**PATIENT**Murphy Dalton
174983**SPECIES**

Canine

BREED

English Cocker Spaniel

SEX

Neutered Male

AGE

8 Years 1 Month

WEIGHT

13.4 kg

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM**IMAGING
PERFORMED BY**

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

WVRC - Dr. Sevide

INVOICE

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DATE

7/28/22

PRESENTING CLINICAL SIGNS

Murphy presented on 7/27 for fever. This morning Murphy seemed lethargic, hot to the touch and was lip smacking. He ate his breakfast slower than normal but did eat. He did not defecate this morning. Murphy presented to his family veterinarian this morning for these clinical signs. PE- moderate dehydration, T 105.2 UA- USG 1.010, no reds, whites, bacteria Cerenia 13mg SQ Clavamox 93.75 mg PO 500ml IVF throughout hosp today D/C temp 104.6 Medical History: Hx Pancreatitis HX chronic active hepatitis for elevated LEs (no aspirates performed) hx suspect IBD (no work-up) Current Medications: Denamarin SID Ursodiol 100mg PO BID Clavamox 93.75mg PO- received once Vaccination Status: UTD

Abnormal PE/Chem/CBC/UA Results: CBC: Hct 27.7 (L), PLT 36K (L), WBC 3.47 (L), Neutr 3.1 (L) Chem/lytes: Glob 4.2 (H), ALT 260 (H), ALP 322 (H) (relatively similar to previous values @ RDVM) 8/2021 ALT 363 (H), ALP 157 (N) Thoracic radiographs revealed no significant findings.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The **urinary bladder** is well distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra. A trivial amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

The **prostate** is homogenous and measures 1.09 cm; within normal limits for a neutered male.

Kidneys

The **left kidney** measures 6.11 cm. The capsule is smooth. 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 mildly hyperechoic.

The **right kidney** measures 6.55 cm. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths. Mild pyelectasia is present (2.12 mm in longitudinal view). The surrounding mesentery is moderately hyperechoic.

Aortic bifurcation/trifurcation No abnormalities observed.

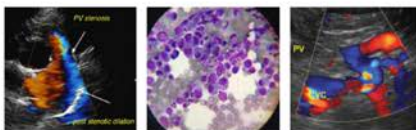
Adrenal Glands

The **left adrenal gland** measures 0.58 cm at the cranial pole, 0.43 cm at the caudal pole. The cranial pole is "more plump" or rounder compared to the caudal pole, which is flattened. No abnormalities are noted with the gland's echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right adrenal gland** measures 0.79 cm at the cranial pole, 0.52 cm at the caudal pole. The cranial pole is mildly enlarged and slightly rounder. A discrete mass or nodule is not visualized. No abnormalities are noted with the gland's echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

Mild splenomegaly is suspected. The borders of the head and tail are rounded and a subtle, but diffuse, miliary echotexture is observed. Mild perivascular cuffing, consistent with myelolipomas is observed; these are not considered clinically significant. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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Liver

Overt microhepatitis is not evident. The liver's borders are scalloped and rounded. A diffusely coarse cobblestone echotexture is observed with hyperechoic "striations" noted throughout the liver. The latter are hyperechoic walls of the hepatic arteries, most likely caused by fibrosis. The surrounding mesentery is severely hyperechoic. An enlarged, heterogenous hepatic lymph node is noted.

The **gallbladder** (GB) is severely distended with a large amount of free floating, gravity-dependent and inspissated echogenic material (sludge). Sludge is also adhered to the intramural wall. The GB wall is mildly thickened (1.2-2.7 mm) and mildly hyperechoic. The parenchyma surrounding the GB is hyperechoic. The cystic and common bile ducts are not visualized, however, an obvious obstruction is not noted.

Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined. A large amount of granular material is present in the lumen of the stomach. Delayed gastric emptying is suspected as Murphy was fasted for the ultrasound. He received his medication, however, the amount of material is far too large to be explained by the medication.

