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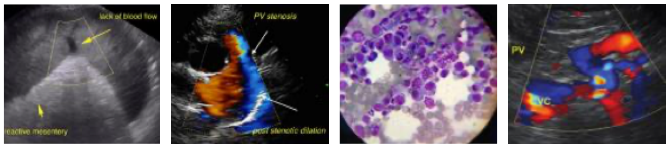

PATIENT

Rizzo Russell

SPECIES

Canine

BREED

Brittany Spaniel

SEX

Spayed Female

AGE

11 years

WEIGHT

24.6 kg

INTERPRETED BY

Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

IMAGING PERFORMED BY

Natasha Stanley

HOSPITAL NAME

Viking VH

REFERRING VET

Natasha Stanley

INVOICE

12858

DATE

4.27.23

PRESENTING CLINICAL SIGNS

History: At rDVM today found abnormal liver values, were told to bring P in to us for ultrasound. O reports over the last few months P has gotten weaker, unable to jump up and down, unbalanced and swaying when walking. Eating less + drinking more, has been having diarrhea for the last couple weeks.

Abnormal PE/Chem/CBC/UA Results: Mild leukopenia with a neutropenia. ALP 1073. ALT 655. Normal CP, however slow vertical nystagmus when p was placed in dorsal recumbency for shaving of US. See attached lab results. Several lipomatous masses

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder and visible portion of the pelvic urethra are normal for the degree of luminal distension. The urine is anechoic with no evidence of debris. Cystic calculi and discrete masses are not observed. The region of the trigone is normal.

The left kidney is normal in size (6.92 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. An ill-defined, hyperechoic medullary band is observed at the corticomedullary junction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is normal in size (6.81 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. An ill-defined, hyperechoic medullary band is observed at the corticomedullary junction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size (0.65 cm at cranial pole) (0.65 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is in normal size (1.23 cm at cranial pole) (0.55 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

The spleen is normal in size (1.93 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The liver is subjectively enlarged with swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely heterogenous in appearance, with several, ill-defined hyperechoic nodules throughout the organ. One of the larger nodules measures 2.20 cm in diameter. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

The gall bladder lumen is moderately distended. The wall is thin and smooth. A small amount of aggregated, echogenic, partially dependent debris/sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.

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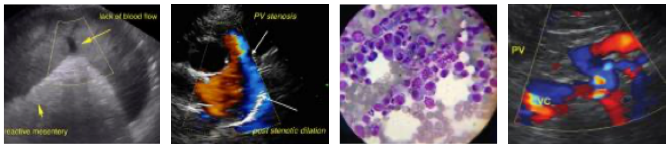

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Gastrointestinal
The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall is normal in thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas
A portion of the pancreas is obscured by the hepatomegaly. In the visualized portion no obvious abnormalities are seen.

Free Abdomen
The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- The hepatic parenchymal changes could be consistent with infiltrative neoplasia, inflammatory disease (i.e., bacterial cholangiohepatitis, chronic hepatitis), regenerative nodular hyperplasia, vacuolar hepatopathy, hepatotoxicosis (i.e., copper), or some combination thereof.

Secondary Findings

- Gall bladder debris/sludge, non-mucocele
- Bilateral chronic age-related renal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Consider pre-and postprandial serum bile acids +/- a blood ammonia level to assess for hepatic encephalopathy.
- Also consider Leptospirosis testing (i.e., blood and urine PCR, serology), particularly if the clinical suspicion for disease is high.
- A baseline blood pressure measurement is also recommended to assess for systemic hypertension, particularly in light of the patient's neurologic signs.
- A T4/free T4 by equilibrium dialysis should also be considered.
- Cytologic evaluation of the liver should be considered in this patient if clotting status is appropriate. A fine needle aspirate using a 25-gauge needle is recommended. If cytologic evaluation is inconclusive, consider a surgical liver biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for copper quantitation.
- If a more conservative approach is desired, consider empirical treatment for cholangiohepatitis with amoxicillin-clavulanic acid along with hepatic antioxidants. If liver values do not begin to improve within 7-10 days of initiating therapy, antibiotics should be discontinued and hepatic tissue sampling reconsidered. If values do improve, a 4–6-week course of treatment is recommended.

