlikely. The diffuse granular echotexture may be due to a reactive hepatopathy. The hypoechoic nodules observed are suggestive of nodular hyperplasia and/or regeneration, which is a benign, age-related change. There are no obvious signs of neoplasia.
- Inspissated gallbladder sludge that has formed an oblong nodule. Strings of mucus appear to be attaching the nodule to the intraluminar wall. The appearance is not consistent with a mucocoele.
- Differential diagnoses for the pancreatic changes include fibrosis due to age related changes, as well as previous episodes of pancreatitis, or ischemia. There are no signs of active pancreatitis or neoplasia.
- Mild renal changes are present, which are suggestive of age related degeneration. Mineralizations are also present, which may be associated with diet and breed predisposition.
- The prostatic changes are very subtle. They are suggestive of mild, subclinical benign prostatic hyperplasia with regard to the size and hyperechogenicity.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A fine aspirate may be performed during general anesthesia (GA) for the dentistry if a definitive diagnosis of the liver is desired.

Continue administration of ursodeoxycholic acid.

Consider thoracic radiographs prior to GA to assess the pulmonary vessels and presence of pulmonary congestion and risks associated with general anesthesia. Another option is to evaluate a NT-proBNP.

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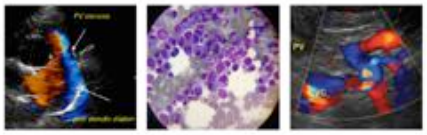

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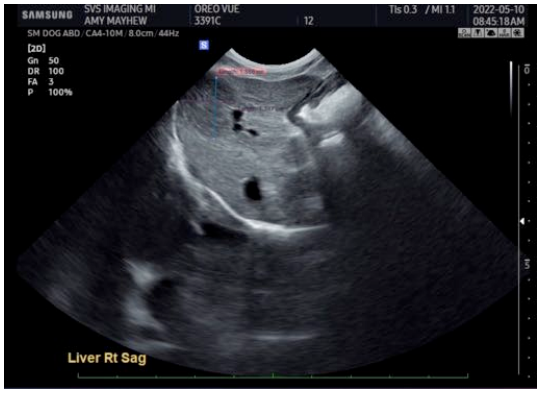