Duodenum 0.46 cm. Wall thickness is within normal limits and the definition of the wall layers is preserved. Gas and fluid are present within the lumen

Jejunum: Wall thickness is within normal limits and the definition of the wall layers is preserved. Gas and fluid are present within the lumen of the small intestines.

Transverse colon: Gas and ingesta present

The colonic wall is not thickened and mural detail is considered normal. Formed and segmented stools are present in the descending colon, beginning at the level of the left kidney. Constipation may be present.

Pancreas

Mild hypoechogenicity of the right limb with smooth contours. Mild hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis cannot be excluded.

Other**Lymph nodes**

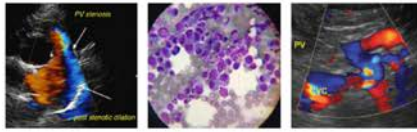
Hepatic lymph node: Moderately enlarged, 1.09 cm in diameter x 3.48 cm in length, mildly irregular borders and mildly to moderately hypoechoic. The surrounding mesentery is moderately hyperechoic.

Abdominal effusion

A small amount of anechoic ascites is visualized dorso-laterally to the spleen.

ULTRASONOGRAPHIC FINDINGS

- **Liver and Gallbladder:** Murphy's pyrexia is likely associated with a suppurative hepatitis and cholecystitis. Cholangitis/cholangiohepatitis may also be implicated. The neutropenia is most likely due to margination to the site of inflammation and/or infection. Signs of fibrosis and

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possibly bridging fibrosis, are suspected. Neoplasia is considered less likely, but cannot be ruled out.

- **Spleen:** Splenomegaly with changes that may be associated with neoplasia, such as a round cell tumour. Extramedullary hyperplasia, reactive hyperplasia, and splenitis remain possible, but less likely differential diagnoses (rounded, scalloped borders).
- **Pancreas:** Mild, smoldering pancreatitis cannot be excluded.
- **Gastrointestinal (GI) tract:** Delayed gastric emptying is suspected, i.e., Murphy was fasted for the ultrasound. He received his medication, however, the amount of material is far too large to be explained by the medication. Signs of a mild ileus and constipation.
- **Kidneys:** Very mild pyelectasia of the right kidney may occur secondary to intravenous fluids, polydipsia and polyuria and pyelonephritis. The latter remains a differential diagnosis.
- **Ascites** possibly due to hemorrhage, if platelet count is accurate. Paraneoplastic cause, vasculitis, etc. Portal hypertension has been ruled out.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Leptospira spp. serology, SNAP 4Dx and other vector borne disease depending on risk of exposure.

Review history for possible causes of hepatitis, drugs, including supplements, plants, etc.

Intravenous fluids

Analgesia

Other supportive care, anti-emetics, etc.

Addition of enrofloxacin (increase bacterial coverage, including pyelonephritis)

Baseline cortisol

Re-evaluate the platelet count, including a blood smear

Coagulation profile

Vitamin K (0.5 mg/kg SQ q8-12h for 1-3 doses), even if PT/PTT within normal limits. A single dose will help with cholestasis.

Abdominocentesis of the small amount of effusion lateral to the spleen

Fine needle aspirates of the hepatic lymph node and spleen

If the latter are non-diagnostic, and Murphy's vital signs, platelet count and coagulation profile are stable and within normal limits, respectively, a liver biopsy may be considered to achieve definitive diagnosis.

Consider blood typing prior to the procedure.