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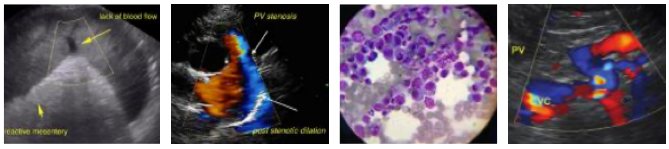

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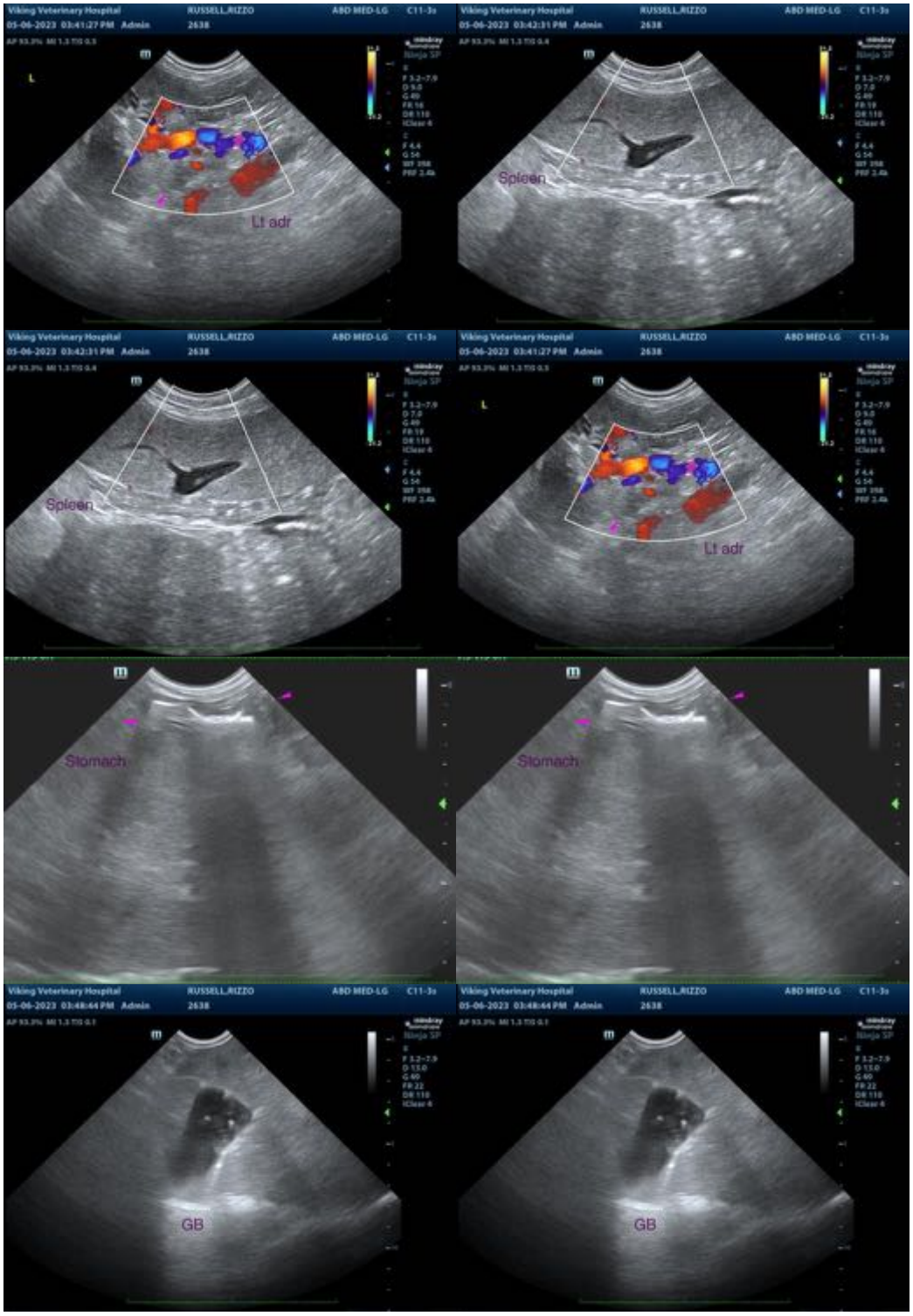
- Given the patient's age, three-view thoracic radiographs are recommended to assess cardiopulmonary status.
- Also consider consultation with a board-certified neurologist.