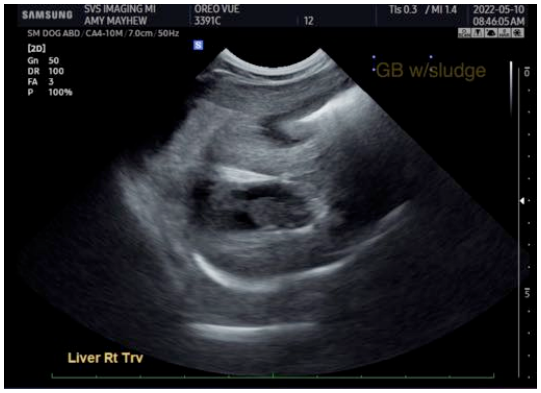

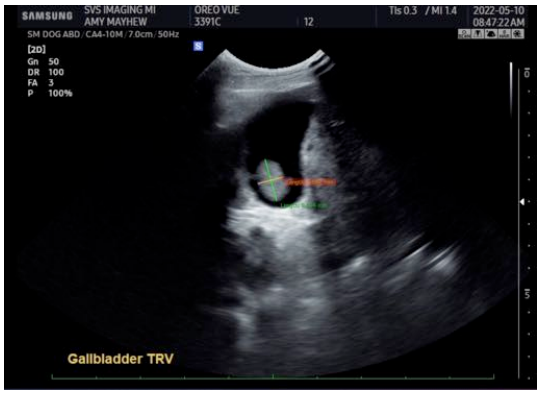

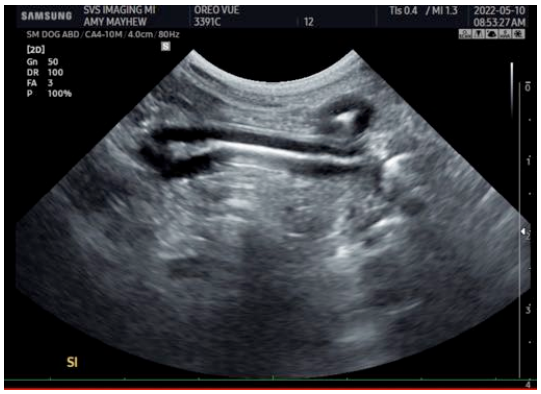

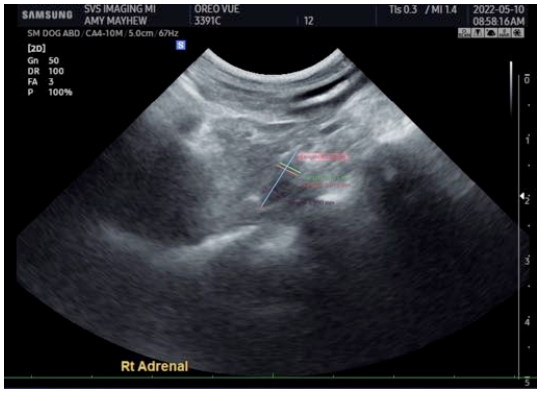

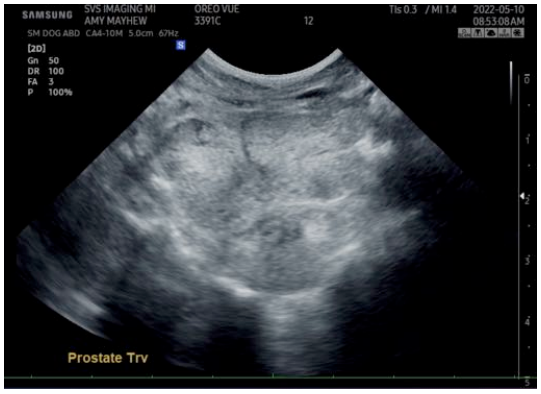

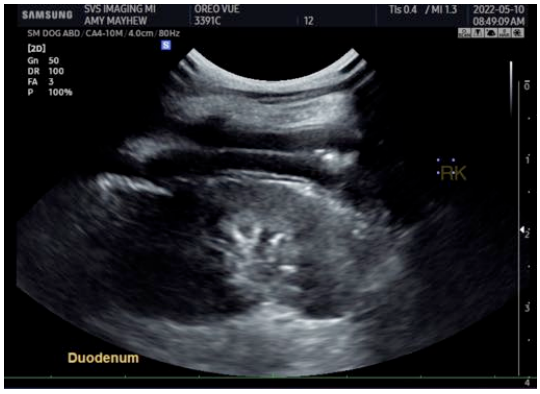

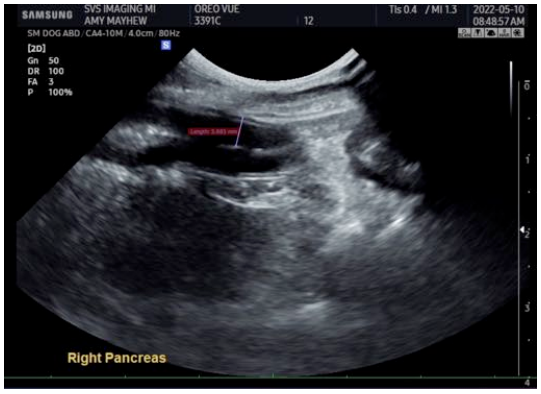

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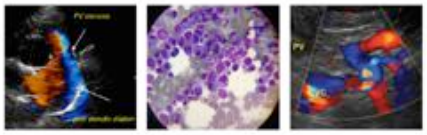