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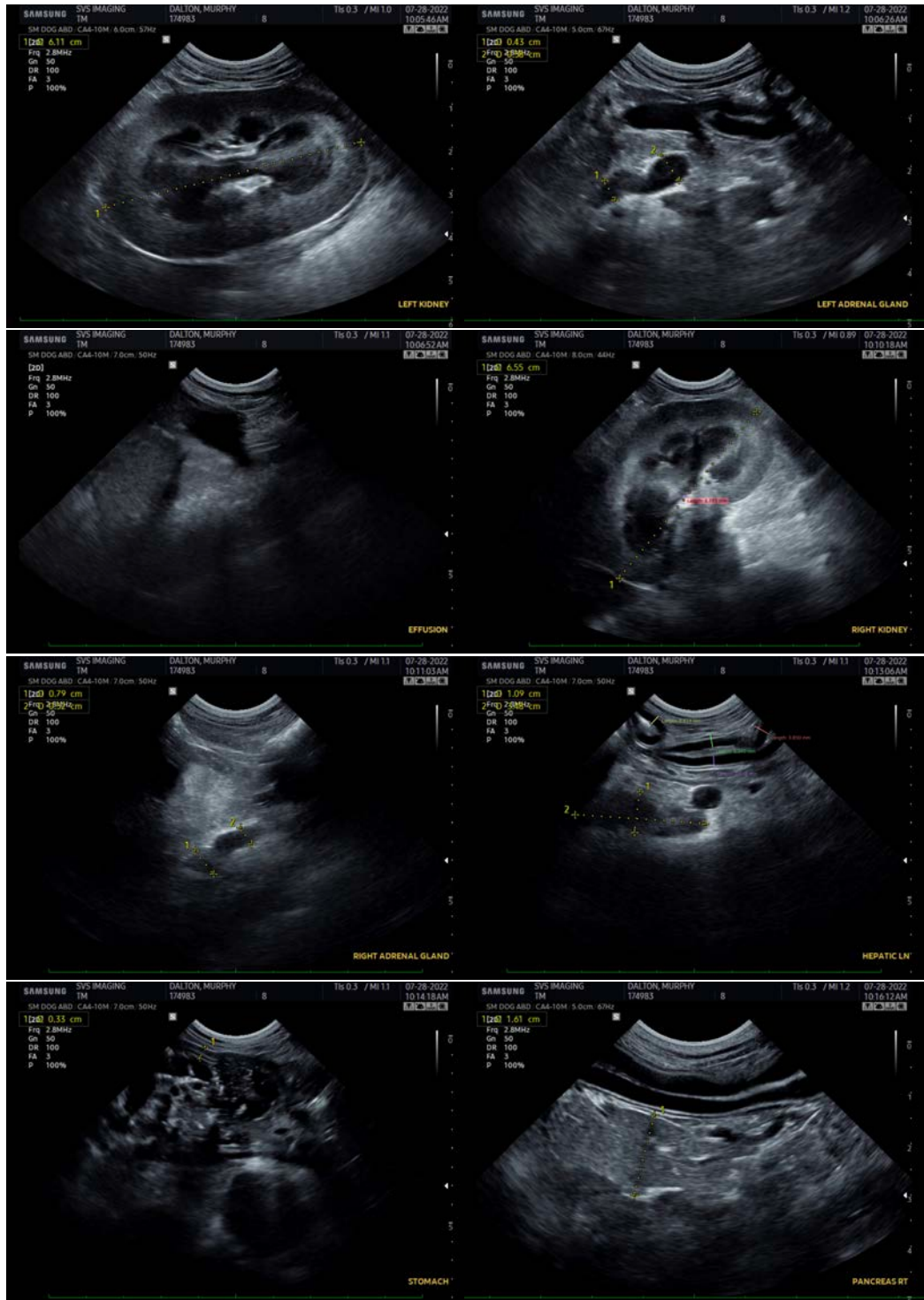
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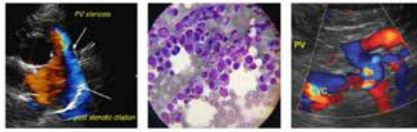
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