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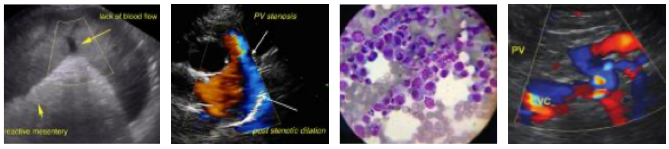

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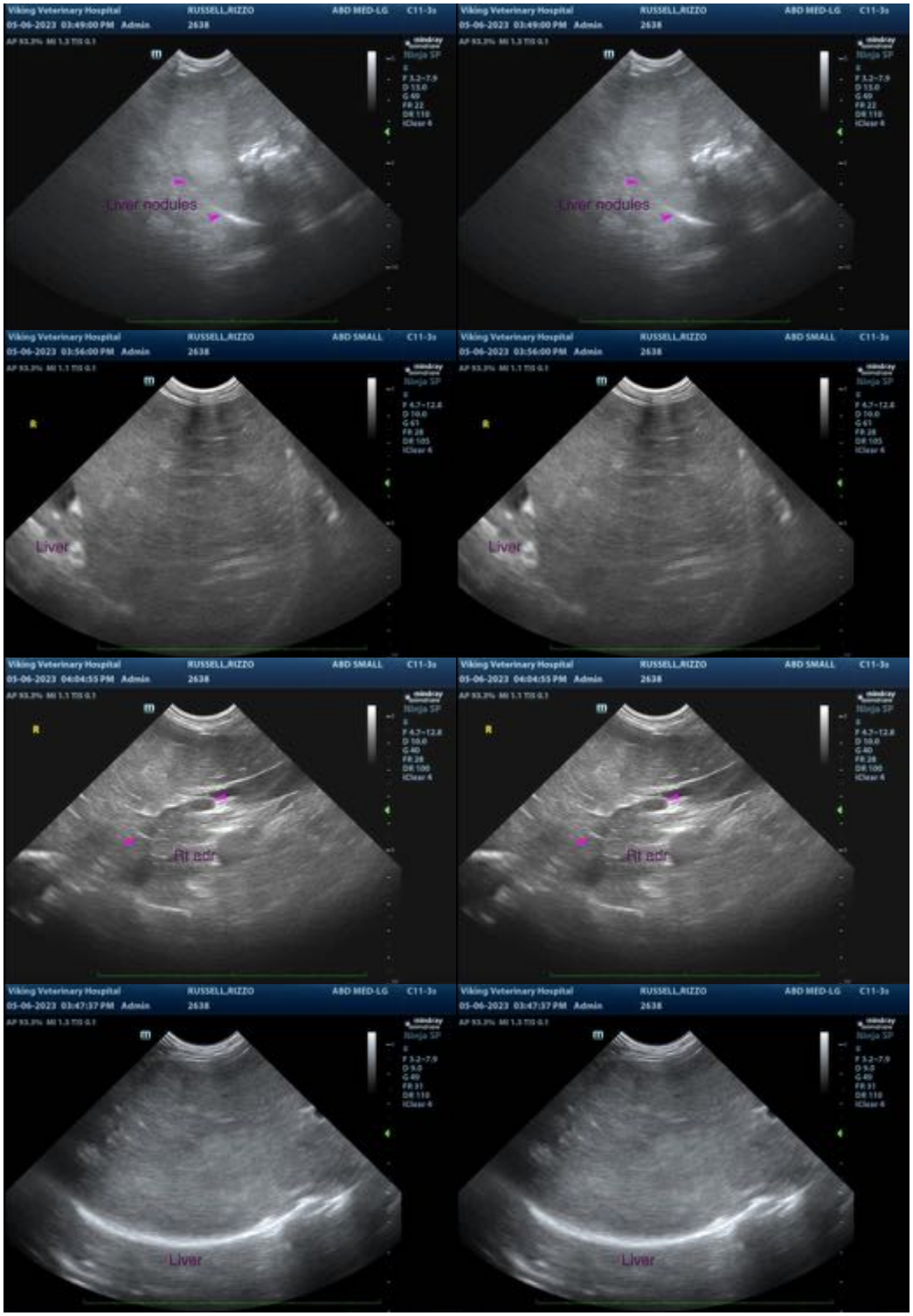

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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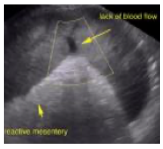
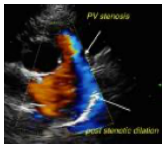
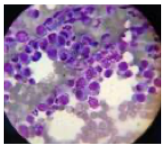
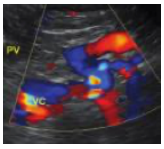

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

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