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PATIENT

Oreo Vue

SPECIES

Canine

BREED

Shih Tzu Mix

SEX

Intact Male

AGE

12 years

WEIGHT

5.6 Pounds

INTERPRETED BY

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IMAGING PERFORMED BY

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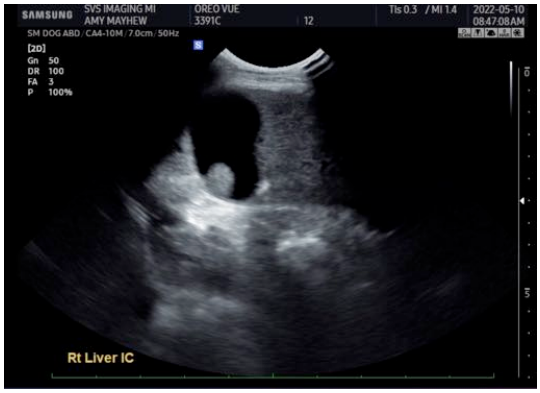

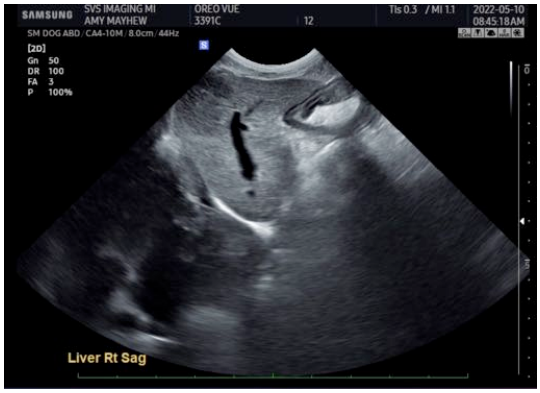

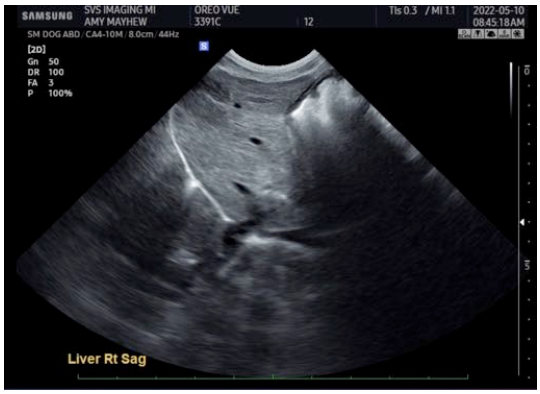