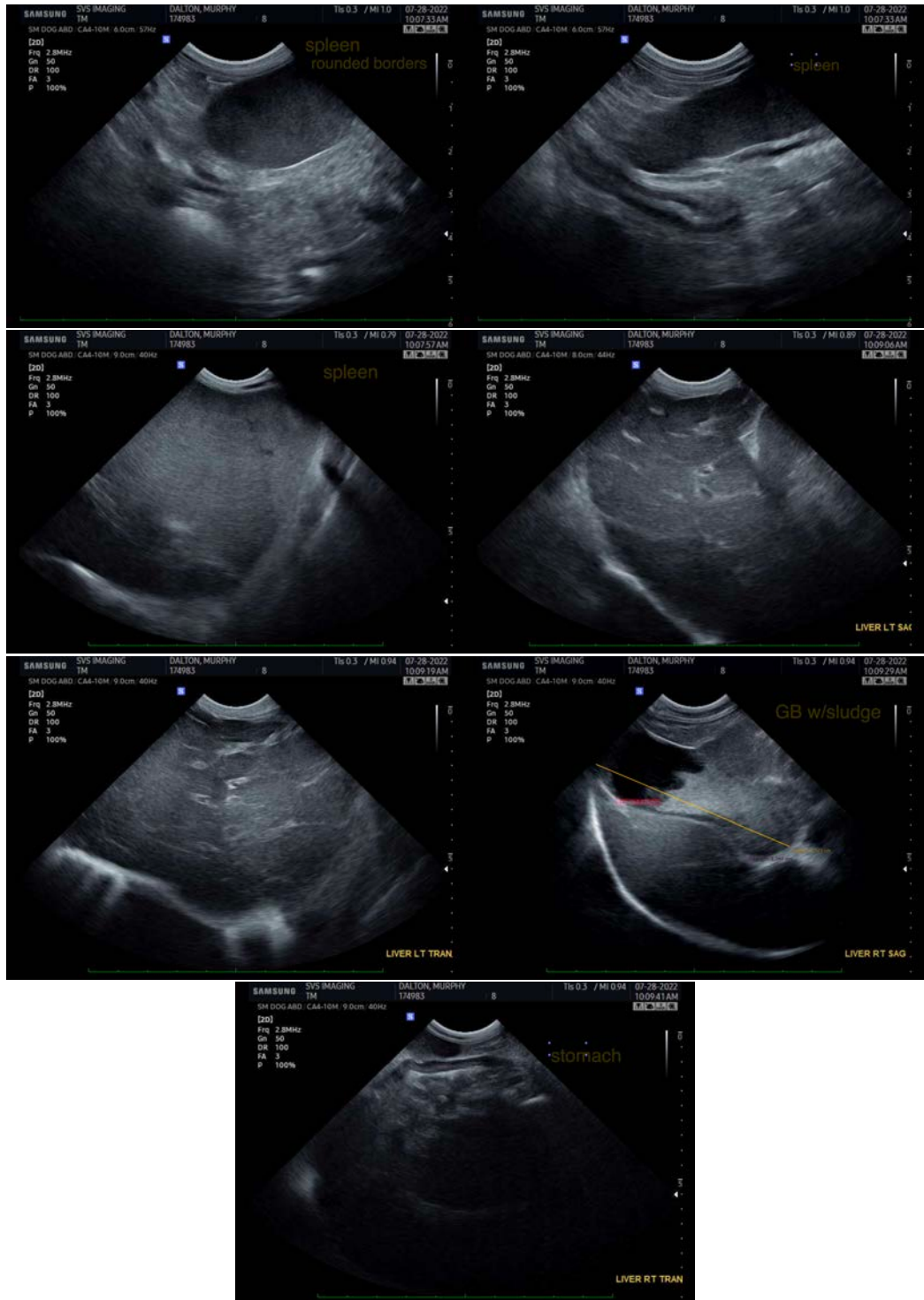
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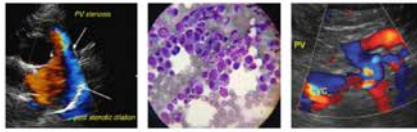
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Lisa.Carioto@sonopath.com