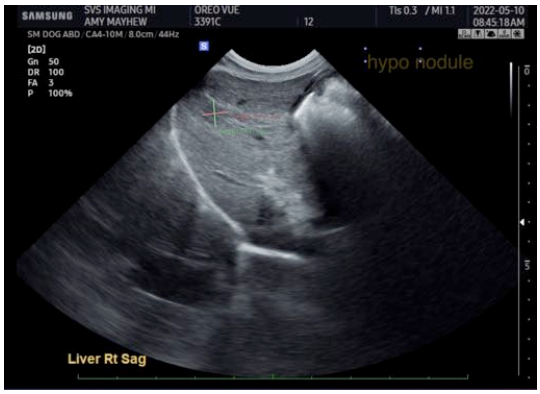

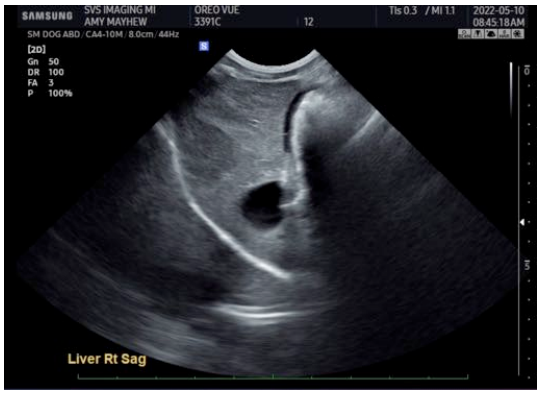

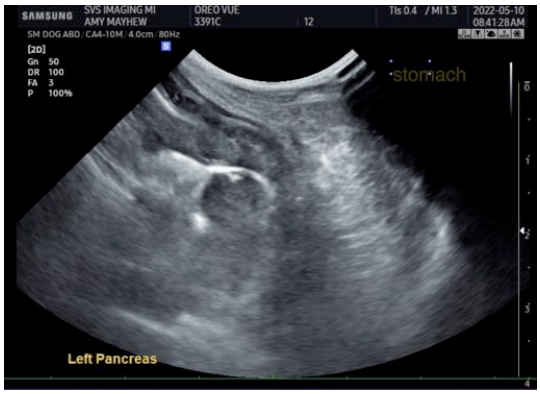

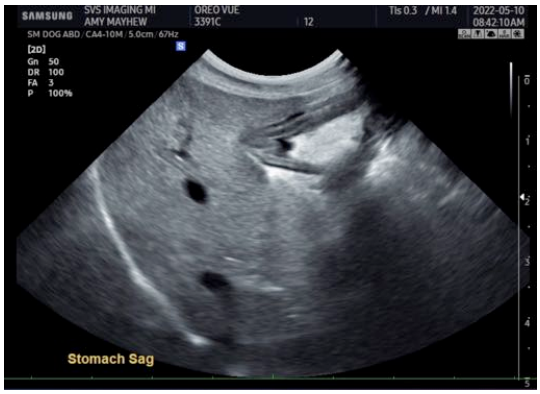

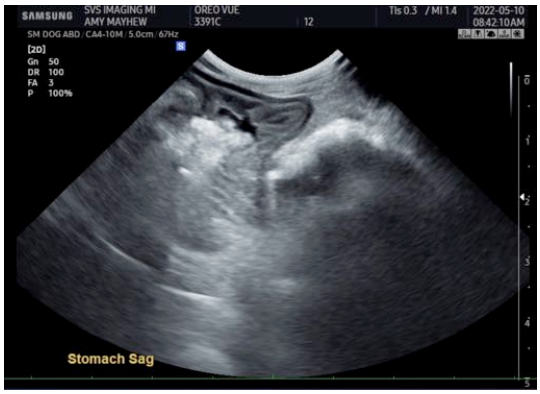

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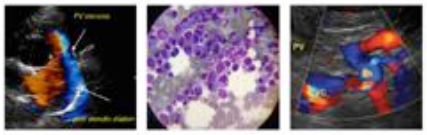

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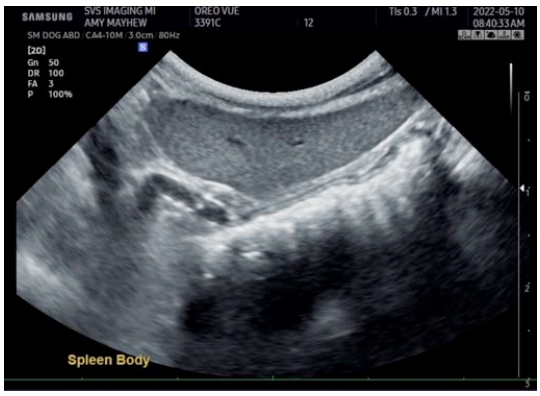

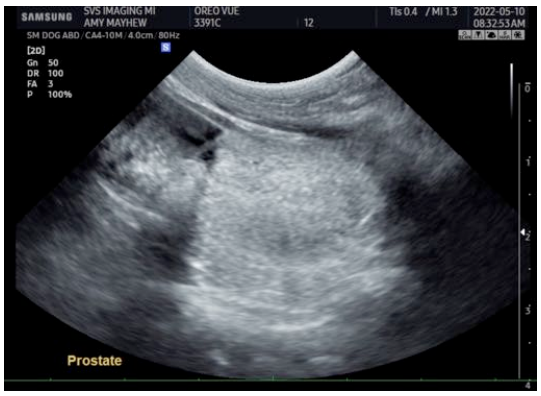

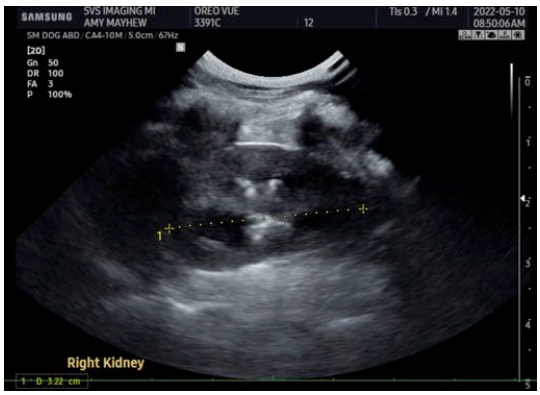

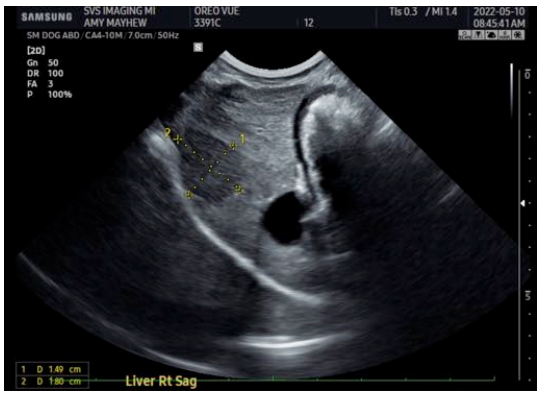

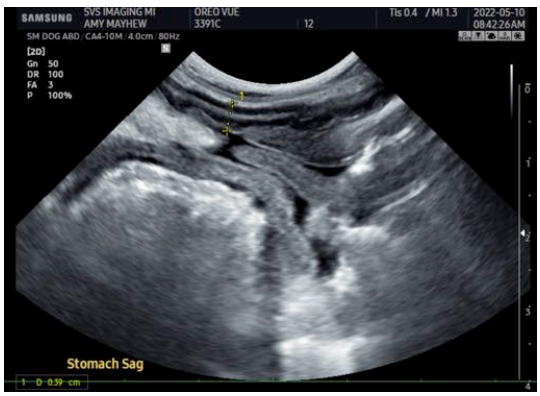

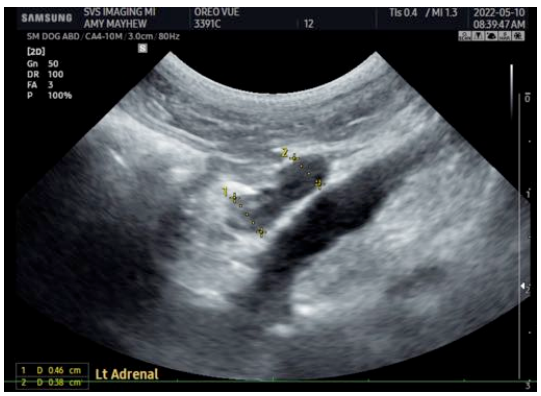

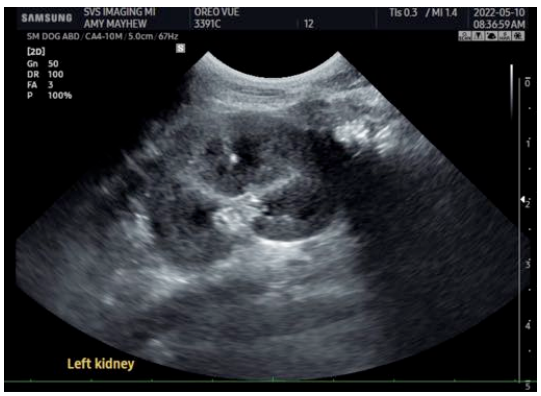

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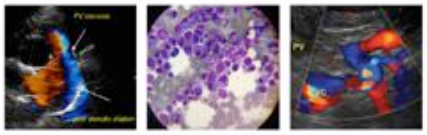

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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